DELEUZE AND ANCIENT GREEK PHILOSOPHIES OF NATURE

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Abstract

Many of Gilles Deleuze's most celebrated arguments are developed in conversation with Plato, Aristotle, Chrysippus and Epicurus. This thesis argues that ancient Stoic conceptions of causality and language and Epicurean contributions to geometry and physics are especially important to Deleuze because they significantly undergird the concepts of "event" and "problem" that characterize Deleuze's alternative image of thought and philosophy of nature. The role of Hellenistic influences on Deleuze has been underappreciated, probably because his references are often allusive and oblique. My dissertation reconstructs and supplements Deleuze's interpretations of these ancient Greek philosophers. I offer critical analysis and discussion of the uses to which Deleuze is trying to put them, as well as evaluations of Deleuze's readings in light of contemporary scholarship on Greek philosophy. Specifically, I defend Deleuze's claim that the theory of events in *The Logic of Sense* is derived in large part from the ancient Stoics. Despite being supplemented by a healthy dose of twentieth-century structuralism, Deleuze's reading of the Stoics is not indefensible, especially his interpretation of incorporeal *lekta* as events linked by relationships of compatibility and incompatibility independent of conceptual entailment or physical causality. I also offer an entirely new evaluation of Deleuze's polemic with Aristotle's conception of difference. The correct understanding of Deleuze's position has been obscured by his apparent conflation of the Aristotelian concepts of homonymy and analogy. What might otherwise seem to be a misreading of Aristotle should be read as part of an incompletely realized argument to the effect that Aristotle's account of the core-dependent homonymy of being fails. Finally I explicate Deleuze's contention that Epicurean atomism is a "problematic Idea," which is derived from a careful but almost entirely implicit reading of both Epicurus and Lucretius. Deleuze reads the Epicurean "swerve" as a mechanism for the self-determination of physical systems, which models the capacity of problematic ideas to provoke new lines of reasoning and alternative forms of thought. The influence of Epicureanism and Stoicism on Deleuze's late work on meta-philosophy in What is Philosophy? accounts for the way it treats the images of nature and of thought as inextricably linked. Deleuze understands the ambition to give a joint account of nature and thought to be typical of Hellenistic philosophy.

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Deleuze and Guattari say about authorship that, since each of us is several, when we write there's always already a crowd. For me the crowd includes Russell Anderson, Jen Primmer, Amy Hondronichols, Jason D'Aoust, Adam Riggio and Tano Posteraro. They deserve thanks for their indirect intellectual contributions. Kait Pinder has been, as ever, my main intellectual mediator. Finally, Peter inspired a few conceptual illustrations.

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Abbreviations

Works by Gilles Deleuze

- ABC *L'abécédaire de Gilles Deleuze, avec Claire Parnet*. Paris: DVD Editions Montparnasse (1996, 2004). Online text, translated by Charles Stivale: www.langlab.wayne.edu/CStivale/d-g.
- AV 'The Actual and the Virtual.' Trans. E. R. Albert. In Gilles Deleuze and Claire Parnet, *Dialogues II*. New York: Columbia University Press, 2002. 148-52.
- B *Bergsonism*. Trans. Hugh Tomlinson and Barbara Habberjam. New York: Zone Books, 1991.
- CC *Essays Critical and Clinical.* Trans. Michael A. Greco and Daniel W. Smith. Minneapolis: University of Minnesota Press, 1997.
- D *Dialogues* (with Claire Parnet). Trans. Hugh Tomlinson and Barbara Habberjam. New York: Columbia University Press, 1987.
- DI *Desert Islands and Other Texts 1953-1974*. Ed. David Lapoujade. Trans. Michael Taormina. New York: Semiotexte, 2004.
- DR *Difference and Repetition*. Trans. Paul Patton. New York: Columbia University Press, 1994.
- EP *Expressionism in Philosophy: Spinoza*. Trans. Martin Joughin. New York: Zone Books, 2005.
- F *The Fold: Leibniz and the Baroque.* Trans. Tom Conley. Minneapolis: University of Minnesota Press, 1988.
- FB *Francis Bacon: The Logic of Sensation*. Trans. Daniel W. Smith. Minneapolis: University of Minnesota Press, 2003.
- K *Kant's Critical Philosophy*. Trans. Hugh Tomlinson and Barbara Habberjam. Minneapolis: University of Minnesota Press, 1984.
- LS *The Logic of Sense*. Trans. Mark Lester with Charles Stivale. New York: Columbia University Press, 1990.
- N *Negotiations: 1972-1990.* Trans. Martin Joughin. New York: Columbia University Press, 1995.
- NP *Nietzsche and Philosophy*. Trans. Hugh Tomlinson. New York: Continuum, 2005.
- SPP *Spinoza: Practical Philosophy*. Trans. Robert Hurley. New York: City Lights Books, 1988.

TRM *Two Regimes of Madness: Texts and Interviews 1975-1995.* Trans. Ames Hodges and Mike Taormina. New York: Semiotext(e), 2006.

Works by Gilles Deleuze and Félix Guattari

- AO *Anti-Oedipus: Capitalism and Schizophrenia.* Trans. Robert Hurley, Mark Seem and Helen R. Lane. Minneapolis: University of Minnesota Press, 1983.
- TP A Thousand Plateaus: Capitalism and Schizophrenia. Trans. Brian Massumi. Minneapolis: University of Minnesota Press, 1987.
- WP *What is Philosophy?* Trans. Hugh Tomlinson and Graham Burchell. New York: Columbia University Press, 1994.

Fragments and Testimonies

- DK Die Fragmente der Vorsokratiker. Eds. H. Diels and W. Krantz. Berlin: 1903.
- D.L. Diogenes Laertius, *Lives of Eminent Philosophers: 2 Vols.* Trans. R. D. Hicks. Cambridge, MA: Loeb.
- HP *The Hellenistic Philosophers: 2 Vols.* Eds. A. A. Long and David Sedley. New York: Cambridge University Press, 1988.
- S.E. *M* Sextus Empiricus, *Adversus Mathematicos libri XI*. Ed. Immanuel Bekker. Berlin, 1842.
- S.E. PH Sextus Empiricus, Purrhoneioi hupotuposeis ('Outlines of Pyrrhonism'). Ed. Immanuel Bekker. Berlin, 1842. Translated as Outlines of Scepticism by J. Annas and J. Barnes. Cambridge: Cambridge University Press, 2000.
 - SVF Stoicorum Veterorum Fragmenta. Ed. H. von Arnim. Leipzig: Teubner, 1903-05.

Introduction

↑ ILLES DELEUZE'S APPROPRIATION of concepts from ancient Greek philosophy informs what ${f J}$ we might call his philosophy of nature. The three chapters of this dissertation examine Deleuze's readings of the Stoics, Aristotle, and the Epicureans, respectively. Although for the most part I let Deleuze's discussions dictate my focus, rather than forcing my analyses to conform to a preestablished plan, nevertheless thematic tendencies can be detected in each section: I examine Deleuze's reading of the Stoics preeminently in terms of logic; his reading of Aristotle in terms of metaphysics and biology; and the Epicureans in terms of physics and geometry. From each of these sections I also extract one characteristically Deleuzian concept as a vector for elucidating Deleuze's philosophy of nature: from Deleuze's reading of Stoicism the concept of *event*; from the reading of Aristotle, *difference*; and from the reading of Epicurus, *problem*. The three chapters of my dissertation are relatively independent to the extent that they each explicate a different key Deleuzian concept in the context of different ancient references, but they tell an interconnected story. I conclude that event, difference, and problem are three terminological vectors according to which Deleuze develops the renewed philosophical conception of nature that he promised toward the end of his career. I characterize Deleuze's philosophical conception of nature as synthetic and paratactic, terms which I leave unexplained for now. While interpreters of Deleuze today are keen to understand Deleuze's philosophy of difference in terms of events and problems, the role of these Hellenistic influences on Deleuze has been underappreciated, probably because Deleuze's references are often allusive rather than explicit. My dissertation corrects this omission.

Deleuze approached the Greeks obliquely but many of his most important arguments are developed in conversation with Plato, Aristotle, Chrysippus and Epicurus. Deleuze's references betray a classical erudition that is usually just implicit, relegated to footnotes or allusions. As far as I know, there has been no sustained study of Deleuze's engagement with ancient Greek philosophy, either in English or French. Generally speaking, Deleuze's appreciative readings of the Stoics are remarkably well supported by contemporary scholarship and seem even to anticipate later interpretations. Deleuze's remarks about Aristotle, on the other hand, are polemical and more difficult to square with recent mainstream interpretations, especially since Deleuze appears to

1

conflate Aristotle's doctrines of analogy and homonymy. Finally, Deleuze's reading of Epicureanism is more idiosyncratic than his reading of either the Stoics or Aristotle, in the sense that it is most closely bound up with the development of particularly Deleuzian metaphysical notions, such as the reality of the virtual.

By way of introducing what follows, I will describe Deleuze's ambivalent approach to the history of philosophy in general and what is unique about his approach to ancient Greek philosophy in particular.

DELEUZE AND THE HISTORY OF PHILOSOPHY

Gilles Deleuze wrote several monographs in the history of philosophy: books on Hume (1953), Nietzsche (1962), Kant (1963) Bergson (1966), two books on Spinoza (1968 and 1970) and one on Leibniz (1988). He wrote the majority of these books before his major independent philosophical works, Difference and Repetition (1968) and The Logic of Sense (1969), and also before his collaborations with Félix Guattari: Anti-Oedipus (1972), A Thousand Plateaus (1980) and What is Philosophy? (1991). It looks as if Deleuze wrote his works in the history of philosophy before turning to write in his own voice, in propria persona. Readers of Deleuze have been interested in various aspects of his approach to the history of philosophy. Some have emphasized Deleuze's "apprenticeship" in the history of philosophy (Hardt 1993), and others the way in which he has the philosophers on whom he writes speak in "free indirect discourse" such that it becomes difficult to dissociate commentator and subject, to isolate when it is Deleuze and when it is, for example, Bergson speaking (Alliez 2004, Antonioli 1999, Boundas 1996). Still others have suggested that the eight-year period of silence between Deleuze's book on Hume and his book on Nietzsche is a period of germination in which his later "mature" ideas took shape (Hardt 1993, Dosse 2010). There has been a lot of scholarly interest in Deleuze's work in the history of philosophy.

Deleuze never wrote a book on ancient Greek philosophy, nor on any particular ancient Greek philosopher or school. This does not mean, however, that ancient Greek philosophy held no interest for him. Far from it. Detailed readings of Plato, Aristotle, the Stoics and the Epicureans appear in Deleuze's mature works, especially *Difference and Repetition*, *The Logic of Sense*, *A Thousand Plateaus*, and *What is Philosophy*?, the works to which I pay closest attention. The fact that Deleuze seldom wrote directly on the ancient Greeks, and never in book-length form, suggests, I believe, an important difference between how he approached the Greeks and how he approached,

for example, Nietzsche, Spinoza and Bergson—the triumvirate with whom Deleuze is most commonly linked. Those philosophers on whom Deleuze wrote his historical studies are the subjects of *portraits*. The ancient Greeks are what Deleuze calls *mediators*.

Deleuze compared writing in the history of philosophy to doing intellectual portraiture a number of times:

The history of philosophy isn't a particularly reflective discipline. It's rather like portraiture in painting. Producing mental, conceptual portraits. As in painting, you have to create a likeness, but in a different material: the likeness is something you have to produce, rather than a way of reproducing anything (which comes down to just repeating what a philosopher said). (N 135-36)

You have to do this work on the history of philosophy, it's a work of humility. You have to paint portraits for a long time. (ABC, quoted in Dosse 2010, 108)

Such a method certainly involves its own kind of creativity (Antonioli 1999, Boundas 1996). Deleuze's refrain is that philosophers—even those doing the history of philosophy—are "creative, not reflective" (N 122). Doing portraiture is never a simple matter of reproduction or representation. Just as portraiture is not always the meticulous photorealistic depiction of a subject, but amplifies or takes artistic license with certain features, so also working in the history of philosophy is not just ventriloquizing what another has said, but involves a lot of original thinking (a fact of which scholars working on the medieval commentators on Aristotle are well aware: Tuominen 2009, Sorabji 1990). As Deleuze puts it, intellectual portraiture slides imperceptibly into intellectual "collage" (DR xxi). Portraits are always already collages. By "collage" Deleuze means the assembling of concepts and problems in a novel configuration. A commentary, a work in the history of philosophy, arranges concepts and problems in a manner inevitably idiosyncratic to the commentator. Such a configuration does not presuppose that certain philosophical problems or paradigms are surpassed or irrelevant (this would be too progressivist an historicism for Deleuze), but requires, importantly, the coexistence of philosophical concepts and problems derived from different texts, authors and time-periods.¹ Such reconfigurations can change how the history of philosophy appears to us. For example, in the preface to Difference and Repetition Deleuze says that philosophical commentaries ought to produce the "maximal modification" possible of the text or philosopher on which they comment, so that in them one can encounter a "philosophically bearded Hegel" or a "philosophically clean-shaven Marx" (DR xxi). In this sense it can become difficult simply to recognize the philosophical figures and concepts that one thought one knew so

¹ "Philosophy is becoming, not history; it is the coexistence of planes, not the succession of systems" (WP 59).

well. Portraiture becomes collage as the author of the commentary reworks and reorganizes the material from philosophy's rich history to do something novel (Bénatouïl 2002).

The expectation, however, that intellectual portraiture ought to be, or even could be, the totally uncreative reproduction of what an old revered philosopher has already said is very oppressive for philosophers. Deleuze is trying to liberate the history of philosophy from itself, to show its potentials that have been muffled by an institutionalized orthodoxy. To the oppressive history of philosophy, Deleuze says he developed a response:

I belong to a generation, one of the last generations, that was more or less bludgeoned to death with the history of philosophy. The history of philosophy plays a patently repressive role in philosophy I myself "did" history of philosophy for a long time, read books on this or that author. But I compensated in various ways I suppose the main way I coped with it at the time was to see the history of philosophy as a sort of buggery or (it comes to the same thing) immaculate conception. I saw myself as taking an author from behind and giving him a child that would be his own offspring, yet monstrous. It was really important for it to be his own child, because the author had to actually say all I had him saying. But the child was bound to be monstrous too, because it resulted from all sorts of shifting, slipping, dislocations, and hidden emissions that I really enjoyed. (N 5-6)

Amid the playful style with which Deleuze responds to a "harsh critic," this passage basically says that writing portrait-commentaries in the history of philosophy is never just reproducing what the subject of the portrait thought.² Such portraiture inevitably verges into collage, the rearrangement of problems and concepts that coexist no matter what their vintage. But here Deleuze lays the emphasis on the agency or creativity of the philosopher, rather than the inevitability of the slippage from reproduction to production. Although Deleuze calls his strategy a coping mechanism, it is not merely reactionary but affirmative and productive.

Elsewhere Deleuze gloomily muses about the history of philosophy:

The history of philosophy has always been the agent of power in philosophy, and even in thought. It has played the repressor's role; how can you think without having read Plato, Descartes, Kant and Heidegger, and so-and-so's book about them? A formidable school of intimidation which manufactures specialists in thought—but which also makes those who stay outside conform all the more to this specialism which they despise. An image of thought called philosophy has been formed historically and it effectively stops people from thinking. (D 13)

² The harsh critic is Deleuze's former student Michel Cressole who scathingly criticized *Anti-Oedipus* when it first appeared. Cressole accused Deleuze of being politically compromised, "trapped" by his personal identifications (as a heterosexual male, a bourgeois intellectual). More broadly, Cressole thought that Deleuze capitalized on the experiments of others (madmen, drug users, alcoholics and homosexuals) to develop accounts of heterogeneity and difference without risk to himself (Cressole 1973, 112; cf. Dosse 2010, 215-17).

In contrast with Deleuze's affirmation that a humble work of philosophical portraiture is necessary and appropriate for a philosopher, this passage emphasizes the oppressive role of institutional philosophy. Importantly, it links the history of philosophy to the "image of thought," an important methodological notion in Deleuze (cf. NP 96-103, DR 127-67; N 147-49). What is the image of thought? It is necessary to understand Deleuze's challenge to this notion precisely because Deleuze claims that studies in the history of philosophy tend to reinforce it. The image of thought means a set of assumptions at work throughout the history of Western philosophy about what thought is supposed to be, what counts as thought, or what thinking properly is. Deleuze calls this image of thought "dogmatic" and "moral" (DR 131). It consists in the assumption that everybody already knows what it means to think, and that thinking means divesting oneself of presuppositions (what Deleuze calls "good will on the part of the thinker") and pursuing the truth (the "upright nature on the part of thought" [DR 131]). The notion that there is some affinity of thought with the true, and that error arises from factors external to thought proper, has characterized philosophy at least since Plato (DR 134). The appeal of the inherited image of thought to a supposedly intuitive or commonsensical attitude about the nature of thought has a lamentable, unnecessary consequence; it excludes thought's alternative possibilities. Thinking that struggles against the image is denounced as non-philosophical (DR 132).

In *Difference and Repetition* Deleuze articulates eight postulates of the traditional image of thought, which "crush[es] thought under an image which is that of the Same and the Similar in representation, [and] profoundly betrays what it means to think" (DR 167). Daniel W. Smith helpfully boils it down to three interrelated beliefs:

- 1. Thought as thought formally contains the truth (innateness of ideas, *a priori* nature of concepts); thinking is the voluntary and natural exercise of a faculty, and the thinker possesses a natural love for the truth, a *philia* (hence the image of the thinker as a *philo-sophos*, a friend or lover of wisdom).
- 2. We fall into error, we are diverted from the truth, by external forces that are foreign to thought and distract the mind from its vocation (the body, the passions).
- 3. Therefore, all we need in order to think truthfully is a "method" that will ward off error and bring us back to the truthful nature of thought. (Smith 1996, 31; an adaptation of NP 96-7)

Smith contrasts these postulates with an alternative Deleuzian image of thought, a way of thinking that is not hampered by this dogmatic, moral orthodoxy, a thought "without image":

1. Thinking is never the product of a voluntary disposition, but rather the result of forces that act upon thought independently from the outside; we search for truth, we begin to

think, only when compelled to do so, when we undergo a violence that impels us to such a search, that wrests us from our natural stupor. ...

- 2. The negative of thought is not error—nor even superstition (Lucretius, Spinoza), illusion (Kant), or alienation (Hegel, Marx)—but more profound enemies that prevent the genesis of thought: convention, opinion, clichés, stupidity [*bétise*].
- 3. Finally, what leads us to truth is not "method" but "constraint" and "chance." No method can determine in advance what compels us to think; it is rather the fortuitousness of the encounter that guarantees the necessity of what it forces us to think. (Smith 1996, 31)

The difference between the dogmatic image of thought and its alternative can be simply put in terms of the difference between thinking that begins with *recognition*, and thinking that begins with an *encounter* with the strange, unprecedented and unrecognized (DR 138-42; NP 101, 197 n. 33). Appropriately, in the first of many conceptual debts to ancient Greek philosophy, Deleuze owes this distinction to Plato. In the *Republic*, Plato compares two kinds of sensation: sensations that provoke thought and sensations that don't: "Some reports of our perceptions do not provoke thought to reconsideration because the judgment of them by sensation seems adequate, while others always invite the intellect to reflection because the sensation yields nothing that can be trusted" (523a-b, cf. 524d). Plato calls the latter "provocatives" (parakalounta) (523c). For example, Plato thinks it's possible to recognize the difference between the index and the ring finger without being challenged to conceive of what a finger really is. Non-provocative sensations take the really difficult questions for granted. This is not the case, however, with vague predicates like "greatness" and "smallness" or "lightness" and "hardness." Plato thinks whatever such predicates refer to is confused and blended together, rather than distinct, and thus the use of such predicates forces us to think about what largeness and softness really are. From this he draws the conclusion that vague predicates not only challenge thought to consider what it normally takes for granted, but also give the first intimation of the difference between the sensible and the intelligible realms and so puts thought on its way toward the intelligible Ideas (524c). For Plato the easily recognizable is simply the perceptible, and the nascent intelligible realm is what requires us to think.

For Deleuze, as for Plato, thinking really begins with this encounter with the provocative, strange, vague, and unrecognized. Deleuze's idea is that thinking that conforms with the image of thought never finds anything other than what is recognizable. But Deleuze goes farther than Plato in the sense that breaking with this paradigm of recognition requires more than simply the good will of the thinker. Whatever thought *voluntarily* undertakes to think about, according to Deleuze,

turns out to be something that doesn't challenge it to think at all. Deleuze's notion of the dogmatic image of thought boils down to the idea that the pre-philosophical conception of what thinking means (divesting oneself of presuppositions in order to better pursue the truth) is exhausted in convention, opinion, and the banal clichés of what he calls ordinary "stupidity" (NP 98; DR 150-53). The voluntarist image of thought based on recognition does not really exercise thought—as if you could anticipate or unproblematically recognize everything there is to think before the fact of thinking it—whereas the "involuntarist" image of thought (Zourabichvili 2003, Aarons 2012), which is based on the fortuitousness of an encounter with the unforeseen, *does* exercise thought, by galvanizing it, rousing it from its dogmatic slumber. Deleuze says: "there is only involuntary thought" (DR 139).

For this reason Deleuze provocatively remarks that producing a work of philosophy should be like writing science fiction (DR xx), since he claims it is impossible to write *except* about "those things one doesn't know, or knows badly" (DR xxi). Philosophical writing, if it contains any real thinking, must be situated on the threshold between the darkness of ignorance and the illumination of knowledge. What thought "encounters," in Deleuze's terminology, are *problems*. I will talk about problems in detail in chapter 3, but for now suffice it to say that Deleuze thinks that problems have been historically misunderstood as products of preexisting conceptual frameworks, of which they are in fact productive. Problems have been treated, in a word, as a function of possible solutions, as if they were merely confusions internal to the horizon of naturally truthful thinking, wrinkles on the backdrop of truth. For Deleuze, however, problems are not defined in terms of the already existent possibility of their solution. The problem engenders its domain of "solvability," not the other way around (DR 162). In other words, the problems that cause thought are only really problems appear in regions where there is no recourse, no knowledge to appeal to. Being forced to think by problems is not a misfortune but a positive event.

MEDIATORS

Against the idea that the history of philosophy is simply ancillary to the dogmatic image of thought, I think the history of philosophy can be understood in an alternative way as a series of encounters with problems. Following the suggestion in Antonioli that "the history of philosophy is not a text written in advance" (1999, 15-16), I construe the historiography of philosophy itself as a field of problems in Deleuze's technical sense. Far from making it impossible to think in a novel

way, historical problems actually *force* us to do so. Certain problems are specific to historians of philosophy because of their form. Ontology is a problem as much for the Stoics as for Deleuze and for any other philosopher. But "Stoic ontology" is a problem for historians of philosophy, which forces them to respond, to solve it. The solution to the problem of "what the Stoics thought" is not something that neutrally antedates reconstructions or commentaries.

Here is another way of making the same point. Deleuze presents a singular image that illuminates his approach to the history of philosophy. In a conversation published as "Mediators" in 1985, Deleuze compares different kinds of sport:

The kind of movements you find in sports and habits are changing. We got by for a long time with an energetic conception of motion, where there's a point of contact, or we are the source of movement. Running, putting the shot, and so on: effort, resistance, with a starting point, a lever. But nowadays we see movement defined less and less in relation to a point of leverage. All the new sports—surfing, windsurfing, hang-gliding—take the form of entering into an existing wave. There's no longer an origin as starting point, but a sort of putting-into-orbit. The key thing is how to get taken up in the motion of a big wave, a column of rising air, to "get into something" instead of being the origin of an effort. (N 121)

When Deleuze continues, "And yet in philosophy..." the contrast is clear. We should think of philosophy along the same lines, but we don't. Deleuze obliquely suggests that philosophy itself is a kind of "existing wave" into which a philosopher enters, even though philosophers habitually accept an "energetic conception" of it, as if doing philosophy meant finding a "starting point"either by discovering a "point of contact" with the tradition, or establishing oneself qua philosopher as a "source of movement." Deleuze treats the question of the image of thought as the question of how to *begin* in philosophy (DR 129). As we have seen, Deleuze thinks you ought not to begin by a long and uncreative apprenticeship reproducing the orthodox history of philosophy, having been, so to speak, beaten into submission by it. But Deleuze also thinks you should not begin in a putatively presuppositionless state of simple givenness, for example with a doubting Cartesian cogito. This pretense of presuppositionlessness, Deleuze remarks, "does not escape presuppositions of another kind," and to some extent amounts to the "philosopher tak[ing] the side of the idiot as though of a man without presuppositions" (DR 132-33). Of course, Deleuze sometimes speaks as if he thinks we should begin to think from the givenness of our own subjective positions, rather than on the basis of the great touchstones of the history of philosophy ("how can you think" he sarcastically asks "without reading Plato, Descartes, Kant" as if it were obvious that you can think

all on your subjective own).³ But I don't think this is what Deleuze means. The notion that it is possible to think for oneself, independently of the history of philosophy, Deleuze says, "has no fewer presuppositions" than the view that it is impossible to think without first reading Plato and Kant. Deleuze says, it just has presuppositions in another way, an "implicit or subjective form, 'private' and not 'public'." Presuppositionlessness primarily presupposes "a natural capacity for thought, which allows thought to claim to begin, and to begin without presuppositions" (DR 133). Both the dogmatically historical approach and the radically subjective approach to beginning in philosophy return us to the traditional image of thought. The image of thought has two aspects: historicist and subjectivist.

The upshot is that although Deleuze does not want to be "bludgeoned to death" by the history of philosophy, he does not think it's desirable or probably even possible to ignore it. Deleuze is deeply ambivalent about the history of philosophy: it represents a power of repression that prevents people from thinking, but it's also a reservoir of problems of untapped potential. How should one begin in philosophy? Deleuze's answer: don't begin at the beginning since this reintroduces the image of thought (in either its historicist or subjectivist formulation). Instead, begin in the middle (D 39). In other words, it's best to begin with *mediation*.⁴ Deleuze recommends giving up the philosophical mania for beginnings or foundations (Antonioli 1999, 13-14; Zourabichvili 2003, 49-52), and focusing instead on the relations among mediators in medias res. In the case of the history of philosophy, these mediators include a large retinue of concepts, proper names, and problems. Deleuze thinks philosophers need to cultivate the aptitude of entering into this wave or flow called the history of philosophy and learn how to be creative while surfing it. To philosophers Deleuze says: learn how to surf rather than imagining you are like a shot-putter. Give up the idea that it's possible to find a "point of leverage" in the so-called great works of philosophy or one's own subjective experience. The self-evidence of a straightforwardly substantial ego is the product of, and not the point of access to, the flow of concepts and problems. The meaning of the "great books" of the tradition is not something neutrally and unproblematically given in advance,

³ One thinks of the remarks attributed to John Searle: "I am an analytic philosopher. I think for myself," and to W. V. O. Quine: "There are two sorts of people interested in philosophy, those interested in philosophy and those interested in the history of philosophy" (both quoted in Reck 2013, 2).

⁴ Compare: "A rhizome has no beginning or end; it is always in the middle, between things, interbeing, *intermezzo*" (TP 23); "it's not beginnings and ends that count, but middles. Things and thoughts advance or grow out from the middle, and that's where you have to get to work, that's where everything unfolds" (N 161); "The important thing is to understand life, each living individuality, not as a form, or a development of form, but as a complex relation between differential velocities … One never commences; one never has a tabula rasa; one slips in, enters in the middle; one takes up or lays down rhythms" (SPP 123).

but something that must be produced in every new commentary. Whether they like it or not, philosophers are always surfing on a standing wave of mediation, the history of philosophy itself insofar as it retains a reservoir of coexisting concepts and problems.⁵

So long as one is an empiricist (as Deleuze claims to be: D vii) it is possible to say that one begins with experience, or with what is given to experience. In Deleuze's view experience itself presents us with a standing wave. Even *thought* is a standing wave, what Deleuze calls in his seminars a "universal thought flow":

It is flows that are given, and creation consists in cutting, organizing, and connecting flows ... Imagine the universal thought flow as a kind of internal monologue, the internal monologue of everyone who thinks ... The concept is a system of singularities extracted from a thought flow. (15 April 1980, quoted in Smith 2012, 140-41)

The history of philosophy is one part of this wave-form flux into which philosophers skillfully enter and from which they extract philosophical concepts. Daniel W. Smith suggests how to reconcile this homeorhetic image of thought with Deleuze's criticisms of the dogmatic image: the "usual' status of the universal thought flow" is what Deleuze calls "stupidity" (Smith 2012, 141), the comforting banality of clichés and reassuring pieties. Such stupidity is not the origin of thinking, or its natural element, but it is something that develops, something into which thought transforms. Deleuze's interest in "noology," the study of the images of thought (TP 376), motivates his analyses of the mechanisms by which thought becomes normalized and banalized, such as the analyses of "stratification" (TP 40-45), and the "State" form of thought (TP 474-500).

I think the Stoics, Plato, Aristotle and Epicurus are "mediators" in Deleuze's work. Such mediation, for Deleuze, is a necessary precondition of philosophical creativity: "Mediators are fundamental. Creation's all about mediators. Without them nothing happens. ... I need my mediators to express myself, and they'd never express themselves without me: you're always working in a group, even when you seem to be on your own" (N 125).⁶ In other words, this standing wave of mediators is the precondition for the creation of concepts. By entering into the wave of mediators and, so to speak, surfing it—that is, organizing, connecting, and extracting from it—one creates. This dissertation shows not that Deleuze's portraits of the Stoics, Aristotle and

⁵ On the surfing metaphor, I suspect Deleuze borrows the image from Marshall McLuhan, whom he mentions by name in the same interview on the topic of technological mediation and creation (N 131). McLuhan's *Gutenberg Galaxy* (1966) depicts philosophers as surfers on waves of technological mediation (for example, Dewey [144-45] and Heidegger [248]).

⁶ Compare: "I am nearly incapable of speaking in my own name" (TRM 65); and "The two of us [Deleuze and Guattari] wrote *Anti-Oedipus* together. Since each of us was several, there was already quite a crowd." (TP 3)

Epicurus are photorealistic, but that Deleuze is a master surfer on this crest of the wave of the history of philosophy.

Conceiving of Deleuze's relation to the history of philosophy in terms of mediators allows me to characterize his approach to the ancient Greeks without suggesting that Deleuze is making "portraits" of them, in the way that he does Spinoza, Nietzsche, Bergson, and so on, which does not seem appropriate. Nevertheless, all the figures from the history of philosophy are mediators for Deleuze, even though not all the mediators have their portraits painted. Mediator is a very broad category. It includes scientific functions and works of art, for example. Deleuze explicitly considers even Guattari, his collaborator and friend, a mediator (N 125).

Finally, I will anticipate my conclusions with a few words about how Deleuze's methodology of situating himself among mediators relates to the philosophy of nature he develops and defends. Deleuze remarks that his arrangement of mediators enables him to glimpse the power of the "and," an image of nature that I will call conjunctive or "paratactic," which focuses on the lines or relations between supposedly self-identical things. Deleuze explains the nature of his interest in empiricism:

I began with the history of philosophy—when it was still being prescribed. For my part, I could not see any way of extracting myself. ... But I liked writers who seemed to be part of the history of philosophy, but who escaped from it in one respect or altogether: Lucretius, Spinoza, Hume, Nietzsche, Bergson. Of course, every history of philosophy has its chapter on empiricism: Locke and Berkeley have their place there, but in Hume there is something very strange which completely displaces empiricism, giving it a new power, a theory and practice of relations, of the AND (D 14-15).

Only the "and," Deleuze says, has the power to displace the "is" (TP 23; LS 267; N 44; D 9-10, 34-5, 57-8)—only the "*et*" can replace the "*est*." But this remark remains opaque without understanding how the various conceptions of *being* and of *conjunction* at work in ancient Greek philosophy mediate it. These mediating conjunctive and ontological concepts are what I turn to now. Ph. D. Thesis – M. Bennett; McMaster University – Philosophy

CHAPTER 1

Stoicism: Incorporeal Events

Oh, those Greeks! They knew about *living*: for this, it is necessary to stop courageously at the surface. ... Those Greeks were superficial—*out of profundity*! – Nietzsche, *The Gay Science*, §4.

T IS COMMON TODAY to call Deleuze's philosophy a "philosophy of events" (Bowden 2011, Zourabichvili 1994, Sellars 2006), but it's sometimes unclear what this description means. In The Logic of Sense (1969), Deleuze's premiere text on the topic, events are associated with a metaphysical "surface" on which they are said to occur. Deleuze credits the ancient Stoics with speaking about events in the way he wants to adopt and adapt. The point of this chapter is to understand what Deleuze means by the term event, what he means by a metaphysical surface, and to evaluate his appropriation of Stoic metaphysics in this light. I proceed by first presenting a sketch of Stoic metaphysics, physics and philosophy of language. Then I detail Deleuze's interpretation of these ideas, paying attention to the parallel he underscores between Stoicism and structuralism, and articulating what is at stake in his use of the Stoics. I suggest that Deleuze's reading of Stoic semantics "maximally modifies" Stoicism, construing at as less dependent upon reference to extra-linguistic beings than it is, but that his reading of Stoic fatalism and astrology is, in contrast, surprisingly compatible with a lot of recent scholarship. Finally, I focus on specific claims Deleuze makes about Cicero's *De Fato*, where he sees the Stoic conception of fate as a theory of the relations among events independent of relations among bodies or concepts. I conclude by considering on what basis Deleuze criticizes Stoicism, a question that has not yet been answered in a satisfactory way.

The chapter of *The Logic of Sense* entitled "Of Paradoxes of Surface Effects" includes a discussion of Stoic ontology influenced by Émile Bréhier, who colorfully describes the Stoic paraentities known as "incorporeals" (*asômata*) as "frolick[ing] on the surface of being" (Bréhier 1928, 13; LS 5). It also contains the first iteration of Deleuze's refrain that the Stoics "reverse Platonism" (LS 7). These ideas are linked in Deleuze's argument about Stoicism. What Deleuze thinks of as an inverted Platonism can be summed up by saying that nothing is "more intimate or more essential to bodies than events such as growing, becoming smaller or being cut" (LS 5). This primacy of events merits description as a reversal of Platonism because, as Deleuze describes, it lays the stress on "becomings," without seeking out more fundamental "beings" of which they would be the becomings. The greatness of Stoicism, for Deleuze, lies in the way it not only thematizes the notion of the event, but also how in so doing it prioritizes events in relation to bodies. Deleuze also describes the discovery of the importance of incorporeal events as the discovery of *sense* as a dimension of the proposition: "sense ... is an incorporeal, complex, and irreducible entity, at the surface of things, a pure event which inheres or subsists in the proposition" (LS 19). On the surface, Deleuze's interpretation is provocative. How can events be the core of Stoicism? The Stoics were hardline "corporealists" who maintained that only bodies (*sômata*) exist and that incorporeals, such as events, do not exist in the full sense, but rather "subsist." Such "subsistence," moreover, seems like a form or pseudo-being, or non-being, *dependent* on existence (Brunschwig 1994; Gourinat 2009).

What interests Deleuze in Stoicism is the way that Stoic metaphysical revisionsparticularly the advent of "incorporeals" (asômata)—transform the inherited Platonic duality of bodies and Forms: "The Stoics' strength lay in making a line of separation pass-no longer between the sensible and the intelligible, or between the soul and the body, but where no one had seen it before—between physical depth and metaphysical surface" (D 63-4). Deleuze thinks that this important duality between sensible and intelligible was badly understood by Plato and all-tooquickly naturalized in the philosophically decisive dualities of things and propositions, beings and language, and cause and effect (LS 23). Deleuze even describes the invention of incorporeals as a "new way of getting rid of the IS: the attribute is no longer a quality related to the subject by the indicative 'is', it is any verb whatever in the infinitive which emerges from a state of things and skims over it" (D 64; cf. Bréhier 1928, 12, 19-20). My overall argument about Deleuze will eventually be that the Stoics are a major source for Deleuze's own philosophical project of articulating a philosophy of Nature that displaces "the IS," and gets rid of the system of "attribution," which means in nuce that a duality of events and their subjects is naturalized and taken for granted. At first, Deleuze makes the argument in relation to Plato. Platonic theoretical resources will only take you so far, up to a point where these dualities look inevitable and must be accepted as physical or metaphysical givens. Deleuze, on the other hand, wants to tell a *genetic*

story about these dualities themselves, about how they came to be. This is what he thinks the Stoics' "reversed Platonism" enables him to do. As Deleuze puts it: "Everything happens at the boundary between things and propositions. Chrysippus taught: 'If you say something, it passes through your lips; so, if you say "chariot," a chariot passes through your lips'" (LS 8, referring to D.L. 7. 187). This "boundary" or "surface" lies between bodies and propositions, which Deleuze describes as two different series. It is methodological that the distinctness of these series must be genetically explained, in other words related to and derived from the prior "coexistence of two sides without thickness" (LS 22).

Later on in *The Logic of Sense*, Deleuze adapts the image of the surface. He distinguishes three "Images of Philosophers," three orientations that Greek philosophical thought can take (LS 127). While the Platonic-Aristotelian tradition turned to the "heights," the perfect unchanging heaven of the Forms or essences, in order to isolate the dominant metaphysical explanatory factor, and the Presocratics (and later schools, such as the Epicureans) looked to the "depths" for explanations, to material natures or microprocesses inside bodies themselves, Deleuze claims that with "the Megarians, Cynics, and Stoics, we have the beginning of a new philosopher" (LS129). Thought, among these new philosophers, is oriented not toward the heights nor toward the depths, but toward the surface (LS 130).

The surface-oriented philosophical schools that Deleuze refers to are (with the exception of the Cynics) mostly admired today for their advancements in logic.¹ It is no accident that Deleuze favors ancient logicians over metaphysicians. Scholarship today is split between treating Deleuze as a metaphysician (a position supported in large part by Deleuze's own self-identification as a "pure metaphysician" [Villani 2007]), and treating Deleuze as an unconventional kind of logician (Aarons 2012).² Deleuze's emphasis on "surface" as a genetic explanation of both being and thought suggests to me that this is a false opposition. Readings of Deleuze as logician tend to be interested in Deleuze's conception of modality, and to renew the arch-Diodorean question of

¹ That is, so long as we assume that Deleuze is thinking of the Megarian school as including Diodorus Cronus, author of the "Master Argument" about modality. Sedley (1977) explains that Diodorus was not one of the *megarikoi*, the school of Euclides of Megara, but one of the *dialektikoi*, a distinct school. It has been common, however, to misidentify Diodorus as a "Megarian" because of a passage in Diogenes Laertius where "*dialektikoi*" and "*Megarikoi*" appear to be names of one and the same school (D. L. 2. 106). I suspect Deleuze follows Diogenes Laertius and this traditional error.

² Deleuze defines the notion of a "thought without image" as a kind of logic in which rationality is genetically explained and not itself used as an explanatory resource (CC 82-83; FB 68). "[D]efining his own work as 'logic,' Deleuze criticizes the discipline institutionalized under this name for abusively reducing the field of thought by restricting it to the puerile exercise of recognition, and for justifying a self-contented and obtuse good sense" (Zourabichvili 2003, 170).

necessity by making it independent of the dogmatic "image of thought" (whose necessity is specious): for Deleuze, "conceptual necessity is to be sought in the involuntary character of the encounter" (Zourabichvili 2003, 170).

The inspiration for this new—seemingly contradictory—conception of necessity, for Deleuze, lies with the surface-oriented philosophers of the Hellenistic world. Deleuze not only describes his work as logic (CC 82-3) but as "dialectical" (DR 157, 179). The inspiration for this identification is clearly Stoic. For the Stoics, "dialectic" is a proper subdiscipline of logic, and in fact one that encompasses both sides of the apparent duality of things and propositions. The Stoics considered the subject-matter of dialectic to include both utterances (*phônai*), which are a kind of body (excited atmospheric, audible bodies), and things signified (*sêmainomena*), which are not bodies (D.L. 7.42-4). In fact, as Michael Frede has argued, the point of Stoic dialectic was to develop rigorous parallels between these two series, bodies and incorporeal signifieds (Frede 1978, 323-24). Drawing on Diogenes Laertius, Deleuze claims that for the Stoics "dialectics is precisely this science of incorporeal events as they are expressed in propositions," (LS 8). Rather than treating Deleuze as an "anti-dialectical" philosopher (where this phrase means "anti-Hegelian"), it is important to see that he is in fact a dialectician—so long as the label is understood in the light of the ancient schools Deleuze invokes.

ONTO-LOGIC, NON-BEING, AND THE "TRUTH" OF PROBLEMS

The Stoics champion an "ontological stemma" in which all the different classifications of entities are sorted into a branching hierarchy (drawn up in HP I. 163). The most provocative feature of the Stoic system, and of greatest interest to Deleuze, is the way the highest ontological genus, "something" (*to ti*), branches into both existent *and* non-existent species. This supreme genus theory can be understood as a consequence of the Stoics' thoroughgoing corporealism—the thesis that whatever *exists* (expressed by the Greek participle "*on*") is a material body.³ According to Brunschwig's influential interpretation, this Stoic thesis is comparable to the position of the Giants in the allegorical gigantomachy fought over the nature of being in Plato's *Sophist*. The Giants contend that only what can be grasped by a body and is the same sort of thing as a body properly speaking *is* (*Soph.* 246a). On the basis of terminological and formal parallels between Stoic arguments about the corporeality of the soul (e.g., in Stobaeus, *Eclogae*, 1. 138,14-139,4 = HP

³ Plutarch, *Comm. Not.* 1073e. See also Alexander of Aphrodisias, *In Top.* 301. 19-27 (= HP § 27B); S.E. *PH* 2.86, 223.

§55A) and Plato's depiction of these giants, Brunschwig argues that Zeno of Citium, founder of the Stoic school, probably developed his ontological attitudes and criticisms of the Platonic theory of the Forms in an explicit reaction to this passage in the *Sophist* (1994, 123).

It is a traditional view in Stoic scholarship that Zeno originally thought his corporealist thesis was compatible with saying, like Plato, that "to on" was the supreme genus. It was only under pressure from considerations about void, time, space, and meaningful language that the Stoic ontological picture was emended in order to accommodate incorporeal somethings (Caston 1999, 151, n.10). In other words, in order to accept the equation of bodies (*sômata*) with existents (*onta*), without totally eliminating time, meaning, and the other so-called incorporeals from philosophical consideration, Zeno eventually found he also had to "reject the Platonic identification of *being* with being something" (Caston 1999, 151).⁴ Although Plato thought that the intelligibility, and even being, of bodies depends on the existence of causally effective and intellectually preeminent incorporeals (Forms or Ideas), he was willing to say that both bodies and incorporeal things, such as Forms, souls and virtues, exist (they are all onta). The Stoics, on the contrary, held that not everything that is *something* necessarily *exists*. In other words, Zeno's reversed Platonism entails the equivocity of the predicate "being." Plutarch testifies, almost in the same breath, that for the Stoics "only bodies are" (onta gar mona ta sômata) and that "some things are that are not" (einai men ouk'onta d'einai; Comm. Not. 1073d-e). Victor Caston suggests that for the Stoics to talk about something as "a being" (on) is self-consciously to "mark" its ontological status. Although Plutarch himself finds the claim absurd, he thus reports that the Stoics use marked and unmarked senses of the verb "to be." Caston renders the marked sense "to exist." and reserved the unmarked "to be" for other uses, such as the subsistence of incorporeals, a usage which I follow (Caston 1999, 151-2).

It is easiest to see why a feature of the Stoic cosmos would be necessarily incorporeal in the case of *void* (*to kenon*). In Stoic cosmology, the void lies outside the cosmos, which is a corporeal continuum or plenum (D.L. 7. 140). If void is, by definition, not a body, and external to the totality of continuous bodies, and only bodies exist, then void must be understood as a non-existent incorporeal. And yet (strange to say about the void) the Stoics think it is *not nothing*. The void is still something (*ti*), in fact one of the four canonical incorporeals that populate the Stoic world: void (*kenon*), place (*topos*), time (*khronos*), and "sayable" (*lekton*) (S.E. *M* 10. 218). Extracosmic void appears to be the Stoic answer to objections to a finite cosmos of a kind that

⁴ See Soph. 237c-e. and Parm. 164a-b, 166a for versions of this identification.

Aristotelians also faced. The Pythagorean philosopher Archytas infamously wondered what would happen if a person travelled to the edge of the finite cosmos and struck out with a staff.⁵ The thought experiment purports to demonstrate that a finite cosmos is paradoxical, since if it is possible to extend one's staff beyond the cosmos then there must be something beyond it (Archytas supposes *place*), and if it is not possible to extend one's staff then something must be resisting it (probably *body*). In either case, the finitude of the cosmos must be a mistake. Simplicius records (*In Cael.* 284,28-285,1) that the Stoics were also vexed by Archytas-type objections, which they answered by explaining that the void outside the cosmos is non-existent. So these objections return us to the same point about being and non-being. The Stoics evade Archytas's paradox by accepting something that seemed absurd to Eudemus (whose report Simplicius recounts), namely that at least one of "the things that are is in non-being."

From void, the step to another one of the Stoic incorporeals is easy to make. While the Stoics understood void as "simply capable of receiving body" (Cleomedes, *De Motu.* 8, 10-14 = HP §49C), or "what can be occupied by bodies but is not [actually] occupied" (D.L. 7. 140), they understood place (*topos*) as what actually is occupied by body (either totally or partially), without itself being body (S.E. M 10.3-4). Indeed, Diogenes Laertius (7. 140) does not even bother to mention place in his list of incorporeals, leaving it implicit in the definition of void. With these two Stoic incorporeals it's very clear what sort of thing the Stoics strive to pick out with the theory of non-existent incorporeals: items inconsistent with bodies, which cannot thus "exist" (so long as only bodies exist), but which the existence of bodies seems to presuppose. As Sean Bowden notes, however, it is the other two incorporeals—time and especially sayables—that particularly interest Deleuze (2011, 19-20). I will put off discussing these incorporeals in more detail until after we have more Stoic theory in play.

Recent scholarship is beginning to reveal to what extent the "canonical" list of incorporeals may be incomplete. For example, the Stoics may have considered limits (*perata*)—that is, the surfaces of bodies, the edges of shapes, and so on—to be incorporeals, of the same stature as void, time, and sayables.⁷ Anna Ju suggests that a second authoritative list of Stoic incorporeals appears

⁵ Simplicius *In Phys.* 467. 26-35. Compare Aristotle, *Phys.* 203b 22-26, which may refer to Archytas.

⁶ Simplicius In Phys. 468. 1-2: "οὐδὲν γὰρ τῶν ὄντων ἐν τῷ μὴ ὄντι." See Huffman 2005, 540-41.
⁷ See White 1992, 284-326, and 2003, 150-51; Caston 1999, 209; Ju 2009. Only Ju, as far as I can tell, hazards the bold view that limits have the same status in the ontological stemma as void, time, and sayables. Long and Sedley (HP I. 301) as well as Brunschwig (1994, 97) accept Proclus's report (*In Eucl.* 89. 16) that the Stoics thought of limits as mental constructs or fictions (like Centaurs), which fall "altogether outside the corporeal-incorporeal dichotomy" (HP I. 301). In other words, limits are *not even something*. For a masterful rejection of this proposed expansion of the Stoic ontological stemma, see Caston 1999, 158-65.

in Cleomedes's *De Motu* (I. 1. 139-44): void, time, *surface (epiphaneia)*, and sayables (Ju 2009, 380-81). Cleomedes reasons that "Everything that is limited has its limit in something different in kind ... [and thus] our bodies also similarly border onto something different in kind, their surface, which is incorporeal."⁸ The relationship between the corporeal cosmos and the extra-cosmic void would be one particular application of this reasoning. Plutarch, though hostile, also accepts that the Stoics thought bodies touch one another by means of an incorporeal limit (*Comm. Not.* 1080e). Diogenes Laertius recounts how the Stoics thought limits (*perata*) and surfaces (*epiphaneiai*) were related, the latter being a proper subset of the former: the Stoics define bodies in terms of three-dimensional limit of surface, and a point (*stigmê*) as the zero-dimensional limit of line (D.L. 7.135). The idea that limit, of which surface is a subclass, is a kind of fifth incorporeal is an apt way of understanding why Deleuze associates Stoicism with a theory of surfaces. Deleuze himself even explicitly mentions the notion of an "incorporeal limit" in Stoicism (LS 7).

Generally speaking, in the Platonic passages to which commentators have argued Stoic ontological positions more or less direct respond, it is the value of *non-being* which is at issue.⁹ These are passages where Plato attempts to talk about non-being non-sophistically. What does this mean for Plato? In the Sophist, defining the nature of the sophist, as a producer of false appearances by means of statements, requires saying that falsehoods (*pseudê*) in some sense *are*, or that non-being in some sense is ("to mê on einai") (237a). This perverse use of "to be" is strictly outlawed by Parmenides, whom the Eleatic stranger quotes: "This should not ever prevail in your thought: that the things that are not, are" (Soph. 237a; DK 28B7). Without yet addressing the vexed question of how Plato transforms Parmenides by accepting a qualified version of "being" in order to define the specious essence of sophistry (which I attempt in Chapter 2), I note here that in connecting falsity with the "existence" of non-being Plato makes his conception of truth depend on ontological considerations. For example, the Stranger convinces Theaetetus that when a sophist persuades someone to opine *falsely*, this means opining that things which do not at all exist do somehow exist (240d-e). Deleuze thinks that, because the Stoics countenance non-existents in a way alien to Parmenides and Plato, their inversion of Plato and the different role that they assign incorporeals require a new way of talking about truth. He thinks of this as a "dialectical" or

⁸ "Πᾶν τὸ πεπερασμένον εἰς ἑτερογενὲς περατοῦται ... Καὶ ὁμοίως τὰ ἡμέτερα σώματα εἰς ἑτερογενὲς περατοῦται, τὴν ἐπιφάνειαν, οὖσαν ἀσώματον" (De Motu. Ι. 1. 113-20).

⁹ Soph. 246a-48d, and 237c-e (according to Brunschwig 1994, 118) and *Parm*. 132c (according to Caston 1999, 179-80).

problematic approach to truth, rather than an approach involving a relationship of reference to, or correspondence with, being.

Deleuze talks about "truth" in a peculiar way. As I have said, he connects the non-being of Stoic incorporeals with the non-being of becoming (or of what he calls the event) and he calls the "pure event" sense. He also talks about "truth" in this connection, evoking what he calls the "truth" of problems (DR 162, LS 120-1). Problems themselves can be "true" or "false," not just propositions. The "truth" of problems is not a classical correspondence theory of truth. I doubt it represents a theory of truth in the sense that many philosophers might want, so I leave the word in scare quotes. It basically means the productivity or generativity of problems, the quality they have that makes them generative. This usage of the word "truth" puts Deleuze in a situation where the way he's talking about truth sharply contrasts with truth in the tradition of Plato and Parmenides, where a metaphysical theory of truth means correspondence with reality, accurate representation of what lies outside representation, or the adequation of thought or language with being. I take my understanding of the "ontological" theory of truth from Allen:

What has always been at stake in the history of this idea [truth] is the value of adequacy: Truth is ministerial, vicegerent, responsive to what is On this interpretation, the occasional truth in speech or thought presupposes the more originally determinate *being* or self-identical *presence* of the things whose being as they are makes them true. (1993, 5)

Allen uses the term "onto-logic" for this "ontological interpretation of truth-value as 'made' or 'determined' by the being of beings" (16). Aristotle, for example, defined truth in this style as saying "of what is that it is, and of what is not that it is not" (*Meta.* 1011b 25-6).¹⁰

Deleuze's theory of the "truth" of problems has almost nothing to say to the correspondence theory of truth. He thinks the latter is an abstraction and abstractions don't explain anything but must themselves be explained (a Whiteheadian motto Deleuze repeats a number of

¹⁰ Charles Kahn (1981) understands this formula and others like it as evidence of the "veridical" import of the verb to be in ancient Greek. Compare *Sophist* 263b: "the true one says those that are that they are … the false one says … those that are not, but that they are" and *Cratlyus* 385b: "that speech which says things as they are is true, and that which says them as they are not is false." Likewise, "are" has a veridical sense in Protagoras' *On Truth*, as quoted by Plato: "Man is the measure of all things, of things that are that they are, and of things that are not that they are not" (*Tht.* 152a). Kahn summarizes: "If one assumes (as Plato probably and Aristotle certainly did) that every sentence can be put into *S is P* form, then the veridical $\overleftarrow{e}\sigma\tau$ i and the copula construction become logically equivalent, just as 'p' is true is logically equivalent to *p*. … the absolute use of $\overleftarrow{e}\sigma\tau$ in the veridical construction is to be understood as a generalizing abstraction from, and thematization of, the truth claim implicit in normal declarative uses of the copula" (1981, 119).

times¹¹). As I understand it, in shifting talk of truth away from correspondence and adequation and in focusing on sense rather than reference. Deleuze is saying that understanding truth in the classical way, as correspondence or adequation, requiring a more or less mysterious relationship between representations and being or reality called "reference," is a dead end. The researches of post-Quinean pragmatists like Davidson have borne out how futile it is to seek such a relationship for founding a theory of truth (Davidson 2001, 193, 218-19).¹² Deleuze likewise thinks it is a mistake to concentrate attention on this idea of truth. Rather, we should instead think about what makes problems productive, and if we do so consistently enough, we will stop wondering what relation to reality makes thoughts true. When it comes to truth, Deleuze advocates changing the topic. Instead of reasoning from being to the truth-value of propositions, Deleuze reasons from non-being (of the event or sense) to the "truth"-value of problems. Doing so he also thinks will make it possible to tell a genetic story about the notion of *reference* that the correspondence theory of truth involves. The genetic story about the metaphysical theory of reference begins when we stop talking about truth as if it involved a relation between thought or language and something it confronts, something that "makes it true" (Allen 1993, 16). Rather than explaining correspondence (something it cannot do), reference itself will be explained in terms of what it presupposes (namely, sense).

Deleuze thinks, instead of chasing metaphysical truth we should talk about the "truth" of problems, the quality they have to generate, for example, productive questions and research programmes. This generative quality of problems stands opposed to the "falsity" of false problems that mire philosophy in fruitless insoluble dilemmas. In *Difference and Repetition*, Deleuze construes this quality of problems epistemologically, as representing the priority of problems over solutions, and a challenge to, or reversal of, the dogmatic image of thought, which defines problems in terms of their "solvability." A "true" (or "good") problem is one that has a solution, whereas a "false" problem is one, like the Kantian Antinomies, that cannot be solved.

In *The Logic of Sense*, Deleuze formulates this idea in a more logical, and even ontological way. Deleuze presents the "truth" of problems in the context of the productivity of sense (which is derived from the power of paradox and aleatory elements, as I shall explain below). A theory of

¹¹ E.g., D vii, WP 7. Deleuze probably adapted this motto from Jean Wahl's *Philosophies pluralistes d'Angleterre et d'Amérique* (1920, 37, 92-3), a book about William James among others, and a major influence on Deleuze's self-professed empiricism (Baugh 1993, 31 n.31).

¹² On Davidson as a pragmatist, see Rorty 1991, 126-50, and Murphy 1990, 95-116.

sense (or "events") will enable a genetic story about reference and informs us about the "truth" of problems because, he says:

Sense ... is doubly generative: not only does it engender the logical proposition with its determinate dimensions (denotation, manifestation, and signification); it engenders also the objective correlates of this proposition which were themselves first produced as ontological propositions (the denoted, the manifested, the signified). (LS 120)

What does Deleuze mean by "logical propositions" and "ontological propositions"? The idea is, I think, that propositions have feet in two worlds—being and thought, reality and representation. An examination of the proposition and its dimensions, especially the supplementary dimension of sense, which Deleuze thinks is necessary to recognize, will reveal how the two "worlds" or the two "series" (as Deleuze calls them) of being and thought are generated together and hence why we have this idea of "reference" between them.

Deleuze continues: *error* can arise from the "lack of synchronicity and blurring" between the two generated series. This happens when (for example) logical propositions, representations like denoting phrases, and ontological propositions, like the denoted, fail to match up. This conception of error, or falsity, is also an abstraction, Deleuze says, "because it affects only the truth of propositions which are assumed to be ready-made and isolated" (LS 120). It is like the "ontological" theory of truth as the correspondence of propositions with beings that "make them true." Deleuze's genetic methodology finds this abstract conception of error, truth and falsity, unacceptable because it assumes too much, as if propositions and their correlates were equally given in advance. Onto-logic naturalizes the products of a genesis, as if they could explain their own coming to be. Deleuze thinks we can do better.

The alternative is to change the way we talk about truth by thinking more about sense, that is, events:

The genetic element [of sense] is discovered only when the notions of true and false are transferred from propositions to the problem these propositions are supposed to resolve, and they [viz. true and false] therefore alter completely their meaning in this transfer. (LS 120)

Deleuze's thought is that problems direct us to a "structure constitutive of sense" (LS 120) that generates both (logical) propositions and the things they're about ("ontological propositions," i.e., states of affairs, not actual existents like objects). Deleuze thinks of this being directed toward sense as being provoked to consider the "conditions" of problems. Hence the supreme importance of sense, rather than reference; sense *is* the "truth" of the problem, the condition of its productivity:

"The relation between the problem and its conditions defines sense as the truth of the problem as such" (LS 120-1).

Deleuze elaborates on how he understands the relation between a problem and its conditions. He says, it's all a matter of how *determined* (that is, how completely specified, how well articulated) a problem's conditions are. In most cases they will be undetermined, or insufficiently determined. If so, then the problem will engender solutions proper to it only when left free to determine *itself*. It will engender artificial solutions when forcibly related to an extrinsic framework needed to extract solutions from it. Deleuze also suggests that *false* problems are those whose conditions are *over*determined (LS 121). I will discuss the determination of problems and false problems more thoroughly in Chapter 3. For now what's important is that Deleuze says that sense is the "truth" of problems. Talking about sense, and by extension events, in the way he encourages us to is a way of talking about this generative quality of problems. The emphasis on sense and non-being boils down to an emphasis on the greater importance of sense as compared to reference.

This is the "sense" Deleuze invokes when he says that the Stoics discovered it in their doctrine of non-existent incorporeals. What is at stake is nothing less than genesis itself, which reference takes for granted. The Stoic theories of non-existent incorporeals amount not only to an account of the non-being of becoming (or of the event), but also a theory of the "truth" of problems, in that incorporeals supposedly preside over the genesis of logical and ontological propositions, representation and reality.

To sum up what I've said so far, the Stoic theory according to which "something" and not "being" is the supreme genus is best understood as a response to Eleatic orthodoxy, famously problematized in the *Sophist*, that connects being, being something, and truth. Making "*to ti*" the supreme genus is a way for the Stoics to say that non-being is *in a sense*, while still being able to maintain that *strictly speaking* it is not. Stoic physical theories—for example, about void, place, and the limits of bodies—are concrete dramatizations of this anti-Eleatic point. A corollary of this transformation of the Eleatic and Platonic inheritance is a new way of discussing truth in more dialectical, logical or "problematic" and less ontologically committed terms, reasoning from non-being to the "truth" of problems. The renovated Stoic theory of truth will involve those incorporeals, already mentioned in passing, known as "sayables" (*lekta*), specifically so-called "complete" *lekta*, or propositions (*axiômata*), which take a truth-value. I defer a complete discussion of this point until later, when I discuss how Chrysippus makes logical good on Zeno's

ontological innovations. Now I want to underscore only that Stoic and Platonic truth are very different animals. In fact, Deleuze thinks that the Stoic theory of meaning can tell us something about the productivity of problems.

We can already perceive one implication of Deleuze's interpretation of these matters. He forges an alliance between the Stoics and the Sophists (at least as they appear in Plato). Truth in Stoicism bears a striking resemblance to the truth of the Sophists, the "truth" of non-being, disseminated by the producer of false appearances by means of statements. In the Sophist, Plato distinguishes between two kinds of productive art: the "likeness-producing" (eikastikê) art, which is faithful to the original paradigm, and the simulacral "appearance-producing" (phantastikê) art, which distorts the original, accounting for Plato's accusation that the latter is "abandoning the truth" (Soph. 236a-c), that is, abandoning the "onto-logical" relation of correspondence or mirroring. Stoic *lekta* also detach the account of truth from the account of being, and attach it to the *non*-being of incoporeals. The Stoics maintain, in a way that Plato thought was typically sophistic, that "there are things that do not exist" and some of these non-beings that are in a sense can help us talk about truth. Compare the sophist Gorgias's claim that "nothing exists."¹³ Jean-Francois Lyotard shows how Gorgias, like Plato, is engaged in a debate with Parmenidean ontology, and that his reasoning corresponds, in some measure, with the reasoning in the Sophist. As Lyotard puts it, for Gorgias, "Reality [truth] is not bestowed by some goddess at the tip of her index finger, it has to be 'demonstrated,' that is, argued and presented as a case, and, once established, it is a state of the referent for cognitive phrases. This state does not preclude that, simply put, 'nothing is'" (Lyotard 1988, 16).¹⁴ Deleuze's Stoics are heirs to the anti-Eleaticism of the Sophists.

STOIC COSMOBIOLOGY

What is the relation between bodies and incorporeals in Stoicism generally? If Deleuze thinks the Stoic theory of incorporeals, especially the "sense" of *lekta*, has the purpose of giving a genetic account of the relationship between states of affairs and words, thoughts, or propositions, then such non-beings ought to have a kind of autonomy with respect to Stoic beings. They ought not be just dependent on, or by-products of, relations among beings (i.e., bodies), since then they

¹³ "ὀυδέν εἶναι": S.E. PH 2.57, M 7.65-87; see also Cassin 1980.

¹⁴ Lyotard adapts Cassin's (1980) interpretation of Gorgias's claim "If nothing is, therefore, then demonstrations say everything without exception (*ei men oun ouden tas apodeixeis legain hapanta*)" (Pseudo-Aristotle, *De Melisso Xenophane Gorgia*, 980a 9). On this pseudonymous work, see Mansfeld 1988.

would just presuppose those bodies as a kind of uninterpreted reality, and the notion that it is possible to use *lekta* to tell a genetic story would ring hollow.

The Stoic corporeal cosmos is constituted by two principles (arkhai), called the active (to *poion*) and the passive (to paskhon). In turn, the Stoics identify the ungenerated active principle with logos, a rational orderliness, as well as with god or Zeus (D.L. 7. 134-5, 147). These identifications were already current with Zeno and probably come from his reading of Heraclitus (Long 1976). Zeno's characterization of the active logos as a "pur tekhnikon" or "crafting fire" probably also has the same derivation.¹⁵ But Zeno combines this Heraclitean conception of the cosmos with some Aristotelian elements by associating the active principle with heat and the passive principle with wetness, a "precosmic moisture" (Lapidge 1978, 165).¹⁶ Zeno apparently interpreted Hesiod's *Cosmogony* allegorically along these Aristotelian lines. Following a dubious etymology, Zeno suggests that Hesiod's "Khaos" derives from the verb *kheesthai*, which connotes liquidity.¹⁷ Michael Lapidge compares Zeno's conception of the rational agency of heat and the passivity of wetness to Aristotelian biological theory, for example, to the passages about sexual procreation in Aristotle's The Generation of Animals: "All have in their semen that which causes it to be productive; I mean what is called vital heat" (736b 34-5); and to Theophrastus's generalization: "everywhere nature generates life by mixing heat with moisture, the moisture acting as matter (*hulê*) for the heat" (*De causis plantarum* 3.23.3, quoted by Lapidge 1978, 165). Indeed, the Stoics also identify the moist passive principle with matter (D.L. 7. 134).

For the Stoics, the entire cosmos is an organic mixture of these two principles at every level. Stoic cosmology is always a "cosmobiology" (Todd 1978, 144). Although Zeno's physics seems deeply Aristotelian, it is important to bear in mind the critical difference. Aristotle says that the active component in sexual generation is superior to the passive component insofar as "the definition and the form" of the organism belong to the former, and not the latter (*GA* 732a 1-12). While there may be some implication that the active Stoic principle is superior (it is certainly divine), it is *not formal* in the Aristotelian sense of immaterial. Both Stoic principles are bodies.¹⁸ Nevertheless, commentators are careful to note that fiery divine agency, for Zeno, is not identical to ordinary physical fire. Zeno distinguishes between "*pur tekhnikon*," divine crafting fire, and

¹⁵ Stobaeus, *Eclogae*, 1. 25,3 = SVF 1. 120.

¹⁶ See Aristotle, *Meteorologica*, book IV, for Aristotle's arguments about what he calls the "causes of the elements," the hot, the cold, the wet and the dry, and the claim that "the hot and the cold, are active ... the dry and the moist, passive" (378b12-3).

¹⁷ Valerius Probus, *In Verg. Ecl.* VI. 31 = SVF 1. 103.

¹⁸ Bobzien 1998, 17; Cooper 2009, 97.

"pur atekhnon," destructive or ordinary elemental fire (Stobaeus, Ecl. 1. 25,3). Perhaps because of this ambiguity, the Stoics also identify divine agency with a corporeal *pneuma* or "breath" (Lapidge 1978, 167). Logos permeates intra-cosmic bodies as animating pneuma.¹⁹ Different quantities of pneuma distributed to different kinds of bodies contain different portions of divine logos, and are called by different names. A relatively low degree of pneumatic permeation is called a bond or tenor (*hexis*), guaranteeing the simple cohesion of bodies like bones and rocks; a greater quantity of pneuma in a body is called a nature (*phusis*) and belongs to living things like plants, serving them as a principle not just of cohesion but of nutrition and growth; a soul (*psuchê*) causes perception and locomotion in animals, as well as all the simpler functions; and finally the capacity for rational thought (*nous*) denotes the preeminent degree of pneumatic commixture.²⁰ These quanta of pneuma in bodies are called *spermatikoi logoi*, "seminal reasons" (Aetius, *Placita*, 1.7. 33 = HP §46A; D.L. 7. 136), and they organize bodies into functional dispositions. In other words, organismic morphogenesis is just one of a host of similar causal processes differing in degree. Being pneuma, seminal reasons are themselves corporeal, and they actively affect bodies by communicating motion to passive matter in a manner described as "tensional" (tonikê). The precise character of such tensional motion is perhaps not totally clear, but it is clear that the causal action of a seminal reason inside a body is not qualitatively different from the causal action between bodies.²¹

Since the principal difference between Stoicism and the Aristotelian and Platonic traditions—however much the first owes the other two—lies in the corporeality of *both* Stoic principles, passive matter and active *logos*, what the Stoics need for their physics is not an explanation of how immaterial formal principles can act upon bodies, but rather a theory of the permeation of one body by another. The Stoic theory of "total blending" (*krasis di' holôn*) explains the relationship between one kind of body (divine *logos* in its unequal distributions) and another (passive matter). This theory must walk a fine line. Active and passive bodies are not merely "juxtaposed," remaining outside one another; rather they are so totally blended that they occupy the

¹⁹ Even thought the identification of *to poion* with *pneuma* is also attributed to Zeno (D.L. 7. 157; Galen, *Hist. Phil.* 24, p.613, 12 = SVF 1. 136), it is often presented as Chrysippus's innovation (e.g. Todd 1978, 148; Bobzien 1998, 17) on the basis of a fragment supposedly in Chrysippus's own words preserved by Galen: "The soul is pneuma inborn in us, continuous, extended throughout the entire body" (SVF 2. 911). ²⁰ D.L. 7. 138-39; Galen, *Intr.* 14. 726. 7-11 = HP §47N; S.E. *M* 9. 81. See Todd 1978, 151, and Meyer 2009, 74.

^{74.} ²¹ Alexander of Aphrodisias describes the agency of pneuma on bodies as "tensional" in his commentary on the *De Anima* (SVF 2. 448) and then describes how pneuma causes bodies to cohere by moving "in opposite directions at the same time ... simultaneously moved into and out of itself" (*De mixt.* 224. 23-26, trans. Todd). Compare Stobaeus, *Ecl.* 1. 153,24 = SVF 2. 471.

same place. Even so, the two bodies are not thereby "fused" into one, destroying the individual character of each (Alexander of Aphrodisias. *De mixt.* 217. 9-13 and 220. 23-29). Chrysippus illustrated the idea by declaring that even a small splash of wine could be totally mixed with the whole ocean (D.L. 7.151; Plutarch, *Comm. Not.* 1078e).²²

This theory of mixture seems to be motivated by the corporeality of the Stoic principles. There was at one time a scholarly controversy, however, over whether or not the Stoic principles were really best understood as corporeal (HP I. 374). Some commentators argued that it is more in keeping with Stoic cosmology to characterize the cosmos not as a hierarchized network of bodies acting on one another, both internally and externally, but as one single body—a kind of cosmic organism—acting on itself (Todd 1978, 139). What the Stoics call principles, then, would be "aspects" of this holistic body (Lapidge 1973, 241). Since the duality of active and passive principles would be something "reached by a logical, or conceptual, distinction," the principles themselves could "be identified as what the Stoics called *lekta*, or incorporeal statements made about bodies" (Todd 1978, 139, 142). There is some textual support for the view that Stoic principles are *lekta*.²³ However, while it is uncontroversial that the Stoic cosmos is an organic system, the incorporeality of *lekta* is not considered plausible today (Bobzien 1998, 17 n.5; Frede 2005, 215-16; Cooper 2009, 97 n.11).

While resistance to the interpretation of Stoic principles as incorporeal has good textual support, it is fueled mainly by the desire to make Stoicism conceptually consistent. The Stoics treat principles as the *causes* of bodily dispositions, and Zeno declares that only bodies can be causes and that incorporeals cannot be the cause of anything (Cicero, *Acad.* 1. 39). Both Frede and Long and Sedley (HP I. 374) claim that for good philosophical reasons the principles cannot be incorporeals. Frede even goes so far as to say that even if Diogenes Laertius said the Stoic principles were incorporeal his report must be mistaken (2005, 216).

According to the mainstream interpretations of Stoic ontology, then, incorporeals are presented as having an ontological status dependent on bodies: "in Stoic usage the Greek language equivalent to our 'subsist' [*huphistasthai*] clearly signifies what may be called a subordinate or

 $^{^{22}}$ Alexander, an Aristotelian, thinks that the Stoic theory is absurd, since any mixture must be either a juxtaposition, in which the character of the components is preserved, or a fusion, in which their character is destroyed; *tertium non datur* (*De mixt.* 220. 35 – 221. 15). For a favorable account of the Stoic theory of mixture, see Sorabji 1988.

²³ Much of the textual controversy surrounds an alternative reading of Diogenes Laertius (7. 134) that adds a privative alpha to the word "*sômatos*" (SVF 2. 299). This is, however, very much an outlier. See Mansfeld 1978.

rather dependent mode of existence, one that is distinct from being real in the sense of being tangible and thus capable of acting and being acted upon" (Graeser 1978, 89; compare Long 1971a, 90). More recently, Caston has proposed that we should say the Stoics make incorporeals "supervene" on corporeal states in a way that anticipates contemporary discussions in the philosophy of mind. For example, as Caston renders it, Chrysippus said that "sayables [*lekta*] ... are supervenient on thought (*paruphistamenon tê dianoia*)" (S.E. *M* 8. 12; Caston 1999, 207 n.126).²⁴ Caston doubts that Stoic "*parhupotasis*" means the simple parasitism of incorporeals on bodies, and suggests that the "Stoic usage of the term may not require anything stronger than the covariation involved in supervenience" (Caston 1999, 207, n. 126). But either way, the relation between incorporeals and bodies remains an asymmetrical dependency. Incorporeals follow bodies and not the other way around.

There is one notable minor exception to the dominant view that incorporeality depends on corporeality. Marcelo Boeri (2001) argues that the asymmetrical dependency of incorporeals on corporeals is "not consistent with Stoic philosophy as a whole" (Boeri 2001, 727). Rather, there is a "reciprocal dependence" between bodies and incorporeals (728). For example, Boeri suggests that it is not obvious that the Stoic incorporeal time is simply dependent upon the causal networks of bodies. Rather, he contends that the Stoics understood incorporeal time as the "necessary condition" for the interactions among bodies, and presupposed by them (729). He singles out Clement of Alexandria as the lone extant recording of a Stoic view in which time counts as a cause. Clement takes the process of a child learning as an example; the child's father, Clement says, is the "prokatarctic" cause, affording the occasion for learning, the teacher the "sunhektic" (or perfect) cause, the child's character a "cooperating cause" (sunergon), and time is the cause "sine qua non" (hôn ouk aneu), the phrase Boeri renders "necessary condition" (Stromata, 8.9. 25.4). Lekta likewise, Boeri thinks, exercise a reciprocal influence upon bodies: "Sayables also play a crucial role in the constitution of the real and corporeal world, for one of their basic functions consists in establishing the logical-linguistic relations which permit us to categorize the object, so that we can know it" (732). This may sound like what I've already said about the Stoics needing to provide a new logical/dialectical conception of truth. Without, however, a more comprehensive philosophical reconstruction, Boeri's hypothesis remains unlikely to convince scholars that incorporeals play anything more than a secondary role. Deleuze, I think, provides a reconstruction of Stoicism in the

²⁴ The Stoic terminology is consistent between Diogenes and Sextus; *paruphistamenon* is grammatically related to *huphistasthai*. Caston attributes this manner of translating *paruphistamenon* as "supervenient" to Atherton 1993.
light of which Boeri's hypotheses would be defensible. In Deleuze's alternative reading of Stoicism, incorporeals (specifically, *lekta*) are not merely dependent, "sterile" byproducts of causal networks among existing bodies, but exercise a power that Deleuze calls "quasi-causal." In fact, Deleuze cites the same report about Stoic causality as Boeri. Clement of Alexandria says: "others [the Stoics] say that body is properly speaking cause, and that the incorporeal is *as it were causal loion aitiôdôs*], in a manner of speaking [*katakhrêstikôs*]" (*Stromata*, 8. 9. 26, my translation). It's perfectly reasonable to render "*hoion aitiôdôs*" as "quasi-causally," and I think it's likely that Deleuze derives this terminology from Clement. Even though Clement is discussing the quasi-causality of *time*, Deleuze seems to generalize this account and apply it to all the incorporeals— although principally to *lekta*.²⁵

SENSE AND THE STOIC THEORY OF MEANING

We therefore have to understand more about the Stoic theory of *lekta*. How does Deleuze's interpretation of Stoic *lekta* fit the extant evidence? It's a mixed bag. The Stoic theory does to some extent justify Deleuze's appropriation of the Stoics in his project of giving a genetic account of the "truth" of problems by way of the theory of sense, but it cannot completely justify it, since Stoic semantics rely, in the last resort, on an epistemology that remains referential or "onto-logical" (involving a correspondence or referential theory of truth with something that "makes it true").

The Stoics represent subdisciplines of philosophy in terms of arborescent hierarchies. They claim that dialectic, itself a branch of logic, is divided into two subordinate branches: "the topic about the signified [*sêmainomenon*] and [the topic about] the utterance [*phônê*]." Furthermore, "the topic about the signified is [divided] into that about presentations [*phantasiai*] and that about the *lekta* subsisting with respect to them" (D.L. 7. 43). It is generally agreed that the second half of dialectic—the topic about the utterance—formulates criteria for the art of speaking well, and applies to language as something corporeal (Lloyd 1971, 58; Frede 1978, 303). The first half of dialectic, on the other hand, pertaining to the *sêmainomenon*, treats language insofar as it is meaningful and incorporeal. For the Stoics, meanings are not bodies. Moreover, it is not the study of language qua existent body but the study of language qua incorporeal that studies truth and falsity:

True and false have been variously located in what is signified [to sêmainomenon], in the utterance [$phôn\hat{e}$], and in the motion of thought. The Stoics opted for the first of these, claiming that three things are linked together: what is signified, that which signifies [to

²⁵ Sellars (2007) criticizes Deleuze's reconstruction of Stoicism on this basis.

sêmainon] and the object of reference [*to tunkhanon*, or "what is real"]. That which signifies is the utterance, e.g. "Dion," what is signified is the specific state of affairs [*to pragma*] indicated by the spoken word and which we grasp as subsistent [*paruphistamenon*] on our thought but which the barbarians do not understand although they hear the sound; the object of reference is the external existent [*tunkhnanon de to ektos hupokeimenon*], that is, Dion himself. Of these, two are bodies, utterance and the object of reference. But the state of affairs signified [*to sêmainomenon pragma*] is not a body but a *lekton*, which is true or false. (S.E. *M* 8. 11-12; trans. Long 1971a, 76-77, modified)

There is a lot in this important passage. First, the Stoics clearly identify states of affairs (*pragmata*) with *lekta*.²⁶ Anthony Long notes that this identification stands in stark contrast with the Peripatetic use of the term *pragma*, which generally indicates visible, tangible objects, the sorts of things the Stoics call "*tunkhonta*" (which derives from the word *tukhê*, "chance," and connotes something like the things that "happen to" exist).²⁷ Long argues that for the Stoics *lekton* means "what is said" (1971a, 77), in the sense of there being some *thing (ti)* that is said. Although this something is not existent in the full, corporeal sense, it nevertheless stands as a kind of necessary precondition of making utterances, enabling communication between speakers of the same language.

The Stoics also identify what is said ("sayable" is the scholarly convention, which I will follow) with a predicate (*kategorêma*).²⁸ Caston explains why: "The Stoics begin from a distinction between *naming* and *attribution*, which takes its origin from Plato's *Sophist* (261e-263d). But the Stoics mark this difference in strongly ontological terms. What we name are bodies. But in speaking about bodies, we do something quite different [from naming them]" (Caston 1999, 205). We *attribute* (*katêgoreisthai*) something to a body. This distinction between naming and attributing can be clarified by rephrasing an ordinary description like "Peter is walking" as the Stoics would analyze it. For the Stoics, this statement does two things; it names Peter (a body), and it attributes walking to that body. So we should say "of Peter *that* he is walking" (compare Bobzien 1998, 24). With regard to Peter, the attribute that-he-is-walking is a real (though non-existent) *something* attributed to a body.

The Stoics furthermore distinguish between "complete" and "deficient" lekta:

Deficient $[ellip\hat{e}]$ are those which are unfinished in their expression, such as *writes*; for we go on to ask 'Who?' Complete $[autotel\hat{e}]$ are those which are finished in their expression, such as *Socrates writes*. So predicates $[kat\hat{e}gor\hat{e}mata]$ are placed among the incomplete

²⁶ Compare Diogenes Laertius: "There is a difference between saying and verbalizing. For utterances are verbalized, while what is said are states of affairs [λέγεται δὲ τὰ πράγματα], which is why they are 'things said' [λέκτα]" (D.L. 7. 57).

²⁷ Long 1971a, 107 n.9. The Aristotelian commentator Ammonius (*In An. Pr.* 68, 4-6) was acutely aware of the terminological difference.

²⁸ Stobaeus, *Ecl.* 1. 138,15-16 = HP §55A; S.E. *M* 9. 211; Clement, *Strom.* 8. 9. 26,4.

lekta, and propositions [*axiômata*] and syllogisms and questions and enquiries are placed among the complete. (D.L. 7. 63, trans. Inwood and Gerson, modified)

A proposition is the kind of complete *lekton* that takes a truth-value; it is called *axiôma* because it can be accepted (*axioun*) as true (D.L. 7. 65). A true proposition is an acceptable one, and a false proposition unacceptable. It may be thought that a complete *lekton* is the combination of a reference to a body and the attribution of a predicate to it, and that the complete *lekton*'s truth and falsity depend on the correspondence between body and predicate. Long interprets the Stoics as saying just this. He proposes that the difference between a complete and deficient *lekton* is that the former refers to an existent situation and the latter does not. He describes a complete *lekton* as a combination of a subject or case (*ptôsis*) and a predicate (*katêgorêma*). Long thinks deficient *lekta* lack a reference, which *ptôsis* provides (Long 1971a, 78). Thus, for the Stoics "To understand ... is to perceive the connexion between the spoken word and its object of reference. And it is this reference of an utterance to some object which is 'what is signified' [*sêmainomenon*] and *lekton*" (77). However, in thus equating *lekton* with reference to an object, Long makes reference to extra-linguistic bodies fundamental to the Stoic theory of meaning, something Deleuze would want to resist.

Andreas Graeser (1978) provides the classic criticism of Long's view. Graeser doubts that the Stoics even "had available to them a word for expressing our concept of denotation," and argues that *sêmainein* "in Stoic semantics stands exclusively for a relation that holds between the linguistic sign [a body] and its sense" (Graeser 1978, 81; cf. Frede 1994, 111-12). *Ptôsis*, which may be thought a strong candidate for expressing the concept of reference, actually doesn't do so. Drawing on evidence from Clement (*Stromata* 8. 9. 26,1), Graeser notes that the Stoics use "*ptôsis*" to pick out the species of incorporeal *lekton* related to nouns and noun-phrases (1978, 85, 91), not a special relationship between words and world. Graeser also claims there is no genuine evidence that for the Stoics proper names refer to an existent object, and that the evidence that does exist indicates that the Stoics think names must be supplemented by *deixis* (nonsemantic contextual pointing) in order to refer (83-4).²⁹ So he argues, in contrast, that the Stoic theory of meaning is "fundamentally nonreferential" (87).

²⁹ For example, Chrysippus apparently understood the *deixis* "this man" to imply the existence of the man in question. This claim is recorded in one of Chrysippus's attacks on Diodorus Cronus' Master Argument— specifically the second premise, that an impossible proposition cannot follow from a possible one: Chrysippus denies the premise by accepting the conditional "If Dion is dead, this man is dead," even though he thinks the consequent is impossible. (Alexander of Aphrodisias, *In An. pr.* 177,25-178,4 (= HP §38F); Sedley 1977, 100-1; Bobzien 1998, 114.)

How can we understand Graeser's claim? Stoic semantics involves three components: the thing that signifies (*phonê* or *sêmainon*), the thing signified (*sêmainomenon*), and the thing referred to. The question is whether the Stoics conceived of meaning as involving a relation between all three. On the whole, Graeser doubts it. It seems more likely that meaning is just a relation between carriers of meanings and the meanings themselves, an isomorphism between linguistic contents and their respective signs. Nothing more. Why not? Graeser argues, a referential theory of meaning is incompatible with Stoic holism. As he puts it:

The Stoics conceived the total sum of existence in terms of a moving continuum and thus were not likely to conceive of the denotations of meaningful expressions [i.e. the referred-to objects] as natural classes of extra-linguistic entities. They were not likely to commit themselves to the position that physical existents belong to one appropriate category only. (1978, 80)

The fear is that making meaning depend on reference to existent bodies entails abstracting them from the "moving continuum" of the Stoic cosmos, as if they were granted a special exemption from the continuous flow, without sufficient reason for doing so. Graeser's Stoics are more circumspect. They aren't naïve realists, he thinks, because they recognize that whatever relations meanings have with the world are "functional." He makes the Stoics take this line:

In referring to things as being particulars of such-and-such a kind, we must be aware that we are approaching reality through predicates and propositions and that we are talking about segments of the total universe, and that it is our mind that divides and articulates reality, arriving at logical constituents even where the physical components are inseparable (Graeser 1978, 80).

Unlike Aristotle who ... thought that there are real entities corresponding to words and that language mirrors relations that obtain between real entities existing independently from the mind, the Stoics implied that ontological analysis is bound to be subjective, or rather functional, in that it is man's mind that superimposes its concepts on reality. (98)

The holistic emphasis of Graeser's interpretation is compatible with what Deleuze says about the Stoics: that they reject—or explain genetically—inherited Platonic dualisms (e.g., of reality and language, cause and effect) rather than taking them for granted. These dualisms are functions of our interests and our perspective.

According to Graeser, the Stoics thought not only that in semantics there is no "isomorphic correlation between thought on the one hand and things-that-are on the other" (Graeser 1978, 98), but also that we don't need one. The best evidence for this view comes from a fragment of Posidonius who warned against conflating what is expedient for our understanding reality with the nature of reality itself:

He [Posidonius] said that the substance of the whole, matter, was without shape and quality, insofar as it has in no way a separate form of its own, nor a quality by itself either, but it always is in some form and quality. Substance differs from matter, being the same in reality, in thought only. (F. 92, Edelstein-Kidd, translation modified)

If the Stoics were generally circumspect about reference, as Graeser thinks, on account of their cosmic holism, separable physical components are not likely to do the heavy lifting in semantics. Truth does not straightforwardly arise from referring to existent bodies and then ensuring the correspondence of propositions with them, because the identity of bodies referred to, such that we can pick them out, depends on the function we want to make of them.

This is not to say, however, that there is no special relationship between world and word in Stoicism, the kind of mirroring or adequation typical of onto-logic. In fact, I think it is not in semantics, but in epistemology, and the theory of "kataleptic impressions" in particular, that the Stoics locate a special relationship between thought and being (S.E. *M.* 8. 85-6). I shall argue below that Deleuze, like Sextus Empiricus, is unimpressed with this procedure.

In the background of Graeser and Long's disagreement about the referential or nonreferential character of the Stoic theory of meaning, is the claim, which is quite widespread, that the Stoics anticipated Frege's sense-reference distinction.³⁰ Deleuze also says that the Stoics discovered "sense" with their doctrine of incorporeal *lekta* (LS 19). Sense is usually contrasted with reference in theories of meaning after Frege. How Fregean is Deleuze being when he talks about the Stoic discovery of sense, and how Fregean is the Stoics' presumptively "nonreferential" theory of meaning?

Frege's famous paper "*Über Sinn und Bedeutung*" begins with a reflection on the concept of identity. Is it a relation? If so, a relation between names or things named? In his earlier writings, Frege had assumed the former. It seemed to him that a = b says that two names or signs ("a" and "b") name the same thing. In this paper, however, Frege realizes that, if that were so, then we wouldn't learn anything by way of identity statements. The application of names to things is arbitrary. If identity statements, like a = b were just about names, then they could only tell us about how some people use signs, which is not especially educational. Yet we *do* learn something about things and not just words (at least sometimes) when identity statements are used. For example, we learn something about astronomy when told that "Hesperus is Phosphorus." As Frege puts it, a = aand a = b have different "cognitive values"; they seem to tell us something different (Frege 1960, 56-7). He explains this phenomenon by suggesting that a difference between a = a and a = b arises

³⁰ Mates 1953, 11-20; Lloyd 1971, 66; Long 1971a, 105; Graeser 1978, 78-82; Frede 1994, 119.

only if the difference in signs ("a" and "b") picks out a difference in the "mode of presentation" of the object they both refer to. This latter difference, between "modes of presentation," makes a difference cognitively.

These considerations about identity motivate Frege's introduction of terms. A name or a sign has both a reference (*Bedeutung*) and a sense (*Sinn*). The former is an object (say, the astronomical body of the planet Venus), and the latter contains the "mode of presentation" of the object (its appearing in the sky at dawn or at dusk, as the case may be). Frege expands this scheme beyond names or signs. Whole sentences also have sense and reference. The sense of a sentence is, Frege says, the "thought" that the sentence contains, which, he explains in a footnote, is not something subjective like an "idea" or "representation" (*Vorstellung*) but the "objective content" of thinking that can be common to many thinkers (62). The reference of a sentence, Frege claims, somewhat idiosyncratically, is its truth-value. So, for example, the reference of a true sentence is "the True" (63).

Frege thinks the sense-reference distinction can defuse the initial quandary about identity, and the situations where identity statements make a cognitive difference: in the advancement of knowledge, Frege says, both reference and sense are involved. The difference of cognitive value between a = a and a = b is explicable this way: if "a" and "b" are names, then a = a is a tautology about a name that has a certain reference and a certain sense, and a = b says about two names that they have the same reference (the same object) and a different sense (that they express a different "mode of presentation"). Similarly, if "a" and "b" are sentences, then a = b says that they have the same reference (that is, the same truth-value) and a different sense (that is, they express a different thought) (78).

Frege's idea that names and sentences have both sense and reference has one important consequence, which I think informs Deleuze's appropriation of the word "sense." One reference can have many senses associated with it. As Frege explains in a footnote:

In the case of an actual proper name such as 'Aristotle' opinions as to the sense may differ. It might, for instance, be taken to be the following: the pupil of Plato and teacher of Alexander the Great. Anyone who does this will attach another sense to the sentence 'Aristotle was born in Stagira' than will a man who takes as the sense of the name: the teacher of Alexander the Great who was born in Stagira. (58)

The difference between "The teacher of Alexander was born in Stagira" and "The pupil of Plato was born in Stagira" is just the difference of senses of a name. Frege would say, here there is a difference in the mode of presentation of the object (Aristotle), or perhaps a difference in the

thought involved in the sentence, but not a difference in the object itself or the truth-value of the sentence, which is, in both cases, true, (as far as we know). That there are always multiple senses for any given reference is something Deleuze likes in Frege. What is basically "Fregean" about Deleuze's use of "sense" is that wherever there is sense there is a *plurality* (Voss 2013, 10). If there is one sense, there are indefinitely many: there are always multiple senses for signs with the same reference.

To this concession about the plurality of senses associated with the reference of a given name, Frege appends a reflection about the imperfection of natural language:

So long as the reference remains the same, such variations of sense [as in the case of Aristotle] may be tolerated, although they are to be avoided in the theoretical structure of a demonstrative science and ought not to occur in a perfect language. (1960, 58)

Moreover, the ineliminable plurality of senses makes it difficult, if not practically impossible, to link senses and references systematically:

The sense of a proper name is grasped by everybody who is sufficiently familiar with the language ... but [this sense] serves to illuminate only a single aspect of the reference, supposing it to have one. Comprehensive knowledge of the reference would require us to be able to say immediately whether any given sense belongs to it. To such knowledge we never attain. (57-8)

It seems like the comprehensive ambition of knowledge to systematize the linkages between senses and references is constantly thwarted by the plurality of senses.

How true is it that the Stoic theory of meaning anticipates Frege's? Graeser thinks it does because he thinks the Stoic theory is "fundamentally nonreferential." That is, meaning is just the relation between the name/sign/utterance (*sêmainon/phonê*) and the sense-like entity (*sêmaimenon/lekton*), a relation between the name and some *non-existent* entity, not between a name and being. This sounds a bit like Frege's view that sense emerges when a difference between signs "corresponds" with a difference in the mode of presentation of an object—if I may put it this way without sounding question-begging, that a difference in meaning arises when a linguistic difference matches up with a meaning*ful* difference in our relation to the object designated. The relation between a "mode of presentation" and a sign is hardly the same things as a relation between a being and a name.

Graeser, however, shies away from saying that Stoic semantics are straightforwardly Fregean. Why? Because Frege's theory of meaning is certainly not "fundamentally nonreferential." A number of considerations attest to the importance of reference in Frege. First of all, he imagines a potential objection. Idealists or skeptics may object: how can you say that a name, like "Moon," refers to an object if you don't even know that such an object exists (or exists physically)? Frege responds that when we talk we always presuppose that our words have reference: "when we say 'the Moon,' we do not intend to speak of our idea of the Moon, nor are we satisfied with the sense alone, but we presuppose a reference" (1960, 61). Of course, we could be wrong, and Frege concedes that we should append the proviso "if such reference exists" when necessary. However, the skeptic's objection is deeply unnatural. The default assumption when we speak is that there is a reference. For example, when we use names, we assume that there is an object they refer to. This assumption, encoded into Frege's philosophy of language, seems to make reference fairly fundamental.

Frege also considers sentences that (seemingly) have a sense but no reference, for example, sentences containing the names of fictitious entities such as "Odysseus was set ashore at Ithaca while sound asleep" (1960, 62). Frege thinks that to take the sentence as true or false you would have to seek the reference, not just the sense, of its parts. For example, does the name "Odysseus" have a reference? If we were *only* interested in the sense, or the thought, the sentence contains (which happens occasionally in aesthetic appreciation), we would not be concerned with the reference. But Frege thinks our tendency to ask about the reference of sentence-components is telling. It shows that we expect the *whole sentence* to have a reference as well, in other words a truth-value: "the True" or "the False." Frege wonders why we want to know whether (or presuppose that) names have references, and he answers: because we are naturally concerned with truth-value (the reference of a sentence).

Why is the thought not enough for us? Because, and to the extent that, we are concerned with its truth value.... The question of truth would cause us to abandon aesthetic delight for an attitude of scientific investigation. ... It is the striving for truth that drives us always to advance from the sense to the reference. (63)

Frege's sense-reference distinction, coupled with the distinction between the sense/reference of a name and the sense/reference of a sentence, links the traditional question of truth (correspondence with reality) to the semantic question of truth-value. The references of names are objects in the real world and the references of sentences are truth-values. Frege's notion of "reference" unites both of these topics. He says that both truth and semantics are products of the same natural drive: the "striving for truth."

There are two things to note about the fundamentality of reference in Frege. First, it is easy to recognize here one of the postulates of what Deleuze calls the "image of thought," namely thought's "upright nature" or special relationship with the truth, manifested in our natural concern

for objects of reference and truth-values. Second, in connecting reference with the quest for truth in this way, Frege "stipulates a strangely detached relation between sense and the question of truth or falsity" (Voss 2013, 2). We should add: sense is detached from the traditional conception of truth and falsity as involving something (e.g., a relation of reference between language or thought and its objects) that "makes" statements true. This is exactly Deleuze's point, and it is, in part, why he appropriates the term "sense." This traditional question of what the relationship with the world is that makes statements true is not what interests Deleuze. He is interested in the "truth" of problems, and he thinks sense can tell him something about that. This "strange detachment" in Frege between sense and the question of truth and falsity is what Deleuze picks up on: the detachment or independence of sense and reference.

Considering the fundamentality of reference in Frege, though, it's unlikely that he is the major source for Deleuze's conception of "sense."³¹ Deleuze likes a couple of elements of what Frege says, but the paucity of references to him in *The Logic of Sense* is probably not an accident. The fundamentality of reference in Frege probably also counts as evidence in favour of Daniela Voss's hypothesis that Deleuze is "rethinking" the notion of sense, not just adopting Frege's notion. Specifically, Voss argues that when Deleuze says "signification," which he identifies as a dimension of the proposition and criticizes in detail (more on which below), this is his name for what Frege calls "sense" (Voss 2013, 5). Deleuze's criticisms of "signification" are criticisms of the way thoughts, reference and truth-value are woven together, as they are in Frege: because of the detachment between sense and truth and falsity, sense can't do any generative work alone—it always requires reference: "signification can never exercise its role of last foundation, since it presupposes an irreducible denotation" (LS 18).

In Deleuze, the notion of sense is being "rethought." Frege is not being taken up wholesale, but neither is Deleuze simply rejecting a whole tradition of analysis and philosophy of language. He's trying to supplement it and show the necessity of yet another dimension of the proposition, which he also calls sense (Voss 2013, 4-5). This extra dimension is not identical to Frege's "*Sinn*," although Deleuze uses the Fregean word "sense." Deleuze says the Stoics discovered it, to the extent they related meaningful speech to non-existence.

³¹ *The Logic of Sense* makes it quite clear that Deleuze is taking the word "sense" from Husserl's *Ideas* (LS 20-1; cf. Husserl 1983 §129-31, pp. 309-16), which does not refer to Frege. How closely Deleuze's use of the term follows Husserl's is a matter for another study. Because scholars tend to treat the Stoic theory of *lekta* as an anticipation of Frege's sense, I have preferred to read Deleuze in connection with Frege on these points. Deleuze's relation with Husserl is not the best avenue by which to understand the particularity of his reading of the Stoics.

MEINONG AND THE STOICS

Let's return to the non-being that is, according to Deleuze's reading of the Stoics, associated with sense. The sense-reference distinction Deleuze (and others) attribute to the Stoics is supposed to resonate with the being-existence distinction in Stoic ontology. The Stoic theory of meaning, with its contention that semantic truth values have to do with non-existent *lekta*, depends on being able to say something like "non-being is in a sense." The figure writing in the same period as Frege who was most open to saying this sort of thing is Alexius Meinong.

Deleuze's relation to Meinong is much less ambiguous than his relation to Frege:

Sense is the fourth dimension of the proposition. The Stoics discovered it along with the event The discovery was made a second time in the fourteenth century, in Ockham's school It was made a third time at the end of the nineteenth century, by the great philosopher and logician Meinong. (LS 19)

According to Deleuze, Meinong's discovery is the same as the Stoics'. Meinong re-discovered sense. It's an odd idea, since Meinong doesn't use the Fregean language of "sense" at all. This association of the Stoics and Meinong is compelling, however, to the extent that they are both interested in non-being, and in developing a more comprehensive schema in which being and non-being are both subsets of something more general. Meinong's ambition to produce a theory of objects "as such and in general" (Meinong 1960, 78) goes beyond the opposition between being and non-being, such that one can talk about the properties (*Sosein*) of non-existent objects (Meinong's examples are ideal, mathematical, and contradictory or impossible objects) just as easily as talking about those of existent ones.

Meinong's construal of "object" is more general than Frege's. For Frege an object is a real, actual item in the physical world, related to language and thought by reference—an object is the reference of a name. Meinong develops what you might call an "object stemma" reminiscent of the Stoic ontological stemma. His supreme genus is the object "as such and in general," and it branches into non-existent and existent/real/actual subclasses. What the Stoics call "something" (*ti*), Meinong calls "object" (*Gegenstand*).

Meinong gives some examples of objects that do not exist, and yet about which his science ought to be able to give a good account. For example, "ideal objects" like similarity and difference don't exist (*existieren*) the way garden-variety objects like dogs and cats do, but our ideas and judgments are *about* them, and so, Meinong says, they "subsist" (*bestehen*) under a more general umbrella concept of objects (79). The same goes for the objects of mathematics (Meinong is thinking of geometry), such as straight lines, right angles, and circles. Geometry doesn't usually treat these as actually existing entities. In fact, pure mathematics "never transcends subsistence (*Bestand*)" (80). Nevertheless, the whole endeavor of mathematics—and all of its success—bears witness to the fact that we want to, and can, talk about the qualities, the "such-ness" (*Sosein*) of such objects.

This analysis can even be expanded to objects that *couldn't* be actual since they are selfcontradictory, such as the "round square." Meinong thinks we can still talk about the such-ness of the round square, and so there must be an object (albeit a non-existent one) corresponding to our use of the concept. As he puts it, "the *Sosein* of such an object is not affected by its *Nichtsein*," and so we can coherently say that "the round square is as surely round as it is square" (82). In general, Meinong thinks, statements to the effect that impossible objects *are not* presuppose the general schema of objects: "if I should be able to judge that a certain object is not, then I appear to have had to grasp the Object in some way beforehand, in order to say anything about its non-being" (84). This argument about the necessary preconditions of judgments about non-existence suggests to him that objects possess some kind of reality prior to their existence or non-existence. He calls this "some kind of reality," *Außersein* (roughly, "apart-ness") and advocates "the principle of the indifference to being [*Außersein*] of the pure object" (86). I think it is this principle that Deleuze takes to be equivalent to the Stoic discovery of sense, precisely because it evinces a tolerance toward and an alternative, non-derogatory interpretation of non-being.

That philosophers have often failed to advance to this more general object-scheme (with a couple of exceptions) is attributable, Meinong thinks, to the "prejudice in favor of the actual [*wirklich*]" that characterizes our thinking (78). This prejudice has even made it so that metaphysics, supposedly the most general science, is "not universal enough" in comparison to the theory of objects in general. Just as Frege talks about the natural tendency to presuppose a reference for a name, and seek the reference (truth-value) of a sentence, Meinong talks about our natural tendency to exaggerate the importance of being, or the "actual," and diminish the role of non-being. The difference is that for Meinong this tendency is regrettable, at least for a holistic conception of objects. He offers some considerations about the origin of the tendency. It probably arises out of our practical interests:

The lively interest in reality which is part of our nature tends to favor that exaggeration which finds the non-real a mere nothing—or, more precisely, which finds the non-real to be something for which science has no application at all or at least no application of any worth. (1960, 79)

Like the similarly scientifically-minded Stoics, Meinong seeks a more global, comprehensive account of objects that abstracts away, or brackets, our particular cognitive prejudices to advance to a view of the whole. This is quite unlike Frege's "scientific investigation," which, in striving for truth, makes reference, a supposed relationship between the word and the world, of central theoretical importance.

If the similarities between Meinong's object-stemma and what Frege says about sense are tenuous, then why does Deleuze say that Meinong's theory of objects is a rediscovery of sense? I suspect that this association of Frege and Meinong comes from Bertrand Russell. Deleuze may have been led to connect them by his reading of Hubert Elie's *Le complexe signifiable* (1936) (LS 337), but it could just as well derive from Russell's "On Denoting," which Deleuze refers to obliquely (LS 20). In "On Denoting," Russell simultaneously presents Frege's sense-reference distinction as a response to Meinong's theory of objects as a response to difficulties arising from Frege's sense-reference distinction (484). Both theories seem to arise from and correct the excesses of one another. They are linked in Russell's mind, and consequently in Deleuze's.

Russell says that Frege's theory can respond to and, to Russell's way of thinking, correct Meinong. Meinong admits that "the round square," for example, is a non-existent object with a *Sosein*. But Russell points out that such objects are "apt to infringe the law of contradiction" (483). Describing the such-ness of the round square requires saying that it is round and not-round. This contradictory suchness is, in turn, the symptom of a more general ailment: such objects are supposed simultaneously to exist and not to exist; they have *Sein* and *Nichtsein*. Russell construes this as a problem for Meinong, even though Meinong had tried to defuse it by way of fine discriminations between types of being (*Sosein, existieren, bestehen, Aussersein*, etc.), and he enlists Frege in correcting it; the sense-reference distinction can evade the contradiction involved in non-existent objects. For example, in the case of the non-existent object "the present King of France," we should not say (with Meinong) that it exists and does not exist, but (with Frege) that this is a phrase with a sense but not a reference (483).³²

Russell also says that Meinong's theory can respond to, and again, correct Frege. He diagnoses a difficulty with Frege's sense-reference distinction, precisely in the cases where the objects of reference are absent. If, for example, "the present King of France" refers to no (existing) object, then the sentence "The present King of France is bald" should be nonsensical. But clearly it

³² Russell even recommended this Fregean approach to phrases apparently referring to non-existent objects in a letter to Meinong written in December of 1904 (Kremer 1994, 276).

is not nonsensical. There are least two options for explaining why not. First, there's Meinong's answer: the sentence is not nonsensical when placed in a general scheme that admits non-existent objects and denies that they obey the law of non-contradiction. Second, there is Russell's answer: "abandon the view that the denotation [reference] is what is concerned in propositions which contain denoting phrases" (484). On this view, a denoting phrase is not like what Frege called a "name." It is *essentially* a part of a more elaborate sentence (that also includes a statement of identity) and "does not, like most single words, have any significance on its own account" (488). Of course, Russell advocates his own solution to the difficulties raised by Frege's theory, but he does present Meinong's theory as a potential response to it (however problematic it might be).

Russell also criticizes both Meinong and Frege. To Meinong, he responds that not every phrase refers to an object, and so the "universal" theory of objects is ontologically promiscuous (besides being cavalier about contradiction). Specifically, it relies on unanalyzed assumptions about the superficial grammar of sentences, as if every denoting phrase were equivalent to a name and had a corresponding object, when in fact the superficial grammar is often misleading about what a sentence is actually saying (as Russell shows by paraphrasing denoting phrases as definite descriptions involving identity statements).

Russell's response to Frege is much more difficult to grasp. Much ink has been spilt trying to understand the arguments in "On Denoting," such as the famous "Gray's Elegy argument" (e.g., Blackburn and Code 1978, Pakaluk 1993, Kremer 1994). Some have even doubted that Frege is the target of the argument, and concluded that the criticisms are directed at Russell's own earlier views about denoting phrases (Hylton 2010). At any rate, Deleuze characterizes Russell's response to Meinong as the denial that we need to countenance sense. So it's likely that he also interprets Russell's arguments (along with traditional readers of "On Denoting") as directed against Frege's theory of sense. Despite the opacity of Russell's arguments, their upshot is at least clear: assuming that denoting phrases have both sense and reference leads to "rather curious difficulties" which are "sufficient to prove that the theory which leads to [them] must be wrong" (Russell 1905, 485). For Russell, the upshot of the difficulties is: junk the sense-reference distinction and do without sense (487, 488).

Deleuze says that just as sense—*qua* genetic element, or the "truth" of the problem—was rediscovered a number of times in the history of philosophy, so also philosophical controversies have repeatedly flared up over the question of whether the discovery is a genuine one or whether sense is really required to explain thinking. As I read Deleuze, he is saying that "On Denoting"

crystalizes one such controversy: "Russell against Meinong" (LS 20). Now I can answer the initial question of why Deleuze invokes Meinong in relation to "sense." I think Deleuze conflates the two lines of criticism in Russell's essay. Russell says we don't need Meinong's promiscuous objects and we don't need Frege's sense. Deleuze is, in reality, more committed to the former than the latter, but he adopts Frege's word "sense" and his way of talking about "objects" rather than Meinong's. Why? At least some of the explanation must be chalked up to terminological idiosyncrasy. However, I think that Deleuze is standing on solid ground in appropriating Frege's concept of sense to his cause to the extent that for Frege there are always indefinitely many senses for a given reference. Deleuze wants to say that the excessiveness of sense (which Frege wanted to curtail, at least in scientific language) was what the Stoics recognized in their theory of events, and the relations among events embodied in Stoic theories of fate and astrology.

Russell's criticisms of Frege and Meinong in "On Denoting" justify Deleuze's elision of their respective theories of sense and pure object. Frege's Sinn and Meinong's Außersein are ways of talking about what Frege calls (much later) the "third realm" required in thinking about language, neither subjective nor objective but supplementary to that apparently exhaustive duality (Frege 1956, 302). This "third realm" is neither identical with the realm of representation nor the realm of the things represented. I think Deleuze embraces this realm and thinks of it as a genetic precondition of the other two. He remarks: "it is difficult to respond to those who wish to be satisfied with words, things, images, and ideas [in other words, the first two realms]. For we may not even say that sense exists either in things or in the mind; it has neither physical nor mental existence" (LS 20). Deleuze thinks we must talk about sense, we must admit it, somehow, into our philosophy. (I will look at Deleuze's arguments for this position below.) Compare Russell's 1904 letter to Frege. Frege had claimed that Mont Blanc, the object ("with its snowfields"), is not a component of a thought about Mont Blanc (that it is 4000 metres high). Russell responds by insisting that, in fact, the object is a component of the thought, however strange that sounds. This remark is usually interpreted as Russell's refusal to acknowledge Frege's "third realm." A thought is just a psychological matter, and whatever we assert in a proposition has something objective to it—if need be, the object itself. As Michael Kremer reads it, Russell is saying to Frege: there's only subjective thoughts and objective propositions, no objective thoughts or senses, tertium non datur

(Kremer 1994, 256; cf. Hylton 2010, 513-14). It is very likely that Russell wants to close the door on potential skeptical or idealist implications of a view such as this.³³

Deleuze does not say a "third realm," he says a "fourth dimension" of the proposition (LS 17). This is the dimension required in order to tell the kind of genetic story he wants to tell. Deleuze thinks that while Meinong and Frege discover (or rediscover) it, the Stoics had already known. In fact they went farther than the fin-de-siècle Austrians, in that the Stoic theory of fate/events is a way of talking about the productivity or generativity of that third realm.

I argued that if the Stoic theory of meaning is "fundamentally nonreferential," then it is not especially Fregean. It is, however, recognizably Meinongian. Caston, for example, compares the Stoic marked and unmarked senses of "to be" with Meinong's subsistence/existence (bestehen/existieren) distinction (Caston 1999, 152-54). Long and Sedley (HP I. 164) also make this comparison. Meinong's defense of non-existent intentional objects looks like a modern return to the Stoic doctrine of incorporeal *lekta*, in the sense that Meinongian pure objects enjoy "independence from being of any kind" (Caston 1999, 153). If Stoic lekta and Meinongian objects are similar, then the idea that incorpore is are not merely dependent or subordinate to actually existent bodies finds support in this comparison. Caston correctly points out that the keystone of Meinong's theory is not simply the positing of non-existent objects but the idea that non-existent objects possess "certain attributes or characteristics, even if they lack being entirely" (Caston 1999, 153). The relationships among non-existent *Soseins*, among these attributes themselves (katégorémata), are the relations of senses among themselves, relations that are crucially independent of reference. To the extent that the four canonical Stoic incorporeals "are all abstract objects" of a kind that would make sense to Meinong, Caston suggests that the Stoics are "true Meinongians" avant la lettre (154).

STOIC AND ARISTOTELIAN THEORIES OF MEANING

A comparison of the Stoic and Aristotelian theories of meaning may make things clearer. One of the stranger aspects of the Stoic approach to language is the idea that there is a natural or intrinsic connection between utterances and what they signify.³⁴ As Frede puts it, in the old controversy about language and convention, the Stoics take the side of Cratylus himself—that of

³³ Hylton 2010, 517-18. On the connection between Frege and Meinong, see also Dummett 1993, 22-5, who claims that accepting either Frege's sense or Meinong's pure object requires accepting the "philosophical mythology" of a third realm that is neither subjective nor objective (25).

³⁴ Origen, Contra Celsum 1. 24 (= HP §32J); Frede 1978, 333; Lloyd 1971, 60.

linguistic naturalism (Frede 1978, 333). Commentators have noted that the natural connection posited by the Stoics between utterance and *sêmainomenon* is a "flat contradiction" of Aristotle's conventionalist theory of meaning (Lloyd 1971, 60). Let's examine precisely why. Recall that three things, two corporeal and one incorporeal, are involved in a meaningful Stoic statement:

- [1] the utterance (*phônê*)
- [2] the referent (*tunkhanon*)
- [3] the meaning (*sêmainomenon*) (which is a *lekton* for the Stoics).

Aristotle also recognizes these three components of a linguistic statement (or ones that are relevantly similar). For Aristotle, the relationship between [1] and [3] (like that between [1] and [2]) is not natural but conventional. This conventionality, however, makes it possible for the relation between [2] and [3], in accordance with onto-logic, to be natural and inevitable:

Just as written marks are not the same for all men, neither are spoken sounds [*phônai*]. But of what these are in the first place signs [*sêmeia*]—that is, affections of the soul [*pathêmata tês psukhês*]—these are the same for all; and what these affections are likenesses of—actual things [*pragmata*]—are also the same. (Aristotle, *De int.* 16a5-8, trans. Ackrill, modified)

Aristotle claims that utterances are signs of "affections of the soul," *pathêmata* rather than *lekta*, which are in turn likenesses (*homoiômata*) of actually existing things. The meaning of an utterance is an affection of the soul (or a thought), and such affections are related by a kind of pictorial correspondence with actual things. In this it is hard not to see here the outline of Aristotle's theory of perception, which he defines as an affection of the soul arising from something "outside" it and "stamping" it with the same form, like a signet-ring impressing wax (DA 416b34, 424a16-7). Aristotle implies that "all men" are sensibly affected in the same way by the same external existent bodies, or that the sensory "assimilation" with which perceptual objects effect perceivers is the same for all: "Having been affected" by a sense-object, Aristotle says, the perceiver "has been likened and is such as it [*peponthos d'hômoiôtai kai estin hoion ekeino*]" (DA 418a5-6; cf. Lorenz 2007). In contrast, for the Stoics the relation between [1] and [3], utterance and *lekton*, is natural rather than conventional, leaving the relationship between [2] and [3], referent (in the sense of body) and *lekton*, unspecified (Lloyd 1971, 65; Frede 1978, 323).

If, as some critics have claimed, the difference between Aristotelian and Stoic theories of meaning lies in Aristotle's failure to appreciate the distinction between sense and reference (Lloyd 1971, 65; Long 1971a, 79), then this difference might imply that the Aristotelian theory of meaning is wedded to the conception of an ontological basis for truth and the Stoic theory is not. That appears to be Graeser's view. He concludes his paper by provocatively asserting that for the Stoics

to the extent that *lekta* subsist on thought there is "no isomorphic correlation between thought and the one hand and things-that-are on the other," and contrasts this view with Aristotle's "realist theory of meaning," in other words, what I've called the ontological theory of truth, according to which truth requires the sameness of what is and what is said (Graeser 1978, 98).

This should also, I think, be the view that Deleuze sympathizes with. Just as in Aristotle the arbitrariness of the relationship between utterance and meaning presupposes the similarity between affections of the soul and what actually exists, so in an inverted way in Stoicism the natural relationship between utterance and *lekton* causes the divergence between *lekton* and actual existence, between meaning and reference. The *lekton* cannot be said to exist, nor to be a likeness of what does exist; it is even necessary to say that the *lekton* is crucially independent of what exists. Once you've separated your theory of meaning from simple denotation and freed up sense such that (like "true Meinongians") you can attribute predicates to objects totally independent of concrete existence, then the relation between "what is said" and "what exists" becomes radically attenuated. Perhaps the two even become detached. While the metaphysical theory of truth as correspondence relies on reference, the "truth" of problems has to do with the independence of sense. One might say that in Aristotle corporeal referents are subjected to conditions of *convergence* with thought and meaning by means of the arbitrariness of the signifier, whereas among the Stoics, in virtue of their naturalism about the connection between *lekta* and *phônai*, meaning and existence are free to *diverge*.

It would be a stretch, however, to say that Aristotelian semantics weds meaning to ontologic and the Stoic theory does not. In fact, the evidence suggests that for the Stoics the truth-value of *lekta* is probably contingent on a special, privileged relation to the world—something like correspondence or reference. This much is implied laconically by Diogenes Laertius in his epitome of Stoic logic: "Someone who says 'It is day' seems to propose that it is day. If, then, it is day the proposition comes out as true, but if not, it comes out as false" (D.L. 7. 65 = HP §34E). Sextus spells out the onto-logical foundation of Stoic semantics more explicitly:

They [the Stoics] say that a true proposition is that which is [*ho huparkhei*] and is contradictory to something, and a falsehood is that which is not and is contradictory to something. But when they are asked about what 'that which is' is, they say that which activates a comprehensive impression [*phantasia katalêptikê*]. And then, when examined concerning the comprehensive impression, they again retreat to 'that which is' ... saying that a comprehensive impression has its source in that which is, in conformity with the very thing that is. (*M.* 8. 85-6 = HP §34D)

Although Sextus says "*ho huparchei*" and does not use the typically Platonic-Aristotelian word "*to* on" to express what exists, nevertheless he makes the Stoics sound quite Aristotelian in linking the true to "that which is" and the false to "that which is not." This quotation further specifies that the special relation between propositions and being (between thought/language and reality), which I have been thinking of as correspondence or at least reference, has a technical name in Stoicism: not *ptôsis* (as Long would have it) but *katalêpsis*, the "grasp" of the comprehensive/apprehensible impression. Sextus complains that the Stoic account of correspondence with being is disappointingly circular.

So the Stoic theory of meaning reveals itself to be not as "fundamentally nonreferential" as Graeser would like. It reiterates an epistemological grounding of truth that is, I think, basically onto-logical. However, Deleuze wants to diminish this dimension of Stoicism (which he is aware of). Here Deleuze's reading "maximally modifies" his mediators, making the Stoics like a "philosophically bearded" Hegel (DR xxi). Deleuze wants to underscore the divergence between Stoic and Aristotelian semantics to the extent that the Stoics anticipate the view that there needs to be some "third realm" to explain the genesis of meaning. Deleuze's Stoics think, in contrast to Aristotle, that you need more than just thoughts and things, more than just the subjective and objective dimensions. As the commentator Ammonius realizes, non-existent *lekta* are "something else in addition" to representations and things, something supplementary to the Aristotelian ontological picture (*In De Int.* 17, 24-8 = HP §33N). This isn't to deny that the Stoics' theory of truth, or their theory of meaning (which ultimately depends on a classical conception of truth) is ontological. It's only to say that this "something else" is not part of the onto-logical theory of truth. You can have such a theory of truth without it, but the Stoics defend it anyway.

Deleuze's reading of the Stoic theory of meaning divorces it from the onto-logic to which the doctrine of *katalêpsis* ultimately weds it. I will argue below, however, that what he *does* with the Stoic theory of *lekta* (which he calls the Stoic discovery of sense), in linking it to their doctrines of causality and astronomy, is very well supported. (I will also discuss Deleuze's criticisms of *katalêpsis* below, in the context of his views about the Stoic Sage.)

To sum up my argument in the last three sections: Deleuze says the Stoics discovered "sense." Sense, for Deleuze, means the "truth" of problems, rather than the truth of propositions, typically understood in terms of correspondence. I think Deleuze says "sense" to contrast what he wants to talk about with the way that, classically, truth as correspondence or accurate representation has been associated with *reference*, sense's contrast class. Like Davidson, Deleuze

thinks reference is hopeless as an explanation of the mysterious relation of correspondence, picturing, adequation that sustains classical truth. Rather, he wants to tell a genetic story that explains reference itself.

Linking Stoic semantics and sense invites the question: how much do these semantics depend on reference? Graeser thinks, not at all. If so, then is it helpful to think of Stoic semantics as basically Fregean? Examining Frege's own explanations of the sense-reference distinction suggests not. Frege considers reference a fundamental and natural desideratum of our way of thinking, and he links it to truth, blurring the line between a metaphysical theory of truth and a theory of the meaning of propositions by saying that the reference of a sentence is its truth-value. I suggested that Stoic semantics, involving non-existent *lekta*, are more Meinongian than Fregean. The parallel between Meinong's theory of objects and the Stoic ontological stemma is well established. Why then does Deleuze link "sense" and Meinong's object stemma? I think the answer is because of Russell, who criticized them both. Meinong, Frege and the Stoics all countenance a "third realm" or what Deleuze calls a "fourth dimension" of the proposition. In the Stoics, this is the realm of non-existent *lekta* or incorporeal events. When Deleuze says the Stoics discovered "sense," he means to refer to that. Deleuze's idea is that this "third realm" plays a productive role with respect to the other two realms. The other two realms require sense (or events) as their precondition. Investigating how he thinks such productivity works will occupy the latter part of this chapter.

Finally, I conceded that the Stoic theory of meaning is not, as Graeser and Deleuze would like, fundamentally nonreferential. It is grounded, in the final analysis, on a traditional-looking theory of the correspondence between thought and reality: the doctrine of *katalêpsis*. Deleuze suppresses this doctrine at first and criticizes it later. In fact, I think the doctrine motivates Deleuze's glib criticism that you can only go so far with your genetic story using the Stoics' conceptual resources.

DELEUZE ON PROPOSITIONS

Following Russell again (1950, 166-7), Deleuze claims that propositions are characterized by at least three relations: first, denotation, or reference, "the relation of a proposition to an external state of affairs" (LS 12); second, what Deleuze calls manifestation, "the relation of the proposition to the person who speaks" (LS 13); and third, signification, the relation of the proposition "to universal or general concepts" (LS 14). The first and third aspects of the proposition were wellestablished as concerns of ancient Greek philosophy while the second is a more modern fixation.

Deleuze thinks that these three dimensions reciprocally require and imply one another, as a proposition carries us from one to the other and back in a kind of hermeneutical circle (LS 16-7). We can grasp what Deleuze means by interpreting his claim that the native "elements" of denotation are truth and falsity (LS 13), and that the value of signification lies in its establishing, by means of "the hypothetical mode of implications," the "condition of truth" (LS 14). Deleuze appeals to the traditional metaphysical interpretation of truth as correspondence with a state of affairs. The function of denotation, on this understanding, is almost entirely deictic; denoting words are no more than "designators" or "indexicals." As Deleuze puts it, "True' signifies that a denotation is effectively filled by the state of affairs or that the indexicals are 'realized'" (LS 13). On this basis, Deleuze points out, it is strictly speaking false to say that signification—the relation of the proposition to concepts—is concerned with truth or falsity at all. Rather signification deals with the *conditions* of truth; it does not say what is or is not true, but what would have to be the case in order for a proposition to be accepted as true. What Deleuze calls "signification" is about assigning truth-values to propositions on the basis of understanding what concepts do or do not imply. Deleuze makes the point in terms of understanding what would be required of an antecedent or implied of a consequent in a hypothetical relation between propositions ("the hypothetical mode of implications"). Take a Stoic conditional syllogism:

If it is day, then it is light. It is day. Therefore, it is light. (S.E. *PH* 2. 136-7)

There is a difference, Deleuze thinks, between the way the conclusion follows from the premises in order to be accepted as true and the way a deictic denotation can be true or false. The implication asserted in the third line, Deleuze says, is like "the moment the promise [in the first line] is effectively kept" (LS 14). If the argument were an enthymeme, and just ran "It is day, therefore it is light," you'd have to know the relation between the proposition "It is day" and the concept "day" to make sense of it. If you understand this relation properly, you understand that the conclusion is implied. That's what Deleuze means by signification.

I think Deleuze getting this conception of signification from Frege. In Frege, recall, sense and truth-value are "strangely detached": the sense of a sentence, the thought it expresses, can be altered (for example, by the replacement of words) without its truth-value being altered. Nevertheless, for Frege, sense is a necessary condition of truth; a sentence with no sense—a sentence that doesn't express a thought—cannot be true (or false). It will not refer to a truth-value (even if its component signs taken alone do refer to objects). One can think of many examples, but let Russell's "Quadruplicity drinks procrastination" serve (Russell 1950, 177). The sentence has no signification because if you understand the concepts involved, you *fail* to understand the sentence. However, what Frege calls sense is not a *sufficient* condition of truth (or falsity), as the example of a perfectly sensible but fictional sentence about Odysseus shows. If when Deleuze says "signification" he means what Frege calls "sense" (as Voss thinks), then his criticisms of signification make sense in the context of what I've said about Frege. The relationship between conditionality and truth-value in signification, for Deleuze, entails that, if any argument as a whole is to be either true or false, at some point it will have to admit of being expanded in order to include a deictic (and therefore denotative) premise (like "It is day"). Whether or not a relationship of implication obtains between one proposition and another, by means of the general concepts (established in the construction of conditions of truth), will depend in some measure on denotation, the deictic warranty of at least one proposition's truth. Similarly, the truth of a denotation can only effectively exercise any influence by means of conceptually mediated relationships like implication. As Deleuze says, these aspects of the proposition reciprocally require one another. And this is very similar to what Frege said: we naturally seek reference. Sense and reference work together, but the buck stops with reference.³⁵

Deleuze asks whether sense can be "localized" in one of the three other dimensions of the proposition, or whether it should be added as a *fourth* dimension (LS 17, 19-20). If it cannot be localized, then it is something different from denotation and conceptuality. "Signification" appears to be the strongest candidate for a dimension of the proposition to which what Deleuze calls sense could be reduced. The main objection to equating sense with signification is the latter's circular, mutually implying, relationship with denotation. That means in order to keep sense distinct from reference, sense cannot be identified with significance. Furthermore, even though every argument must include at least one deictic premise in order to be sound, the truth of the conclusion to such an argument can only be acclaimed on the basis of an indefinite regressive expansion of the number of

³⁵ As I understand her, Voss infers from these considerations that Deleuze wants to put sense to work as a *better condition of truth* than signification (2013, 5), as if Deleuze wanted sense to give a *sufficient* condition of truth, not just a necessary one. I think this is wrong. Deleuze equates sense with the "truth" of problems, which is not at all the same as the metaphysical theory of truth or the semantic theory of truth-value. Voss may have been misled by the word "truth," which Deleuze uses indifferently to indicate metaphysical truth, semantic truth-value and the "truth" of problems. I have tried to disambiguate by designating Deleuze's notion of the "truth" of problems with quotation marks, to imply that it is basically a stipulated use of the word.

premises, what Deleuze calls "Carroll's paradox" (LS 16).³⁶ Deleuze concludes that signification by means of general concepts "can never exercise its role as last foundation" but always in fact entails regresses (LS 18). This fact suggests to Deleuze that signification and denotation working together are not in fact primitive, despite their pretentions to be, but that they depend on something else that generates them. In this case, it is a regress. Deleuze thinks the regresses, like "Carroll's paradox," are themselves more primitive than references and general concepts. Sense is something like a regress, even in Frege, to the extent that in a natural language, an indefinite number of senses proliferate given a finite number of references.

How true to the Stoics is Deleuze being in arguing that sense is something different from signification, i.e., conceptual entailment? Recall Diogenes Laertius' report that Stoic dialectic contains a subtopic "about the signified [sêmaimomenon]," which is further divided into the topic about (rational) presentations and the topic about *lekta* subsisting in relation to them (D.L. 7, 43). For Deleuze this hierarchic distinction between *lekta* and rational presentations is enough to imply that the Stoic theory of incorporeal *lekta* (or of sense) appeals to a "third realm," which is not only non-existent but also distinct from the classical duality of word and world, representations and things represented, which a theory of reference is supposed to bridge. A lekton is "neither word nor body, neither sensible representation nor rational representation" (LS 19). Distinguishing sense from signification, I take it, requires separating *lekta* from rational representations (*phantasiai logikai*: D. L. 7. 63; S.E. M 8. 70)—whatever those are. Deleuze may be relying on a passage in Diogenes Laertius (reporting the views of Diocles of Mangesia) to the effect that there are both sensory and non-sensory impressions (phantasiai) and that non-sensory ones are "obtained through thought," for example, impressions "of the incorporeal and of the other things acquired by reason" (D. L. 7. 51). Here impressions of incorporeals (presumably including *lekta*) are classed among rational impressions. Is this trouble for Deleuze's assumption that *lekta* are distinct from rational

³⁶ After Lewis Carroll's argument in 'What the Tortoise Said to Achilles': asserting the truth of the conclusion to even a seemingly unproblematic implication requires constantly renewing the argument with extra premises (Gratton 2010, 38-43):

E.g. [1] If it is day, it is light.

^[2] It is day.

^[3] If [1] and [2], then it is light.

^[4] If [1] and [2] and [3], then it is light.

^{...} etc.

 $^{[\}infty]$ Therefore, it is light.

If Carroll's argument is interpreted as being about how the very idea of "logical implication" can't itself be explained in terms of logical implication (except at the price of an infinite regress), then we can think of Deleuze's investigation into what he calls the "conditions of truth" a similar inquiry into the foundations of logic.

impressions? Deleuze relies on Bréhier explicitly here (LS 19 n. 9), who points out an ambiguity in the Stoic theory. The Stoics do not say that *lekta* are identical to rational impressions, but are a class of them (Bréhier 1928, 18). Some objects of reason are not *lekta*: for example, the Stoics think thoughts and qualities are both rational objects and kinds of bodies. Bréhier infers that there are good reasons not to conclude that any object of reason is a *lekton*. Some rational entities are existents (bodies) and some are not.

Zeno's claim that concepts (*ennoiai*) are "neither something existent nor qualified [*oute ti* on oute poion] but something as if existent and as if qualified [ôsanei de ti on kai ôsanei poion]" (D.L. 7.61) supports this point. Stoic concepts are non-existent rational entities, consequently distinct from "thoughts" (which are existent bodies). The latter part of Zeno's claim hints also that he thinks concepts can do (some of) the work that interpretations of concepts as existent, such as Platonic ideas and Aristotelian universals, do, without committing the Stoics to exceptionable incorporeal causal agencies.³⁷ It is, however, controversial to say that Stoic concepts are incorporeals or that their theory of concepts is an appendix to the theory of *lekta*. Diogenes Laertius claims that the way non-sensible presentations come through the intellect is typical of the "presentations of incorporeals" (D.L. 7.51), and thus seems to say that the way incorporeal *lekta* are presented to the intellect is also characteristic of the way that concepts appear. Whether they are, therefore, incorporeal is unclear. Against the identification of *lekta* and concepts, Simplicius explicitly distinguishes concepts from *katêgorêmata* (*In Cat.* 209, 10-4). Sedley (1985) accepts this text as a proof that concepts are not incorporeals, even though he admits that Simplicius is not reporting the views of Stoics but of Academics influenced by Stoicism.

So Bréhier's argument, which Deleuze picks up on, is that if *lekta* were just identical with rational entities, then all rational entities would be *lekta*. But *lekta* are incorporeals and not all rational entities are incorporeals (e.g., thoughts are not). Therefore, *lekta* are not identical to rational entities. Some of the latter are *lekta* and some are not. Whatever the best interpretation of the ambiguities about concepts in Stoicism, it does appear that incorporeal *lekta* (which Deleuze assimilates to his theory of sense) are distinct from (at least some) rational representations. Deleuze's distinction between signification and sense is just a version of this distinction germane to Stoicism.

³⁷ This is Caston's argument (1999). He contrasts this Stoic view about concepts with the Platonic conception of ideas as both explanatory and substantial. As Caston puts it, the Stoics are "eliminativist," rather than "reductivist," about Platonic Forms (1999, 147). That is, they don't simply identify what Plato had called Form (*idea*) with what they call thoughts or concepts. Rather Stoic thoughts or concepts, appearances with attendant subsistent *lekta*, are meant to replace Platonic Forms by making the latter unnecessary (177).

Here is another way of saying that sense cannot be identified with signification which Deleuze licenses: signification is not primitive, generative or explanatory (the way that Deleuze wants sense to be) because it describes a theory of possibility. To the extent that signification is concerned not so much with truth and falsity as such, but with their conditions, it is concerned with the possibility of propositions being true. Thinking about conceptual implication means "rising from the conditioned to the condition, in order to think the condition of the condition as the simple possibility of the conditioned" (LS 18). Deleuze thinks, however, that rising to the conditions of possibility of truth in this way has limited value. In fact, he worries that trying to ground sense in signification would actually give a defective and *unreal* picture of the proposition. Just as, in Difference and Repetition, Deleuze criticizes Kant for subordinating his account of human experience to the "hypothetical form of possible experience" (DR 196), in *The Logic of Sense*, he criticizes whoever remains satisfied by the closed circle of denotation and signification for investigating no farther than, so to speak, the *hypothetical form of possible truth*. The "truth" of problems is emphatically not something whose appearance is anticipated by being treated as possible before its realization, because the "truth" of problems means their quality of being productive of genuinely new ways of thinking. Deleuze often contrasts "conditions of possibility" with the conditions of the real (DR 68-9, 154). His challenge is to investigate the real conditions of thought (which are problematic), and, in *The Logic of Sense*, this means investigating what lies outside the closed denotative-significant loop, the great Stoic discovery (LS 19).

Deleuze says, "Signification does not establish the [possibility of] truth without also establishing the possibility of error. For this reason, the condition of truth is not opposed to the false, but to the absurd" (LS 14-5). While a true denotation can be opposed to a false one, a signification that properly specifies the conditions of truth should not be opposed to a signification specifying the conditions of the false, but rather to an *absurd* signification, which doesn't specify conditions in a sensible way. I think it's important to recognize that, for Deleuze, what's absurd from the point of view of denotation-signification is precisely *sense* in that it lies outside the closed loop of the other three dimensions of the proposition. Deleuze means I think that one consequence of the distinction between signification-denotation and sense is that sense can relate propositions to one another in a way distinct from conceptual entailment: nothing in "Aristotle is the student of Plato" conceptually implies "Aristotle is the teacher of Alexander," precisely because no conditions of possible truth have been established to join these propositions. Nevertheless, there is a certain, intelligible relationship between the two propositions, which is basically an accident of history, or, in Deleuze's preferred terms, an "event."³⁸

"Absurdity" for Deleuze expresses the relationship between the closed denotationsignification loop and its outside. Deleuze maintains that coming to grips with sense is required for a real (and not just possible) account of the proposition. In order to avoid repeating the gesture of grounding propositions on what is "possible," that is, *conditioned* by conditions of truth, we should be understanding propositions, not on the basis of their conditions, but on the basis of the *unconditioned*:

[In signification-denotation] one is perpetually referred from the conditioned to the condition, and also from the condition to the conditioned. For the condition of truth to avoid this defect, it ought to have an element of its own, distinct from the form of the conditioned. It ought to have *something unconditioned* capable of assuring a real genesis of denotation and of the other dimensions of the proposition. Thus the condition of truth would be defined no longer as the form of conceptual possibility ... no longer as signification, but rather as sense. (LS 19)

Deleuze says here that truth has an "element of its own," namely sense, and then that sense *is* the condition of truth, once truth is divorced from conceptual possibility. As I have pointed out already, in this book Deleuze often transfers the rhetoric of "truth" into the context of talking about the way problems provoke thinking and generate genuine novelty. So I think the word "truth" is being used in two different ways in this passage. The "condition of truth" characteristic of signification (the relation of propositions to general concepts) means the condition in which propositions can be recognized as having a certain truth-value (true or false) on the basis of what we understand about the concepts they invoke. The condition of "truth" characteristic of sense means the conditions under which sense can be really genetic and generate the other dimensions of the proposition. That Deleuze expresses himself here paradoxically or in a self-contradictory way—the condition is the *un*condition—counts as evidence for my interpretation. To avoid the charge of contradiction one can claim equivocation.

³⁸ Jay Lampert has helpfully examined such syntheses among events in terms of Deleuze and Guattari's "philosophy of history." He even accounts for historical events as "quasi-causes" (Lampert 2006, 97-112). Lampert relies a lot on a passage from *Anti-Oedipus*, which describes the "intense becomings, passages and migrations" of a kind of impersonal subjectivity: "(*I feel* that) I am becoming God, I am becoming woman, I was Joan of Arc and I am Heliogabalus and the Great Mongol" (AO 84, 85). Such a conception of history does not simply mean the subjective identification with historical figures, but is a matter of "effects," which are not strictly dependent on causes. The idea is that historical events traverse history: for instance the "Joan of Arc effect" (AO 86; Lampert 2006, 3-4; cf. LS 70 on the "Chrysippus effect"). This appears to be very close to my reading of sense in *The Logic of Sense* as taking over the contingency of historical accident.

Deleuze switches in the midst of the passage from talking about truth in semantic theories of truth-value to the "truth" of problems. In fact, he is much more interested in the latter. If we accept that truth means correspondence with reality or if it is contextualized within a theory about how understanding what is implied by concepts effects the way we say a proposition is either true or false, then we will be misled, Deleuze thinks, about problems. We will probably conclude that problems are inconveniences for thinking and not necessary preconditions of it. We will probably also conclude that problems can't be "true" or "false," because those are qualities of propositions or representations. It may be possible to characterize Deleuze's position this way: that in seeking out the "truth" of problems, he wants to articulate a *real* truth, a truth more true than correspondence or conceptual entailment, freed from its determinations in terms of what is "possible," but only if one bears in mind the equivocity of truth that Deleuze obscures.

Granted that "truth" here means that genetic quality of problems, what is Deleuze's point? He criticizes those who think that the only "element" required to explain thought is the condition of the possible, articulated in terms of signification-denotation. To explain thought really, you need another element whose function is genetic and not just conditional. This element should account for the emergence of conceptual forms of rationality rather than assuming them. Merely "rising from the conditioned to the condition" doesn't do that. I think Deleuze identifies this supplementary element of truth as an "uncondition" because it's problematic, chancy, stochastic, historical, introducing the realm of "events" that Deleuze calls the "encounter" and which supposedly galvanizes thinking (DR 139). One interesting implication of Deleuze's equation of sense and event is that events are not, so to speak, prediscursive or "outside discourse." They are, rather, factors within discourse, which Deleuze calls "quasi-causal" (paradoxes, regresses, vague predicates, "incorporeal transformations" like identifying with a gender). Deleuze's rejection of reference and onto-logic (classical correspondence with being) and its relation to metaphysical truth, in favour of sense and its relation to the "truth" of problems is also a rejection of the false dichotomy of "inside" and "outside" discourse. As I understand it, for Deleuze, "surface" just means the rejection of this dichotomy.

The critical implication of this passage about the "condition of truth" and "something unconditioned" is, however, the suggestion that the unconditioned element of truth really generates the other dimensions of the proposition. That is, far from being mere dependents of denotation, which is itself in turn totally dependent on the existence of bodies to point at, or dependents of

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signification, *lekta* are not only independent but possess a genetic power in relation to the other dimensions to which attempts have been made to reduce them.

According to Deleuze's characterization, the Stoic proposition has two "sides": the side of denotation-signification, on the one hand, and the side of sense, which the former excludes, on the other: "It is like two sides of a mirror, only what is on one side has no resemblance to what is on the other" (LS 25). Unlike the reciprocal relationship between the three Russellian aspects of the proposition, the relationship between the two sides of this surface "is not a circle. It is rather the coexistence of two sides without thickness" (LS 22). I find these characterizations to be apt descriptions of the Stoic theory of *lekta*. The Stoics insist that *lekta* don't resemble bodies. This is their basic philosophical gesture—to divide the world into existent and non-existent things. What is less reminiscent of a being than a non-being? Similarly, the "coexistence" of the two sides of the proposition reappears in Stoicism as the relationship between bodies and the *huphistamena* or *paruphistamena lekta*, Greek terms for which "coexistent" (along with "subsistent") is a common translation.

This surface, as if a mirror located between reference-signification and sense, is equally critical for the Stoics and for Deleuze. Talk of the surface introduces a broadly metaphysical picture—or as Deleuze implies an alternative "image of thought." The metaphysical "surface" or the "boundary" between bodies and *lekta*, lies between two series, two continuously ramified sets of things, one corporeal and one incorporeal. Deleuze's concern is with explaining how these series are distinguished, giving an account of the mechanisms by which they retain their independence. For this reason, he turns to a discussion of paradox.

Deleuze says, just as the denotation-signification "side" of this surface is subject to Carroll's paradox, which prevents it from being able to ground itself, and opens it onto the sense it excludes (LS 16), "Frege's paradox" besets the sense side of the metaphysical surface (LS 29). The indeterminacy of sense, its excessive proliferation and the impossibility of matching senses to references in a one-to-one way, which Frege had considered a drawback of his distinction, is what Deleuze likes most about it. What Deleuze means by Frege's paradox can be summarized as follows: as every name has a sense, the sense of each name has its own name, and so on. So, for example, the name "Aristotle" has a number of senses—to name just one, *author of the Categories*—but each sense of the name must have, in turn, its own name (or names), say, "early Aristotle." But that name also has a number of senses, for instance, *student of Plato, inhabitant of* *Athens*, and so on. Deleuze indicates that this leapfrogging of names and senses proceeds *in infinitum*.³⁹ For Deleuze, this proliferation of names and senses means that:

Sense is always presupposed as soon as I begin to speak ... I never state the sense of what I am saying. But on the other hand, I can always take the sense of what I say as the object of another proposition whose sense in turn, I cannot state. I thus enter into the infinite regress of that which is presupposed (LS 28).

The importance of such regresses is that they constitute the mechanism by which the two series, on either side of the surface, ramify themselves, ensuring their endless divergence. In other words, their role is genetic. In fact, it's by means of these regresses—especially the Fregean regress of sense, that constantly exceeds and eludes attempts to pin sense to an existent body—that the two sides of the metaphysical surface between sense and denotation or existence don't reduce or collapse one into the other; they retain their independence. Moreover, Deleuze says, it's because of such a regress (Frege's Paradox) that sense is presupposed by the conceptual-referential system of which it may seem to be a mere excrescence. Frege's Paradox, in short, shows why sense is a *transcendental and genetic condition* of real experience.

EVENTS AND PARADOXES

The relations among the senses of propositions are important for Deleuze because they are events. The equation of incorporeal *lekta* with events, and the emphasis on the quasi-causality of *lekta*, are the two key facets of Deleuze's interpretation of Stoicism. My discussion so far suggests that Deleuze's reading of Stoicism, far from granting incorporeals a merely ancillary metaphysical function, presents *lekta* as playing a vastly expanded role: their interrelations (in the realm of what Frege called sense) provide the foundation for the Stoic theory of meaning, and they generate the other three dimensions of propositions. Moreover, non-existent *lekta* can tell us about the "truth" of problems rather than the truth of correspondence. Deleuze thinks that Stoic *lekta* can help to explain the conditions of real, as opposed to merely possible experience because real experience is characterized by "encounters" with problems. While rising from the possible to its condition presupposes that the condition is already existent, the real arises from the "unconditioned." The condition of the real is a non-existent condition. Deleuze thinks this is a fundamentally Stoic

³⁹ Deleuze himself illustrates Frege's Paradox by referring to a passage in Carroll's *Through the Looking Glass*, in which the White Knight identifies a certain song for Alice; what the song *is*, he explains, is distinct from what the song is *called*, and equally distinct from the *name* of the song, and from what the *name of the song is called*. Even if Carroll limits himself to a "conventionally finite progression," Deleuze thinks that this insight that names have senses and that senses have names in turn (etc. etc.) can be prolonged into the same infinite regress implicit in Frege (LS 29).

discovery because the Stoics held fast to the doctrine that *lekta* are not existent, but quasi-existent (or "subsistent").

Deleuze thus reads the Stoics as offering a very ambitious metaphysical story about how the parallel series of bodies and propositions are generated by means of *lekta*. As Boeri also claims, neither series is anterior to the other *simpliciter*. But how are they generated, by what mechanisms specifically? Deleuze indicates that the genesis of both series is at stake when Chrysippus propounds a sophism:

- [1] If you say something, it passes through your lips.
- [2] You say chariot.
- [3] So it seems a chariot passes through your lips. (D.L. 7.187; LS 8, 134)

Let's take a closer look at this argument. It is immediately preceded in Diogenes by the more famous "No one" (oudeis) argument. Commentators often interpret the "No one" argument as being designed to expose the assumptions of Chrysippus' philosophical opponents. The *oudeis* argument runs: "If someone [tis] is in Megara, then he is not in Athens. Man is in Megara. Therefore, man is not in Athens." The conclusion is meant to appear patently false, which shows that a certain way of thinking about generic entities is wrong. Chrysippus is interpreted as underscoring the difference between specious generic entities (like "man" in general) and somethings (tina), in order to trap Platonists (or whoever believes in substantial concepts) into accepting a ridiculous conclusion by way of acceptable-looking premises. Importantly, the ambiguity this sophism exploits is, then, the implied equation between "man" and "something." It is likely that the "chariot" argument does something similar. Like the "no one" argument, it is a play on the ambiguity of *tis*, "something" ("If you say *something* [*ei ti laleis*] ..."), and thus evokes the ontological stemma. Not every thing, Chrysippus insinuates, is actually sayable. A chariot is a body, and so a something, but not a *sayable* something. Premise [1] would not be acceptable to a Stoic, since the something that is said (a *lekton*) does not "pass through lips," if passing through lips is taken to be thing only bodies do. The argument will therefore embarrass only philosophers who have insufficiently distinguished bodies from *lekta*. As Deleuze puts it, "everything happens at the boundary between things and propositions" (LS 8). Grasping what is sophistical about the sophism requires understanding that something is prior to both beings and non-beings. Deleuze takes the chariot argument to reveal that the fundamental focus of Stoicism is on what he calls "surface," the genetic borderland between the sense of inexistent objects and the denotation of signifying bodies or beings.

Another way of putting it is that, for Deleuze, the chariot argument is not simply false but absurd. It was intended as such by the Stoics, thus indicating the relationship between the two sides of the surface (denotation-signification and sense) to be their true focus. The chariot argument highlights the limits of the search for the condition of truth by the method of rising to conceptual conditions; it shows how signification leads to impasses unless the bodies/incorporeal distinction is observed. Here sense is not artificially shoehorned into the circular economy of denotationsignification, but revealed as its necessary (unconditioned) element. Deleuze calls indicators of absurdity, which signal the exteriority or independence of the two sides of the metaphysical surface, "paradoxes."

Deleuze refers to Russell's celebrated paradox as another example of a situation where the relations of conceptual conditionality become self-contradictory and incoherent. Russell's paradox arises when considering the set of all sets that don't contain themselves as members, and then asking whether that set contains itself or not. Deleuze refers to the "barber of the regiment" illustration of the paradox (LS 74): if the barber is defined as the person shaving all men who do not shave themselves, then when it comes to shaving himself, the barber belongs to the set of men who do not shave themselves but are shaved by the barber only on the condition that he does not belong to that set, since he is shaved by the barber, but he does shave himself. Such a paradoxical figure arises from contradictions inherent in the self-reference or self-inclusion of sets. Deleuze thinks signification-denotation really does have serious limitations and drawbacks, of which this paradox is evidence, and so he criticizes Russell's solution to his eponymous paradox in the "Theory of Types" (Russell 1905, §497-500). Russell solves the paradox by avoiding it, establishing rules for formulating propositions about sets which, when obeyed, guarantee that the paradox doesn't arise. He hierarchizes "types" of sets on different levels-terms, classes of terms, classes of classes, etc.—and claims that the paradox results when entities are invented whose existence relies on the confusion of two or more of these levels (Russell 1903, §106 ¶5; cf. Quine 1938, 129). Given restrictions like these, sets that include themselves as members are not well formed and are excluded from the universe of discourse.

Deleuze interprets Russell's solution as forbidding the *existence* of paradoxical entities in order to get rid of paradoxes (LS 74). This strategy is insufficient because, as the Stoics have already demonstrated, the *existence* of paradoxical entities is not at issue. They were not seriously suggesting that chariots pass through people's lips. Rather, paradoxical entities insist or inhere in language as non-existent conditions of signification and denotation. According to Deleuze, this is

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what the Stoics discovered and Russell just confirms it. For Deleuze, following Chrysippus, it is perfectly possible to deny that paradoxes exist (in the full-blooded sense) without thereby "getting rid" of them:

We cannot get rid of paradoxes by saying that the barber of the regiment does not exist ... For paradoxes, on the contrary, inhere in language, and the whole problem is to know whether language would be able to function without bringing about the insistence of such entities. (LS 74)

Paradoxical instances (the things about which paradoxes speak) should be understood to "subsist" or "supervene" in the manner of *lekta*. Deleuze implies that because Russell attempts to solve his paradox in a way that doesn't heed the distinction between bodies and *lekta* (or events), he accepts a certain image of thought that blocks the sort of genetic account Deleuze wants: in this image of thought, "thought is a simple act, clear unto itself, and not putting into play all the powers of the unconscious [of which Deleuze later says paradox is the "force"], or all the powers of nonsense in the unconscious" (LS 74, 80). While Russell's ideal of thought would get rid of paradoxes along with "nonsense" (cf. Russell 1950, 166-9), Deleuze argues that paradox and nonsense are ineliminable, much as the Stoics, for all their corporealism, said that the incorporeal is ineliminable, and even a condition on bodies. Language does not work without such paradoxical instances, even though they do not exist: an eminently Stoic thought.

Deleuze also thinks that the "absurdity" involved in paradoxes, the fact that they refer us to the productive conditions of bodies on the one hand and signification-denotation on the other, does not derive from their contradictoriness. This means that, in contrast to Aristotle, he thinks contradiction is not a good guide to what's fundamental or most general (cf. *Met.* 1006a10–11). Instead, Aristotle's law of non-contradiction has only a relative and not the most general applicability. Paradoxical instances give hints of what lies beyond the region of thought where non-contradiction holds sway. The desire to "get rid" of paradoxes expresses a desire to remain among significations and denotations already generated. It's no use "invok[ing] the contradictory character" of instances like the barber of the regiment to justify getting rid of them, since this strategy remains on one side of the metaphysical surface, rather than in the midst of the productive simmer at the surface itself. Contradiction is a property of significations, conditions of truth, or possibilities.

The force of paradoxes is that they are not contradictory; they rather allow us to be present at the genesis of contradiction. The principle of contradiction is applicable to the real and the possible, but not to the impossible from which it derives, that is to paradoxes or rather to what paradoxes represent [i.e. "paradoxical instances"]. (LS 74-5)

In that they provide glimpses of the productivity of what Deleuze calls the metaphysical surface, paradoxes, like regresses, are evidence that neither series, neither denotation-signification nor sense, neither bodies nor *lekta*, is capable of grounding itself, that is, capable of abiding without the other or being reduced to the other. Thus paradoxes persist on both "sides" of the surface, which maintain their distinctness (LS 75).

There seems, however, to be a difficulty for Deleuze here, as long as he wants to keep the Stoics as conceptual allies. His ambition of surpassing contradiction looks to be at odds with the commitments of ancient Stoicism. Chrysippus was intensely committed to the principle that every proposition (*axiôma*) is either true or false, the so-called law of excluded middle complementary to the law of non-contradiction.⁴⁰ Wouldn't he reject Deleuze's picture of an originary nonsensical surface generating paradoxes that are neither true nor false? In fact, Chrysippus was so committed to bivalence that he held it to apply in the case of the *sorites* or "heap" paradox, even when arguments about indefinite predicates (like being a heap) generate ostensibly false conclusions (e.g. "10,000 grains is not a heap") from true premises (Cicero, *Acad.* 2.93-5; S.E. *PH* 2.253).⁴¹ Chrysippus must be committed to saying that every proposition using vague predicates has a truth-value, even if it seems impossible to say at every point in the *sorites* what that value is. Unnerved, he infamously held that at a certain point in the progression of a *sorites* paradox the sagest strategy is to stop counting and fall silent (*Acad.* 2. 93; S.E. *M* 7.416; Plutarch, *Adv. Col.* 1124a).

Here again, however, Deleuze sees Chrysippus tacitly admitting the priority of nonsense. Sextus saw in Chrysippus's silence a concession to skepticism: if it's not possible to say whether intermediate *sorites* conclusions are true or false, then Chrysippus concedes it would be wrong to assent to a vague impression (S.E. *M* 7.417-21). Deleuze, on the other hand, interprets Chrysippus's advice as evidence of the way the series of being and language are "animated by the paradoxical element," or the way "nonsense has an internal and original relation to sense" (LS 81). Chrysippus appears to recognize that "solving" the paradox in terms of denotation-signification (by assigning every vague proposition a truth value and then showing how the truth values are inconsistent) would be to put the cart before the horse. The paradox is doing something, creating

⁴⁰ Cicero, *De Fat.* 21, 38; Plutarch, *Comm. Not.* 1066e; Simplicius, *In Cat.* 406,34-407,5; D.L. 7.65-6; S.E. *M* 8. 73-4.

⁴¹ Sorites arguments generally take a dialogic form: "Does one grain of wheat make a heap?'—'No'. 'Do two grains of wheat make a heap?'—'No' 'Do three?—'No'.—etc. If the respondent switches from 'no' to 'yes' at some point, they are told that they imply that one grain can make a difference between heap and non-heap, and that that's absurd" (Bobzien 2002, 217-8; *in* S.E. *M* 1.69).

something. It's only after the problem present in the paradox has established the relative identities of the two series (the impossible utterance and meaningful *lekton*) that a "tertiary organization" can be applied to understand the paradox uniquely in terms of one of the produced series (LS 81). This happens, for example, when vague predicates are interpreted in terms of bivalence, because rising to the "conditions of truth" of the propositions means looking to the relation of propositions to general concepts (what Deleuze calls signification). The problem becomes just a conceptual matter, the correct or incorrect understanding of what a concept implies. This may seem like a weaker argument that Chrysippus countenances paradoxes than the previous one about sophisms, but a recent debate lends credibility to Deleuze's interpretation. While Williamson (1994, 12-22) argued that for Chrysippus vague propositions necessarily possess a truth-value of which we are simply ignorant, Bobzien (2002, 218-22) denies that Chrysippus is an "epistemicist" in this sense. Rather, she claims that for the Stoics vague statements do not count as propositions with truth-values (*axiômata*), to which the principle of bivalence applies, but are essentially indefinite (*aoristos*) expressions.

For Deleuze, paradoxical instances (such as the chariot passing through lips with which we began) are opposed, as well as prior, to the dogmatic image of thought, in which thinking is simple and upright (LS 75). This interpretation of paradox is straightforwardly Stoic. While commentators recognize that Aristotle had at least two major "prior commitments," that is, pre-philosophical assumptions about the nature and proper scope of thought—a commitment, first, to not straying too far beyond how humans perceive the world (*ta phainomena*), and second to how people already think and talk about reality (*ta endoxa*) (Lang 1998)—the Stoics, on the other hand, "were much more ready to depart from customary modes of thought and speech" (White 2003, 127). Deleuze's interpretation of Stoic paradoxes is confirmed by Cicero, who says that Stoic doctrines which diverged too radically from popular *endoxa* were called *paradoxa* by the Stoics themselves (*Paradoxa Stoicorum* 4).

What, then, are the *events* that Deleuze identifies with Stoic *lekta* and *axiômata*, and how are they related to paradox? Deleuze indicates that what he means by "event" is what Plato called "becoming." He invokes the *Parmenides* (154c-155a; LS 1), where Plato argues that you can speak of something either as *being* or as *becoming* some predicate (Plato's example is "older"): "what is younger becomes/comes to be older in relation to what has already become/come to be earlier and is older, but it never is older" (*Parm.* 154e, trans. modified). What is younger becomes older but never is older. Two events, E1 and E2, take place at times T1 and T2. Plato claims that E1 *is* older

than E2, since E1 occurred at an earlier time. However, with the passage of time, E2, which *is* younger than E1 at the moment E2 occurs, *becomes* older in relation to E1 at the moment *it* occurred. In this way, as Plato puts it, the older and the younger both "go towards their opposites" (155a). E2 *becomes* older than it was when it occurred, but this is also to say that it *is* younger than it *becomes*. Isolating "becoming" then, Plato realizes, means having to say that the second event becomes both older and younger simultaneously (older than it was, younger than it will be). Deleuze picks out with the term "event" the aspect of this double process that "eludes the present," and "never rests" content in simply *being*. Deleuze calls a becoming that never *is* anything a "pure event" (LS 1-2).

Identifying such events with Stoic incorporeal *lekta* may appear to be Deleuze's interpretative innovation (for example, Sellars 2007 treats it that way). However, the Stoics do talk about "events" (*gignomena*) as incorporeals, especially in the context of discussing causality.⁴² The Stoics understand causality, as they do many other philosophical topics, in terms of the ontological divergence of bodies and incorporeals:

Zeno says that a cause is a 'that because of which', while that of which it is the cause is an attribute; and that the cause is a body [sôma], while that of which it is a cause is a predicate [kategorôma] ... Chrysippus says that a cause is 'that because of which'; and that the cause is an existent and a body <while that of which is it is a cause is neither an existent nor a body. > (Stobaeus, *Eclogae* 1. 138.14-139.4; = HP §55A, translation modified)

The Stoics define causes as bodies, but they also speak of something else, which they identify as an incorporeal predicate, "that of which a cause is a cause":

The Stoics say that every cause is a body which becomes the cause to a body of something incorporeal. For instance, the scalpel, a body, becomes the cause to the flesh, a body, of the incorporeal predicate being-cut. (S.E. M 9.211 = HP §55B)

Michael Frede explains that the question facing the Stoics was whether or not causes are like explanations, linguistic statements or "facts," items he summarizes as "propositional" (1980, 221-3). On the basis of their corporealist thesis, the Stoics reject the prevailing view (with its roots in Plato and Aristotle) that explanatory propositional items count as causes in the full sense. Explanations, for the Stoics, have no direct causal power. If causes are to exist, the Stoics think, then they must be bodies. But Chrysippus said that causes are usually well-hidden from human understanding (Galen, *De placitis* 348, 16-8, quoted in Frede 1980, 225), and so direct study of causes is a difficult project.

⁴² Alexander of Aphrodisias, *Fat.* 181,13-182,20 = HP §62G; Plutarch, *Stoic. Rep.* 1049f-1050d.

Effects are not so hidden. To the extent that the Stoics understood particular events as effects of (often inscrutable) causes, it made sense for them "to make causes causes of propositional items" and to "make room" in their ontology for such items (Frede 1980, 233). Causes cause effects, which the Stoics understand as predicates becoming true of bodies. Thus grammatically, Frede notes, Stoic causality is not a "two-place" relation between either two bodies or one body and one incorporeal. Rather it is a "three-place" relation between two bodies and one incorporeal. Stoic causality is usually presented in a standard formula involving three nouns, two existent and one subsistent: "a cause to something of something" (233). As Sextus reports, a scalpel (a body) is a cause to flesh (a body) of being cut (an event) (S.E. *M* 9.211). When it comes to causality, Frede points out, Stoics are peculiarly focused on the subsistent item, "that of which a cause is a cause." They care less about "entities and their being" and more about "particular events" precisely because they are more concerned with imputing responsibility for events than with explaining them. Frede suggests that the Stoics are "worried about determinism" (1980, 233).

Deleuze is aware of the peculiarity of Stoic causal theory: "There are no causes and effects among bodies. Rather, all bodies are causes *effects* are not bodies but, properly speaking, 'incorporeal' entities" (LS 4). But he diverges from the standard account of Stoic causality by speaking of the "quasi-causality" among events-effects themselves: "Incorporeal effects are never themselves causes in relation to each other; rather, they are only 'quasi-causes' following laws which perhaps express in each case the relative unity or mixture of bodies on which they depend for their real causes" (LS 6). For example, the event of a body "being cut" (the coming to be true of a predicate of that body), which is the effect of the application of one body (a scalpel) to another (some flesh), does not *cause* other effects (other predicates to become true) but it does contribute somehow to other effects coming about. Deleuze's calls this "quasi-causality." His interpretation derives in large measure from Cicero's De Fato, and the discussion of Chrysippus's theory of "cofated" events (confatalia), so much so that I discuss Deleuze's use of Cicero in detail below. Deleuze takes from Cicero the idea that effects have relations of compatibility and incompatibility among themselves, relatively independent of the corporeal interrelations of causes. Deleuze asserts that a full account of the event in Stoicism involves explaining a double causality: "The Stoics saw clearly that the event is subject to a double causality, referring on the one hand to mixtures of bodies which are its cause and, on the other, to other events which are its quasi-cause" (LS 94). Talking about events involves *both* bodies interacting causally and effects interacting quasicausally. This reading of Stoic events, which perhaps seems more eccentric than the construal of

Stoic semantics as fundamentally nonreferential, is actually on better footing and more in conformity with the extant evidence and contemporary interpretations.

Before moving on to a full textual dissection of Deleuze's use of Cicero, I want to unpack this claim about effects interacting with one another and elucidate the difficult notion of quasicausality. Deleuze explains that quasi-causality has to be understood in terms of sense as well as paradox:

We have tried to ground this second causality [quasi-causality] in a way which would conform to the incorporeal character of the surface and the event. It seemed to us that the event, that is, sense, referred *to a paradoxical element, intervening as nonsense or as an aleatory point, and operating as a quasi-cause assuring the full autonomy of the effect.* (LS 95)

In *The Logic of Sense* we are dealing with what commentators have called the "structuralist" Deleuze (Bowden 2011, 3; Lecercle 2008, vii). This means that the book's two "series" of bodies and incorporeals (of denotation-signification and sense), in accordance with Deleuze's own understanding of what "structuralism" involves (DI 184-9), are characterized by internal disequilibria that relate them to one another. In each series, there are "floating" elements, whose status is reminiscent of the status of the "set of all sets that do not contain themselves": outliers that both belong and don't belong to the series, that somehow fail to be assimilated into it. Deleuze calls these outliers paradoxical elements or aleatory points. In The Logic of Sense, he claims that "structure" has two characteristics: first, it is composed of at least two series related to one another in an asymmetrical way that may suggest dependency (for example, one series is "signifying" and the other "signified"); second, the series in question are freed from their determinate dependency to the extent they contain floaters, elements lacking an opposite number in the parallel series (LS 50-1).⁴³ Deleuze claims that the paradoxical elements, the lacks and/or excesses in the series, are things "by means of which the series communicate without losing their difference" (LS 50). That is, these elements in structures operate as the guardians of difference in a robust sense, they are "differenciators" which permit differences (between series) to be thought in terms of their difference rather than in terms of a presupposed identity (LS 51; compare DR 119-20).

Deleuze thinks Stoic ontology evinces the discovery of structure understood in this way: "The discovery of sense as an incorporeal effect, being always produced by the circulation of the

⁴³ I call paradoxical elements "floaters" in reference to the core text of French structuralism, Lévi-Strauss's "Introduction to the work of Marcel Mauss," to which Deleuze refers (LS 49-50; DI 186). The text describes "floating signifiers" as guarantors of semantic functionality in general which are not themselves always identifiable with any particular semantic function (Lévi-Strauss 1997, 63).
element = x [i.e., the floater or paradoxical element] in the series of terms which it traverses, must be named the 'Chrysippus effect'" (LS 70). "Structuralism, whether consciously or not, celebrates new findings of a Stoic ... inspiration" (LS 71). To return to the example I discussed in the context of Deleuze's reading of Frege, Deleuze means that the sense of a linguistic item (for example a name like "Aristotle") is produced by a lack or incoherence obtaining between two series, the series of events or sense, and the series of beings or reference. There is no one-to-one correspondence between reference and sense (as onto-logic would require), and no reason to think there should be one. Terms which belong to the sense-series (e.g., "pupil of Plato," "teacher of Alexander") can vastly exceed the terms of the denotation-series to which they are supposedly parallel, for instance, Aristotle the physical man.

While sense is, of course, not absolutely primitive but produced, and depends on the relations among bodies, Deleuze claims that its relative independence from relations among bodies has to do with the way it borrows the productive or genetic power of the paradoxical quasi-cause: "as soon as sense is grasped, in its relation to the quasi-cause which produces and distributes it at the surface, it inherits, participates in, and even envelops and possesses the force of this ideational cause [sc. the quasi-cause]" (LS 95). When philosophical investigation is focused on the metaphysical surface, it must be recognized that being "produced" goes both ways; sense is produced by bodies, but denotation and signification are produced by sense.

As examples of the productivity of sense, Deleuze and Guattari talk elsewhere about "incorporeal transformations" in concrete social contexts. For example, a judge's statement transforms the accused into the convict; likewise, an age categorization, like attaining the age of majority, transforms a child into an adult (TP 81). These transformations are explicitly understood as Stoic incorporeal events (TP 86), and hence belong in the realm of sense. To say that they are "quasi-causal" is to say that as propositions (e.g., "you are guilty") they effect changes in other propositions, even though the agency of these changes is not causal. Sense "produces" signification and denotation, for instance, to the extent that incorporeal transformations shift what things in the world the proposition supposedly refers to, as well as what general concepts the proposition is related to. Think of legal precedents. Given a legal decision, which is an incorporeal transformation, such as "this music pirate is a criminal," "a criminal" now includes in its reference something that it did not before, namely, a music pirate, and we can validly infer from statements about music piracy something new, namely, that it is a criminal offence. I adapt this interpretation of quasi-causality from Buchanan (2007), who specifically argues that gender is a quasi-cause: "the

very labels 'man' and 'woman' seize us and transform us. Gender is an attribute—an effect—that penetrates our bodies and functions there as a 'quasi-cause' of everything we do." I take it this implies that the voluntary character of the example of a judge pronouncing a sentence is the exception rather than the rule of quasi-causality. Many, if not most, incorporeal transformations are more involuntary, like gender. Although we are not born with a gender, but assume it, nevertheless gender categories are not something we can totally avoid or even control the application of (at least most of the time). Having a gender is the effect of having a body, but having a gender also influences ("quasi-causally") other events in our lives, other effects of different bodies, other predicates coming to be true: for example, "being handsome" or "being beautiful," being included in different statistical categories, getting paid less (or more) for the same work as your peers, and so on. The assumption of a gender ("I am woman") also changes the denotation of the term and changes what inferences are licensed by a general concept.

I understand the structuralist spin Deleuze puts on the idea of sense as implying not only that the relations between events or effects are not all voluntary, but also that they are also not all predictable. In the final analysis, sense-events derive their productivity from the fact they involve irreconcilable, excessive elements ("floaters" or "paradoxical elements") that introduce a little noise into the system: paradigmatically, the excess by which the number of senses exceeds the number of references. The quasi-cause is like the ramifying series of Fregean predicates, generating "teacher of Alexander," "student of Plato," and so on, from one reference: Aristotle's body. The lack or incoherence between, for example, denotations and senses is what makes events productive of one another.

Deleuze argues that reconciling these two aspects of sense (its being produced as a mere effect of bodily causes and its own genetic or quasi-causal power to generate other events, and even the other dimensions of the proposition) requires moving from a formal logic to a "transcendental logic" (LS 96). In fact, Deleuze thinks the Stoics were already well on their way toward accomplishing this. Talking in terms of "transcendental logic" and the "transcendental field" presupposed by experience is, I think, another way for Deleuze to talk about what interests him fundamentally in this book: the metaphysical surface, the frontier between the two series of things and propositions. This metaphysical surface is Deleuze's "transcendental field." However, the way in which it is "transcendental" must be very carefully articulated. Deleuze admires in the Stoics, and their contemporary heirs the structuralists, the commitment to an impersonal transcendental field in terms of a

"personal consciousness or a subjective identity" (LS 99). Making the form of consciousness transcendental violates the requirement that the two sides of the metaphysical surface not resemble one another (cf. LS 25).

The question is: why does Deleuze call this independence of sense relative to signification and denotation, or this independence of incorporeals relative to bodies, the "Chrysippus effect"? What is Chrysippean about it? The answer lies in the Stoic theory of the relations between events: fate.

EVENTS AND FATE

This talk of transcendental presuppositions and transcendental fields may seem quite alien to the Stoics' modest corporealism, or their insistence that causes are bodies rather than explanations. However, I think Deleuze's insights have been independently appreciated by some of the foremost scholars of Stoicism. Deleuze probably has the most to contribute to contemporary Stoic scholarship in the context of reconstructing the Stoic theory of fate.

In particular, Suzanne Bobzien's *Determinism and Freedom in Stoic Philosophy* (1998) hints that the Stoics may have recognized that incorporeals play a quasi-causal role, specifically in helping to determine what events occur "by fate." Bobzien explains that for the Stoics there are two main types of interaction between bodies: change or motion (kinêsis), on the one hand, and sustenance (*skhesis*), on the other. Chrysippus reportedly said that "none of the parts [of the universe] can be moved or sustained [kinêsthêsetai ê skhêsei] otherwise than according to its common nature" (Plutarch, Comm. Not. 1050d). The common nature of the universe, Plutarch sarcastically explains, includes for the Stoics sustained conditions (*skheseis*) like "vices, diseases, greed, hedonism [etc.]," as well as motions (kinêseis) like "adulteries, thefts, betrayals, [and] homicides," all of which he implies are consistent with Stoic divine providence. The point to emphasize is that since there are two kinds of bodily interactions, there are two types of cause: causes producing change, and causes sustaining qualitative states. Bobzien perspicaciously notes that, in the Stoic causal schema, kinêseis and skheseis are therefore incorporeal effects of bodily causes (Bobzien 1998, 22). This also means, Bobzien argues, that motions and sustained conditions are events (gignomena), and she underscores how in Plutarch and Cicero the terms "motions," "conditions" and "events" are used almost interchangeably (Bobzien 1998, 26).⁴⁴

⁴⁴ To be fair, there is no exact participial Latin equivalent of "*gignomena*" in Cicero. But Cicero does cite Chrysippus on motion (*motus*) in order to defend claims about everything "happening according to fate" (*fieri fata*) (*De Fat.* 20).

Nevertheless, Bobzien doubts that *gignomenon* is a well-defined technical term in Stoicism (26). In fact, she takes rather a dim view of the way the Stoics spoke about events: "As many modern philosophers build their theories without a fully worked-out theory of properties, facts, and events, and indeed often mix up areas, so did the Stoics. The terms γιγνόμενον and κίνησις are used differently in different contexts, and sometimes in the same context. Unclarities ensue ..." (27). Bobzien throws up her hands at a persistent interpretative problem facing her reconstruction of Stoic ontology: what to do with incorporeal events. Long and Sedley similarly conclude: "How do they [incorporeal events] play any part in the world? No satisfactory discussion of the problem has survived" (HP I. 165). Deleuze's post-structuralist interpretation of the Stoics, and in particular the genetic or quasi-causal role he assigns to *lekta*, is a way of coming to grips with precisely this interpretive impasse. It should therefore be of great interest to scholars interested in Stoicism today.

Despite Bobzien's unwillingness to say that the Stoics have a well-articulated theory of events, her work does suggest the rudiments of such a theory, *and* locates its clearest expression precisely where Deleuze does, in Cicero's *De Fato* (LS 6). On account of the lack of consistency in the Stoic conception of events, Bobzien claims that in her reconstruction she merely restates the ancient "vagueness" about *gignomena* by "using non-committal words like 'thing', without trying to clear up the Stoic mess" (Bobzien 1998, 27). In singling out the term "thing," Bobzien is referring to Chrysippus's response to the so-called "lazy argument" (*argos logos*), recorded by Cicero, which offers an objection to the hypothesis that everything occurs according to fate. The argument runs thus:

[1] If it is fated that you will recover from an illness, whether or not you consult a doctor, you will recover.

[2] If it is fated that you will not recover from an illness, whether or not you consult a doctor, you will not recover.

[3] In any case, it is pointless to consult a doctor.⁴⁵

Cicero recounts that Chrysippus responded to this argument by distinguishing between "*res simplices*" and "*res copulatae*," simple and conjoined "things," and suggests that whoever finds the lazy argument convincing has conflated the latter with the former (*De Fat.* 30). Events, like recovering from an illness, are not fated in isolation. The event of recovering may imply or require another event, such as consulting a doctor. Although the term *res* is ambiguous here, and "what the corresponding Greek term was (if any) is uncertain" (Bobzien 1998, 199-200), it is plausible to think that *res* would have rendered *gignomena*. Long and Sedley, for instance, accept that

⁴⁵ Cicero, *De Fat.* 28-9; Bobzien 1998, 182-4.

Chrysippus' "things" are events (HP I. 343). Chrysippus provides two examples of *res copulatae*. First, the events of Laius having a son called Oedipus and Laius mating with a woman are conjoined because the fatedness of the former requires or implies the fatedness of the latter. For the first to be fated, the second must also be fated. Similarly, the event of Milo wrestling at Olympia is co-fated with the event of someone wrestling Milo at Olympia, since wrestling at Olympia is not something Milo can do all by himself. Events that are connected in this way are called *confatalia*, co-fated things (*De Fat.* 30).

Many interpret Stoic fate, however, as an affair of bodies or causes *only*, not events or incorporeal effects. Chrysippus explicitly defines fate (*heimarmenê*) as a "chain of causes" (*heirmos aitiôn*, or in Latin, *series causarum*).⁴⁶ Susan Sauvé Meyer warns that we should not project onto this image a modern conception of causality: the Stoic causal chain is not a "sequence of events, each of which is cause to its successor and effect of its predecessor" (Meyer 2009, 73).⁴⁷ Rather, Meyer thinks, the chain of causes refers to a "cosmic sympathy … a complex set of relations of causal influence between the various bodies of the cosmos" (73). The causes that are "chained" together are the various quanta of divine *pneuma* apportioned in existing individuals. In the Stoic technical vocabulary the causes in question are *sunektika aitia*, causes of the coherence and organization of bodies (*hexis*, from which *sunektikos* is derived) (Frede 1980, 243-4). To speak of the chain of causes is therefore to speak of fate "*qua* pneuma in all things" (Bobzien 1998, 50). In this chain, it seems that there is nothing incorporeal.

Bobzien nevertheless reconstructs Stoic causal chaining in a way that does involve incorporeal effects. She wants to say that effects, in a manner of speaking, exert influence on, or are causally relevant for, the activity of future causes. She begins by suggesting that "any body that is (and insofar as it is) a cause in the chain or partial network that leads up to a later effect may be said to be (at least partially) *causally responsible* for that motion" (Bobzien 1998, 51). Her idea is that three-place Stoic causal relations can be chained thus:

A first body, say a scalpel, is a cause to a second body, some flesh, of an effect, being cut. In turn that second body, some flesh, is a cause to a third body, say a person's soul, of a second effect, being in pain. Bobzien thinks it's possible for a Stoic to say that Body [1] is (partially) causally

⁴⁶ Aetius, *Plac.* 1. 28, 4 = SVF 2. 917; Cicero, *Div.* 1.125, *De Fat.* 20.

⁴⁷ In fact, she reproaches other commentators (most notably, Long and Sedley at HP I. 343) with attempting to construct analogues of the modern conception of causality from Stoic textual materials (2009, 78 n.16).

responsible for Effect [2], that the scalpel is partially responsible for the soul's being in pain. Bobzien's reconstruction hinges on the way she understands the second three-place causal relation as a *result* of the first one. If it is a result, she must say something new about Effect [1]: "An effect ... in a causal chain that 'makes' (or contributes to making) the body at which it occurs become in turn a cause of a further effect ... must be called a *causal occurrent* of [that further effect]." (Bobzien 1998, 51). In our example, being cut is a "causal occurrent" of the further effect, being in pain.⁴⁸

Despite her wariness about the vagueness in the Stoic theory of events, Bobzien deploys "causal occurrents" throughout her account of Stoic divination (167, 175-9). Specifically, Bobzien understands Chrysippus's doctrine of *confatalia* as a doctrine about causal occurrents. For any given event, *confatalia* introduce "causally relevant necessary conditions" which are themselves incorporeal events:

A consequence of the existence of such necessary conditions of occurrents for Chrysippus' determinism is that [events] are not fated in isolation. For they introduce a restriction on the possible combination of [events] that can obtain in the course of the world, and hence—because everything is fated—on the combination of [events] that can be fated. $(224)^{49}$

One way of understanding Deleuze's emphasis on quasi-causality is as part of an inquiry concerning the nature of the restrictions imposed by Stoic *confatalia*. Deleuze's meditations on Stoic fatalism come to the conclusion that the Stoic doctrine of *confatalia* contains a theory of the compatibility and incompatibility of events, independent of straightforward corporeal causality:

Fate is primarily the unity and the link of physical [i.e. corporeal] causes among themselves. Incorporeal effects are obviously subject to fate, to the extent that they are the effect of these causes. But to the extent they differ in nature from these causes, they enter, with one another, into relations of quasi-causality. ... Between events, there seem to be formed extrinsic relations of silent compatibility and incompatibility, of conjunction and disjunction, which are very difficult to apprehend. What makes an event compatible or incompatible with another? We cannot appeal to causality. (LS 169-70, translation modified)

⁴⁸ Bobzien uses the neologism "occurrent" to translate *gignomenon* in order to distinguish Stoic events from the "events" of contemporary metaphysics (1998, 27). She appears to refer to the "property-exemplification" theory of events (e.g. Kim 1993, 33-52), and to suggest that the Stoic event may be understood as an anticipation of this theory (27 n.43), although nothing in her argument depends on the suggestion. I will stick with "event" for *gignomenon*, since what is characteristic about these Stoic events, at least for Deleuze, is their distinctness from bodies and causality proper. The irreducibility of events with respect to the actually existing situation is crucial to Deleuze and more widely in continental philosophy (Bowden 2011, 2). This is the sense "event" possesses in that tradition.

⁴⁹ I have replaced Bobzien's uses of the word "thing" with "event."

The contribution of "causal occurrents," that is, incorporeal events, to the Stoic conception of fate is precisely what interests Deleuze. As he puts it, events "communicate" with one another by borrowing the genetic power of structural floaters or paradoxical elements. By invoking the compatibilities and incompatibilies between events themselves, Chrysippus shows that the lazy argument fails because it assumes that no events are co-fated. The event of having gone to the doctor does not cause the event of getting well. Only bodies are causes. But unless that first event occurred, the second would not have. So there is a kind of generation or conditioning of events by events which is not causality. To give it a name, Deleuze adopts Clement of Alexandria's word and speaks of *quasi*-causality.

DELEUZE AND DE FATO

Deleuze makes three major claims about Cicero's *De Fato*, his principal source for the Stoic doctrine of quasi-causality, in quick succession. All three deserve to be fleshed out in detail. First, Deleuze avows that the independence or "autonomy" of the quasi-causal series of *lekta* with respect to properly causal bodies is related to Chrysippus's compatibilism in the ancient debate on determinism: the simultaneous affirmation of fate and denial of necessity (LS 169). Second, Deleuze remarks that Chrysippus's infamous response to the Chaldean astrologers, that they need to rephrase their prophetic hypotheticals (Cicero, *De Fat.* 15), proves that Chrysippus himself is aware of the fact that the quasi-causal incompatibility of two events is distinct from (and prior to) logical contradiction, which remains a relationship between propositions and concepts in the dimension of signification (LS 170). Third, Deleuze claims that for the Stoics astrology provides a well-defined theory of the criteria for the convergence and divergence of events (LS 171). I will deal with each of these claims in order.

The Stoics say that everything occurs according to fate.⁵⁰ Both Bobzien and Deleuze accept that, although fate is a chain of causes (in other words, bodies), the things that happen "according to fate" (*kath 'heimarmenê, fato*) are incorporeal events. Deleuze suggests that the relative independence of events from the properly causal series is best understood in terms of Chrysippus's much-discussed acceptance of fate and denial of necessity (LS 6, 169). Appreciating Deleuze's point requires supplementing his brief allusion with material from the *De Fato* about how Chrysippus's account of fate is distinct from Diodorean necessitarianism, and about the kind of causality involved when events happen by fate.

⁵⁰ Cicero, De Fato 21: "fato omnia fiunt"; D.L. 7.149: "καθ'είμαρμένην ... τὰ πάντα γίγνεσθαι."

Cicero reports that for Chrysippus three conditions mutually imply one another: 1) that everything occurs by means of fate; 2) that every proposition (*enuntiatio*) is either true or false, or in other words that the principle of bivalence obtains for all propositions; and 3) that everything takes place by means of "antecedent causes" (*causae antegressae* or *causae antecedentes*).⁵¹ I will discuss the second and then third claims. Chrysippus thought that "if there were an event without a cause, then it would not be the case that every proposition is either true or false" (Bobzien 1998, 61; Cicero, *De Fat.* 20). The required connections between fate, the principle of bivalence, and antecedent causes suggests to Bobzien that the Stoics accept a kind of logical determinism that "argues from the truth of propositions to the necessity of events," a live option in antiquity, as evidenced in Aristotle's famous discussion of the sea-battle, that is not found very convincing today: "Nowadays, logical determinism is usually considered as based on a fallacy, confounding logical relations between propositions with physical connections between objects or events" (Bobzien 1998, 59).

It is not correct to see in the contemporary rejection of logical determinism a rejection of the Stoics' real position. Because the Stoic ontological stemma, that is, their idea that "something" is the supreme genus, accommodates existent as well as non-existent somethings, Chrysippus' position with respect to determinism is more nuanced. For one thing, with Chrysippus, there is no question of any "physical" connections between events that have been confused for logical connections. Rather, the Stoics identity events with effects, incorporeal predicates becoming true of bodies. For another thing, there is no question of the necessity that Chrysippus rejects being identified with logical determination. The logical relations that are important to Chrysippus in the doctrine of fate are emphatically *not* what we might usually think of as "logical relations" namely, relations of subsuming predicates under general concepts, or, as Deleuze puts it, establishing "conditions of truth." Rather, Chrysippus's position in Cicero's De Fato suggests that the relations among propositions should be identified with the correspondences among events that occur according to fate. This means that what Chrysippus calls necessity and what we might think of as "logical necessity" are two different things. In the absence of the distinction between signification and sense, which Deleuze emphasizes, this distinction between his use of "necessity" and the more conventional construal of "logical necessity" will probably not be perceived (Bobzien, for instance, is tempted to interpret Chrysippus as a logical determinist, where logic is understood not as a dialectical investigation into the productivity of problems, but as a matter of

⁵¹ Cic. *De Fat.* 21. For Deleuze's reliance on this text, see LS 335, n.3, 350, n.1. For Chrysippus, bivalence holds even in the case of propositions about the future (Simplicius, *In Cat.* 406,34-407,3).

signification, as if sense were a theory of meaning rather than something that offers insights about the "truth" of problems). When he talks about necessity, Chrysippus identifies it with relations among bodies, while he identifies fate with the relations among propositions—which we might call "logical (or dialectical) necessity," so long as we bear in mind the difference between sense and signification. That's why, in a nutshell, Chrysippus holds that events are not necessary although they are "fated." When Chrysippus is talking about the relations among propositions, this is not a matter of signification (the subsumption of predicates under universal concepts), but a matter of the compatibilities among senses.

In ancient discussions of fate, like Cicero's *De Fato*, the main controversy concerns what could possibly be decisive or "genetic" about relations among propositions. This question has to do specifically with whether propositions about future events (for example, the future contingents discussed by Aristotle and the putatively necessary propositions about the future in Diodorus's Master Argument) somehow transmit necessity to actually existing things in the present.⁵² It should already be obvious, given the fundamental ontological gesture of Stoicism, namely the division of somethings into existent and non-existent series, that since the relations among incorporeal propositions cannot interact *directly* with bodies in a causal way, propositions concerning the future can't make bodies do anything. In my view, Chrysippus's distinction between fate and necessity is a corollary of the basic Stoic ontological gesture. When the Stoics discuss what happens according to fate, they mean the coherency among incorporeal events expressed in propositions. They do *not* mean relations between bodies. *Nor*, according to Deleuze, do they mean relations between propositions and universal concepts.

If this is indeed Chrysippus's position, as Deleuze thinks, then no wonder the Stoic has a hard time defending fate in a largely hostile context. Most of the hostility toward Stoic fate is framed in terms of the fear that fate threatens moral responsibility (Sedley 1977, 292). Defenders of Stoicism, in turn, tend to represent Chrysippus as a compatibilist, carving out a niche for moral responsibility despite the fatality of the cosmos (Stough 1978; Frede 2003). The most bald-faced statement of ancient necessitarianism is usually attributed to Diodorus Cronus, whom the *De Fato* positions as Chrysippus's theoretical adversary: Diodorus the necessitarian, Chrysippus the fatalist without necessity.

Diodorus defined modalities: the possible (*to dunaton*) as what "either is or will be true"; the necessary (*to anagkaion*) as "what being true will not be false"; and the impossible (*to*

⁵² Aristotle, *De Int.* 18a27-19b4. On Diodorus, see Sedley 1977 and Bobzien 1998, 59.

adunaton) as "what being false will not be true."⁵³ The permutations of these definitions in his socalled "Master Argument" are often understood as a proof of fatal necessity, or an explanation of how true propositions about the future transmit necessity to the present. Epictetus reports that Diodorus began with three premises that he thought could not all be accepted simultaneously:

[1] Every true proposition about the past is necessary (i.e. it will not become false).

[2] The impossible doesn't follow from the possible (i.e. a false proposition that will not become true doesn't follow from a proposition true at present or at some time in the future).

[3] What neither is true now nor will be true is still possible. Diodorus recognized a contradiction among these three premises, and, considering the probative force of the first two unimpeachable, therefore rejected [3]. He concluded: "Nothing is possible which neither is nor will be true" (Epictetus, *Diss.* 2. 19. 1).⁵⁴

Consider a possible proposition about the future: "this ship will arrive safely in port." Diodorus thinks that if such a proposition expresses a real possibility, then it is true. But what if the ship sinks? Diodorus' modal definitions make it difficult to conceive of how a true proposition could become false, even a proposition about the future. So true possible propositions stray dangerously close to necessary ones—true propositions that will not become false. Sedley warns that Diodorus's purpose was modestly to define possibility, impossibility and necessity in relation to each other, and that he "did not take the step of identifying the actual, the possible and the necessary" (Sedley 1977, 99). Nevertheless, in Cicero's *De Fato* (13, 17) Diodorus is represented as a strict necessitarian against whom Chrysippus reacts. Chrysippus objects to the way Diodorean principles require denying that "counterfactual possibilities" (i.e. possibilities that are not true and might not be in the future) and "factual non-necessities" (i.e. true present propositions that may become false in the future) could actually obtain or be the case (Bobzien 1998, 106; cf. Gaskin 1995, 295). Things that will not be true are not even possible. That is, contingent propositions about the possible future, whose contradiction is also possible, have no place in Diodorus's modal world.

⁵³ Boethius *Int*. II. 234, 22-6.

⁵⁴ The most complete reconstruction of the logical form of Diodorus's argument can be found in Gaskin (1995, 217-319, formally culminating at 282-97). Here is a much simpler reconstruction, which flattens many of the subtle controversies in interpreting the argument. Premises [2] and [3] can be formalized in such a way that they are clearly inconsistent with one another: [2] If something is possible (true now or true in the future) then it is not impossible (not true now and not true in the future); [3] If something is not true now and not true in the future (in other words, "impossible" according to Diodorus's definition of the term) then it is possible (true now or true in the future). In simple formulae, where P is possible and I is impossible: $P \rightarrow \neg I$ and $I \rightarrow P$.

Chrysippus, in contrast, allows for possibilities of the kind Diodorus refuses, and thus breaks with the perceived necessitarianism in Diodorus (Cicero, *De Fato* 13). Chrysippus affirms, for example, that "This jewel will be broken" is a proposition about the possible future of a currently unbroken jewel, even if the jewel in question will not become broken. In order to allow for such contingencies, Chrysippus supplements Diodorus's modal definitions: for Chrysippus the possible is what is "capable of being true, where there is nothing hindering its being true."⁵⁵ The exact nature of what "hinders" propositions from being true is not totally clear. But Alexander of Approdisias reports that the Stoics maintained that it is possible for grain chaff to burn in the open air, but impossible when the chaff is submerged in water.⁵⁶ Here it looks to Bobzien like the external circumstances hindering possibilities and impossibilities are instances of brute corporeal causality (1998, 112). Chrysippean modality has been understood in this way by others: Sedley implies that a jewel's becoming broken would be Chrysippean-impossible if it were prevented by corporeal circumstances from being broken, "encased in concrete and guarded day and night" and so on (1977, 99). Chrysippus's new definition of possibility, moreover, also creates space for a kind of personal and moral agency in the "freedom from" both corporeal and conceptual necessitation. For instance, a state (*skhesis*) such as a vice and a motion (*kinêsis*) such as a vicious act remain possible, so long as they are not externally impeded by corporeal circumstances, even if they are never actualized. For Bobzien, and others, this possibility is enough of a gap between the series of bodies and the series of *lekta* for it to be meaningful to say that humans enjoy a range of negatively free purposeful action and that we can be ascribed moral responsibility (Bobzien 1998, 119; see Stough 1978 and Frede 2003).

Even though he does not accept Diodorean necessitarianism, however, Chrysippus still maintains that "everything happens according to fate" and that universal fatalism is connected to the universal validity of dialectical principles like the principle of bivalence. We can understand how Chrysippus's fatalism differs from Diodorus's necessitarianism by investigating the third condition which Chrysippus thinks is mutually implied by the other two: that everything has "antecedent causes." What are these *causae antecedentes*, and how are they related to all the other kinds of cause in Stoicism?

⁵⁵ D.L. 7.75; see also Plutarch, *Stoic. Rep.* 1055d-f; Boethius, *In De Int.* II. 234-5 (= HP §38C); Sedley 1977, 99; Frede 1974, 107-14; Bobzien 1998, 112-6.

⁵⁶ Alexander of Aphrodisias, *In An. Pr.* 184 6-10 = HP §38B.

The Aristotelian commentator Alexander of Aphrodisias criticizes the Stoics for producing a theoretical "swarm of causes" (*smênos aitiôn*).⁵⁷ The creation of a vast array of different kinds of cause was probably related to their anti-necessitarian fatalism. Cicero reports that Chrysippus "distinguishes different kinds of causes in order both to escape necessity and to retain fate" (*De Fat.* 41). In the words of Dorothea Frede, Alexander of Aphrodisias "insinuat[es] that the Stoics tried to obfuscate the embarrassing consequences of their determinist principles by a set of bewildering distinctions" (Frede 2003, 187). Michael Frede has attempted to make sense of the Stoics' puzzling causal terminology. He shows, on the one hand, that "the Stoic distinction of various kinds of causes is a refinement on an ordinary intuitive distinction of various kinds of responsibility" (1980, 225), and on the other hand, that to say that everything happens by fate is to say that everything happens according to *one specific* kind of cause (234).

Cicero reports that Chrysippus distinguishes between *causae perfectae et principalis* (perfect and principal causes) and *causae adiuvantes et proximae* (auxiliary and proximate causes) (*De Fat.* 41). Examining parallel Greek texts, Frede conjectures that "*perfecta et principalis*" is a translation of something like "*autoteles kai sunektikon*" (Frede 1980, 237). That is, he thinks this kind of cause should be identified with the "*sunektikon*" cause of the coherence or tenor (*hexis*) of bodies, identified by the Stoics with a portion of divine *pneuma*. The second type of cause distinguished here ("auxiliary and proximate") is harder to pin down. But it is clearly very important. Cicero quotes Chrysippus saying: "when we say everything happens according to fate by antecedent causes, we do not wish it to be understood by perfect and principal causes, but by auxiliary antecedent and proximate causes [*causis adiuvantibus antecedentibus et proximis*]" (*De Fat.* 41).

The idea that "everything happens by fate" does not mean "everything happens according to pneumatic corporeal causes" has big consequences. Frede thinks that all the terminological proliferation boils down to the basic insight that responsibility for an event's occurrence is often not straightforwardly attributable (1980, 237). The "sunhektic" or pneumatic cause, for the Stoics, marks a limit-case: a cause that "does not depend for its causal efficacy on the agency of some other cause outside its control" (239). This is why the cause is also called *autotelês*, perfect or complete in itself. Such conceptually neat causality is the exception rather than the rule in the Stoic cosmos. Typically, different kinds of cause (auxiliary, helping causes, "co-causes," etc.) collaborate to produce effects (Cicero, *Topica* 58). When Chrysippus says that the antecedent

⁵⁷ Alexander of Aphrodisias, *Fat.* 192,18 (= HP §55N). E.g. *sunektikon aition, sunaition, sunergon*, et al. (S.E. *PH* 3.15; Frede 1980, 237).

causes constitutive of fate act like auxiliary and proximate causes, this means that the expression "everything happens according to fate" does not indicate that there is one perfect cause that acts alone to produce all effects. Moreover, as Frede reads it, "this is why the antecedent cause and hence fate by themselves do not necessitate the effect. For whether the antecedent cause does bring about the effect depends on the activity of the perfect cause, and whether the perfect cause does act is outside of the control of the antecedent cause" (239). Perfect, or pneumatic causes are thus necessitating in the way that Chrysippus wants to *distinguish* from fate.

The famous argument about a rolling cylinder is supposed to be effective against anyone who thinks that antecedent causes are perfect and hence that fate necessitates. Chrysippus's imagines a cylinder rolling along a surface or a top spinning in place. Either of these bodies "cannot begin to move without a push. But once that has happened, [Chrysippus] thinks the cylinder rolls, and the spinning-top spins, by its own nature [*suapte natura*]" (*De Fat.* 42). In this illustration the push is the properly antecedent cause that does not necessitate the motion of the cylinder, but cooperates with the cylinder's inner nature.⁵⁸ Chrysippus thinks, then, that fate acts more like a fortuitous push than like an inner nature. From a Stoic perspective, *if* there were perfect causes acting in isolation (which is rare) they would be genuinely necessitarian, conferring a purely physical necessity, as all the parts of Zeus mixed into bodies functionally cohere in a cosmic organism.

Chrysippus apparently transferred this argument about responsibility for motion to the moral realm. He likens the cylinder's behaviour to what happens in human sense-perception, in order to avoid the dangerous idea that human actions are determined by external causes. Just as a push moves a cylinder, similarly "an object perceived will impress and as it were seal its appearance on the mind, but assent will remain in our power [*sed adsensio nostra erit in potestate*]" (Cicero, *De Fat.* 43). Chrysippus's point is that while our actions *do* have antecedent causes, namely sense-impressions, it is wrong to say that these causes necessitate our actions (Frede 1980, 235). It is more correct to say that the perfect cause lies within us, in our proper nature or character, and that this, if anything, has the necessary force to move us to action (Frede 2003, 192; Inwood 1985, 69-70).

So Stoic responsibility resides in "freedom from" external physical compulsions, like sense-impressions for instance. But the Aristotelians criticized Stoic moral theory, and their

⁵⁸ *Natura* may be a rendering of the Greek "*phusis*," which in Stoic cosmobiology names the organizing pneuma mixed in animate bodies like plants, but there are good philosophical reasons for thinking it more likely stands for "*hexis*," the principle of cohesion in non-living bodies.

criticism show, I think, a conflict between Stoic morality and the theory of fate. Alexander of Approximation Approximation and the stores and the stores are stored and the stores and the stores are stored and the stores and the stores are stored and the stores are stored and the store and the store are stored and the stored and the store are stored and the st actions, and assert that what occurs through us [di' hêmôn] is up to us [eph' hêmin]" (Fat. 13. 181,13 = HP §62G, translation modified). To Alexander, this looks like a contradiction. If we are merely instruments of fate, without even the capacity to choose between two opposed options, it seems false to say that anything is "up to us." Yet, ta eph' hêmin, "things up to us," is the Stoic ethical category bar none.⁵⁹ Chrysippus evidently thought that *assent* to sense-impressions was something prototypically up to us, or "in our power" (nostra in potestate).⁶⁰ What Alexander finds odd is that in the Stoic conception being "up to us" means being determined by our characters or natures (*hexeis*), rather than implying an ability to choose voluntarily either to act or not to act at any given time. The Stoics are once again at odds with Aristotle, who has his own theory of *ta eph*' *hêmin*, where to describe an action as "up to us" means chosen in preference to an alternative.⁶¹ For the Stoics, "up to us" does not mean the things the opposites of which we are capable, nor does it imply spontaneity, in the sense of a "beginning of motion" (Stough 1978, 208-9, 224). It looks like whatever contingency Chrysippus wanted to infuse into human affairs in denying that human actions are necessitated by antecedent causes is far from radical. It may even be doubted that action in Stoicism, derived from character as its sunhektic cause, is "up to us" in a meaningful sense at all. The Aristotelians certainly had their doubts about that. What may be unsatisfying to an Aristotelian in Stoicism is the way "up to us" simply means not necessitated by external causes, but still a function of our human nature.

In fact, while maintaining that assent remains "up to us," modally understood as minimally possible but non-necessary, the Stoics introduce a number of theoretical qualifications, limiting the scope of free action more dramatically. For instance, according to the Stoic doctrine of apprehension (*katalêpsis*, literally "grasp"), certain sense-impressions are apprehensible (*katalêptikê*) on the basis of "a mark distinctive of true impressions" (Cicero, *Acad.* 2.33).⁶² The idea is that kataleptic impressions authentically grasp the objects of which they are impressions

⁵⁹ See for example Epictetus, *Ench.* 1, 2, 14, 19; Long 1971b 180-5. The substantivized version of this phrase "*ta eph' hêmin*" is not attested before Musonius, teacher of Epictetus (Bobzien 332 n.3), but the concept is attributed to Chrysippus pretty clearly by Cicero.

⁶⁰ Cicero, *Acad.* 1. 40, 2. 38; *De Fat.* 43.

⁶¹ NE 1113b1-14, esp. 5: "virtue is up to us, and so too is vice (ἐφ'ἡμῖν δὴ ἡ ἀρετή, ὁμοίως δὲ καὶ ἡ κακία)." Alexander notes this contrast at *Fat.* 13. 181,13, already quoted, and at *Fat.* 26. 196,24 (=HP §61M).

⁶² The term *katalêptikê* is variously translated: in Long and Sedley it is "cognitive," in Victor Goldschmidt, and by extension Deleuze, it is "*compréhensive*" (LS 145; Bowden 2011, 54), Cicero uses "*comprehensio*" and "*comprehendibile*." I follow Charles Brittain's translation of Cicero's *Academica* in using "apprehension" and "apprehensible."

(Acad. 1.41). Put another way, such impressions come "from what is" (apo tou huparkhontos) "in accordance with what is" (kat' auto to huparkhon).⁶³ Such impressions are, in turn, the "criteria of truth" in the sense of the necessary conditions for true knowledge.⁶⁴ As I have said, to the extent that the Stoic theory of meaning relies on the doctrine of *katalepsis*, then it remains more "referential" or onto-logical, involving a relationship of correspondence between words or thoughts and being, than Deleuze would like. Now, even though later Stoics will argue that human unhappiness derives from wrongly exercising assent (Epictetus, Diss. IV.1.54-75), the doctrine of apprehension further narrows the (already narrow) purview of the assent which is "up to us": "when someone apprehends [that is, kataleptically grasps] anything, they immediately assent [adsentitur statim]" (Cicero, Acad. 2.38).⁶⁵ The Stoic Sage is the critical figure here, since the Sage is characterized as never assenting to what is false, that is, to non-kataleptic impressions.⁶⁶ The Sage has no choice but to assent to an apprehensible impression because of his or her longcultivated sagacity. Of course, as always the perfect cause lies within (Frede 2003, 192) and not in the antecedent cause, but in this case the way it links up with the external, antecedent cause (the katalêptikê phantasia) seems almost necessitating. Is it therefore out of keeping with the Stoic doctrine of fate as distinct from necessity? I believe that Deleuze would think so.

From this point of view, the Stoics hold positions that appear to be in tension with one another: [A] they must say that sense-impressions are merely antecedent causes that *don't* necessitate action (which is why non-Sages err and assent to what is false with tragic results), and [B] that the correct "use of representations," the balance between assenting to apprehensible impressions and not assenting to inapprehensible ones, is a key feature of the Stoic "art of living."⁶⁷ As many commentators have noted, [A] implies that there is a role to be played by something like moral responsibility, albeit understood in a non-Aristotelian way. But [B] indirectly indicates how necessitarian elements remain implicit in Stoicism, especially in the doctrine of the Sage. The Stoic "art of living," which has been understood as a means of weaving human responsibility into the causal fabric (Frede 2003, 192), is actually defined by Zeno as a "system of apprehensions,"

⁶³ D.L. 7.46; compare S.E. *M* 11.183 and Cicero, *Acad*. 2.77.

⁶⁴ D.L. 7.54; Cicero, Acad. 2.145.

⁶⁵ Brittain translates this phrase "they automatically assent."

⁶⁶ D.L. 7.121; Cicero, Acad. 2.57.

⁶⁷ For the correct "use of representations" (ή χρῆσις ή ὀρθη ταῖς παντασίαις), see Epictetus, Diss. 1.1.7-12 and 1.6.12-22; for the "art of living" (ή τέχνη περὶ τὸν βίον), S.E. PH 3.241. See also Sellars 2003, 55

Chrysippean compatibilism.⁶⁸

I think Deleuze has more sympathy for the Stoic doctrine of Fate than the Stoic doctrine of the Sage. His incredibly condensed argument about Cicero's *De Fato* indicates that the relation of relative dependence and independence into which Chrysippus puts fate and necessity (or antecedent and sunhektic causes) in that text is isomorphic with (or perhaps identical to) the relative dependence and independence of Stoic quasi-causes with respect to causes. Just as auxiliary causes depend on perfect causes, but maintain a kind of independence (that of the push with respect to the nature of the cylinder), so also quasi-causes depend on causes, but likewise manifest their autonomy whenever sense borrows the "genetic force" of nonsense. I don't think Deleuze wants to make a specific point about free will and determinism in Stoicism, but he does claim that the quasi-causal independence of events in relation to causes is akin to the Chrysippean independence of fate with respect to necessity, discussion of which he leaves latent. If we omit this parallel with Chrysippus we lose an argument that is readily defensible in the light of current scholarship on Stoicism.

We can turn now to Deleuze's second major claim about the *De Fato*. While his first claim is intended to distinguish the "silent relations" among events (fate) from the causal relations among bodies (necessity), the purpose of his second claim is to distinguish the relations among events from the relations among *concepts*. Deleuze perceives that for the Stoics the compatibility or incompatibility among fated events is distinct from physical incompatibility, on the one hand, and logical contradiction, on the other. About Stoic hypothetical arguments, Deleuze remarks that "commentators are certainly right to recall that the question here is not about a relation of physical consequence or of causality in the modern sense of the word. But they are perhaps wrong to see in [Stoic theories about the connections between events] a simple logical consequence in the form of identity" (LS 69). Sean Bowden (2011, 34-5) has traced Deleuze's unacknowledged sources for the Stoic theory of connections between events that he endorses to Diogenes Laertius (7.71-5) and Sextus Empiricus (*PH* 2.110-13). In these passages the Stoics take conditionals to be the typical form of relation between propositions:

For example, 'If it is day, it is light'. This is true, since 'Not: it is light', the contrary of the consequent, conflicts with 'it is day'. A false conditional is one the contrary of whose consequent does not conflict with its antecedent. For example, 'If it is day, Dion is walking'. For 'Not: Dion is walking' does not conflict with 'It is day'. (D.L. 7.73)

⁶⁸ "Sustêma ek katalêpseôn" (Olympiodorus, In Gorg. 12.1 = HP §42A). Cf. Sellars 2003, 70-1.

Bowden points out that Deleuze is interested in the verb "conflict" here (*maxetai*), and in the noun "cohesion" or "connectedness" (*sunartêsis*) in the parallel passage in Sextus (*PH* 2.111), terms which characterize relationships between propositions whose interpretation is not agreed upon by commentators (Bobzien 1998, 159). Deleuze thinks that the conflict or cohesion between antecedent and consequent in Stoic *hypotheticals* is fully conceptual. He notes that for the exemplary conditionals "If it is day, it is light" and "If someone has given birth, then she has milk":

We can consider 'being day' or 'having given birth' as signifying properties of a higher type than those over which they preside 'being light', 'having milk'. The link between propositions cannot be reduced either to an analytic identity or to an empirical synthesis; rather it belongs to the domain of signification—so that contradiction may be engendered, not in the relation of a term to its opposite, but in relation of a term to the *other* term. (LS 69)

In sum, putting propositions into relations in the form of hypothetical or conditional statements reveals compatibilities and incompatibilities in terms of signification, that is, in terms of the relation of the propositions to general concepts. For Deleuze, compatibilities of this kind are ultimately unsatisfactory for his purpose, since they provide the condition of possible truth-values, but tell us nothing about the "truth" of problems, which he identifies with sense. Rather, Deleuze is interested in compatibilities and incompatibilities between propositions in what he calls a structure, where a nonsensical or paradoxical element connects events in a manner "entirely different" from signification (LS 69).

Deleuze's interpretation of Stoic conditionals invites an instructive contrast with Caston's interpretation of Chrysippus. Caston thinks Chrysippus rejects Zeno's vision of concepts as generic intentional objects (already a step away from Plato's causal, substantial Forms). Chrysippus is an "eliminativist about all generic entities" and would rather treat conceptuality in terms of "conventions involving names" (Caston 1999, 196). In order to avoid hypostasizing dubious generic entities, Chrysippus advocates changing how we talk about concepts. He advocates analyzing our ordinary way of speaking about conceptual entities and using a "logically hygienic paraphrase that shows its commitments perspicuously" (204). Typically, Chrysippus's hygienic paraphrases transform definitions into conditionals: e.g. "man is a rational animal" becomes "if something is a man, then it is a rational animal" (S.E. *M* 11. 8-11). Rather than indicating that some generic entity "man" exists, such hypotheticals are ontologically committed to particulars only. Yet they still do the work of concepts, permitting relationships of conformity and nonconformity, contradiction and non-contradiction, among propositions.

Deleuze can be understood as supplementing Caston's analysis on this point. Even though Caston claims that Chrysippus goes against Plato by dealing with conceptuality using *lekta* instead of anything existent, he argues that the distinction between body and *lekton* is one of covariance (Caston 199, 207, and *supra*), with no hint of the autonomy of Stoic quasi-causes. Deleuze goes further than Caston and points out that transforming definitions into conditionals is not in fact the last propositional transformation that Chrysippus advocates (LS 170). In Cicero's *De Fato*, Chrysippus infamously argues that the Chaldean astrologers will have to rephrase their mantic, conditional propositions in order for their predictions to conform with the Stoic theory of fate.

For Chrysippus, fate and divinatory prediction are linked. According to one account, Chrysippus said that "if it were not the case that everything is encompassed by fate, it would not be the case that the predictions of the seers are true."⁶⁹ Chrysippus imagines an oracular pronouncement: "If anyone is born at the rising of the dog-star, then he or she will not die at sea." From this, an applied prediction is derived: "if some particular individual, Fabius, is born at the rising of the dog-star, then he will not die at sea" (Cicero, De Fat. 12). This oracle involves Chrysippus in a debate with Diodorus over the necessity of true propositions concerning the future (De Fat. 13), the problem being that if you accept the necessity of the protasis ("Fabius was born at the dawn of the dog-star"), then you must accept the necessity of the apodosis ("then, necessarily, he will not die at sea"), so long as the conditional is true (so long as the propositions in each part do not conflict with one another, but cohere). But Chrysippus, as I've already discussed, does not want to admit the existence of necessary propositions concerning future events. Therefore, Cicero reports, he suggests that the oracle is a true prophecy, but in an unacceptable form. It must be "hygienically paraphrased" in order to avoid the misinterpretation of fate as necessity. Chrysippus says the Chaldeans should change the form of their prophecy from a conditional into a *negated conjunction*:

They will not employ conditionals expressing their observations thus: 'If someone was born at the rise of the dog-star, then he will not die at sea', but rather will state them in this way: 'It is not the case both that someone was born at the dawn of the dog-star, and that he will die at sea.' (Cicero, *De Fat.* 15, my translation)

Commentators have inferred that Chrysippus means for negated conjunctions of this kind to describe fateful but non-necessitating relations between events (Frede 1980, 247-8; Bobzien 1998, 157-8). Deleuze would no doubt agree. *Why* exactly negated conjunctions are non-necessitating,

⁶⁹ Eusebius, *Praep. Ev.* 4.3.2 (= HP §55P). Diogenianus the Epicurean, the source of this testimony, thought that Chrysippus needed to argue circularly for this principle (Bobzien 1998, 88-93).

however, has been a controversial question. What is the difference between conditionals and conjunctions? Commentators have located it in the way that conditionals are not "truth-functional," while conjunctions are (Bobzien 1998, 159; Bowden 2011, 34). The "truth" involved in the use of this phrase, it is important to note, is the truth of reference, an ontological truth in relation to existing states of bodies. That is, conditionals can be valid without being (denotatively) true, without containing any true proper proposition. Their validity is just a function of antecedent and consequent "not conflicting" (D.L. 7.73). For example, conceptual relations can obtain between fictional entities: If something is a centaur, then it has the legs of a horse and the torso of a human (Caston 1999, 197). Such relations license our application of truth-values to propositions, but, as Deleuze also notes, hypotheticals are less concerned with denotative truth or actual existence than with its conditions of possibility (LS 18).

Deleuze's interpretation of Chrysippus's hygienic paraphrases is novel. He thinks there are three levels at work, not two. There's the level of onto-logical, denotative truth, exemplified in definitions implying existence (e.g. "man is a rational animal"); there's the level of semantic truthconditions and concepts, what Deleuze calls signification, exemplified in conditionals that do not imply existence (you can talk sensibly about entities like Centaurs without implying they corporeally exist); and there's the *evental* or *problematic* level of the relations among events themselves. Deleuze calls the third level sense and sees the Stoics as attempting to articulate it. This would be neither the truth of denotations nor the truth-values of significations, but the "truth" involved in the conjunctions among events. Chrysippus's transformation of a hypothetical into a negated conjunction shows, Deleuze thinks, that Chrysippus was aware that the compatibilities and incompatibilities among fated events are not the same as the compatibilities and incompatibilities among concepts, and that he prefers negated conjunctions, or perhaps disjunctions, to hypotheticals as the means of articulating the (quasi-causal) relations among events.

Deleuze's third claim about the *De Fato* is closely related to the second one. In fact, it spells out the consequences of the distinction between conceptual and evental incompatibility. Deleuze says that Chrysippus considered astrology an attempt to articulate a theory of "alogical incompatibilities" (incompatibilities that don't have to do with concepts or signification), and "noncausal correspondences" (correspondences that cannot be reduced to relations of corporeal causes among themselves). Such correspondences and incompatibilities obtain between effects and other effects, or events and other events. Their mutual interaction is what Deleuze calls quasicausality.

The Stoics contend that divining the connections between events that occur by fate is possible by means of fatal "signs" (Latin: *signa*, Greek: *sêmeia*); divination depends on the idea that "certain things should be preceded by certain signs" (Cicero, *De Div.* 1.118). Although Cicero identifies divinatory signs with bodies like cracks in animal livers and bird songs, it is not insofar as these are bodies that they are signs. Rather, signs should be understood as propositions that come to be true of bodies, and thus a kind of *lekta*. The sign is not the liver itself, or even its cracks, but *that* the liver is cracked. The same goes for astrological signs: it's not the dog-star itself, but *that* the dog-star is rising. To the extent that such signs predict future events, divination is meant to describe a pure relation between incorporeal *lekta* qua events. Deleuze's claim that astrological divination embodies a Stoic theory of such relations appears to be on solid ground. The Stoics certainly thought that understanding the future by means of divinatory signs was distinct from understanding the relationships among causes proper:

Since everything happens according to fate ... if there were some mortal who could perceive in his mind the connection of all causes [*causarum omnium*], surely nothing would be hidden from him. For whoever grasps the causes of future things [*rerum futurarum*], he necessarily grasps what will come to be. But since nobody can do so except god, it is left to humans to divine by means of certain signs disclosing what will follow. (Cicero, *De Div.* 1.127, my translation)

The Stoics also distinguished themselves from Chaldean astrologers who thought that signs (propositions or *lekta*) were causally efficacious *in the same way* as corporeal causes (S.E. *M* 5.4-5; Plotinus, *Enn*. II 3.1). Long (1982) helpfully distinguishes between "hard" and "soft" astrology. The Chaldeans are hard astrologers since they believe that heavenly bodies (like the dog-star) are both signs *and* causes of human actions; the Stoics are soft astrologers, since they suppose only that the motions of the stars are signs concerning future events, and assign causality to another type of entity (bodies). In a passage that probably refers implicitly to the Stoics (Bobzien 1998, 166), Augustine contrasts those astrologers who say that the stars *indicate* (*significant*) human actions (presumably the Stoics) with those who say that the stars *make* (*faciunt*) human actions occur: "the [hard] astrologers do not usually say, for example, 'Mars in this position indicates a murderer', but 'brings about a murderer' [*homicidam facit*]" (Augustine, *Civ. Dei* V. 1. 191, 25-34). Such hard astrology represents precisely the kind of mantic necessitarianism that Chrysippus wanted to avoid by rephrasing the Chaldean oracle.⁷⁰

⁷⁰ Augustine's use of the verb *significare*, and in general the Stoic use of the term "sign," to describe relationships among propositions qua events, is distinct from what Deleuze calls "signification," the relationship between propositions and universal concepts. Rather, the astrological *signum* is what Deleuze

So, for Chrysippus, the relation between sign and predicted event is not necessitating to the extent that it is not *causal*. Deleuze appears to be correct in saying that Stoic astrology is a theory of "noncausal correspondences." Chrysippus maintains, however, that the sign-event relation is nevertheless universal (Bobzien 1998, 160; Caston 1999, 196). It might be supposed that it is therefore conceptual. For instance, in the case of Fabius, who was born at the rising of the dog-star, "the reason why the diviners could detect this theorem is that the divine power that governs the universe has arranged the world in such a way that births at the rising of Sirius are *universally* followed by deaths at places other than the sea" (Bobzien 1998, 167-8). The universality of these correspondences, however, is not in itself sufficient to make them conceptual. Bobzien argues that the universal relations of compatibility and incompatibility which astrology studies are only discovered empirically *a posteriori*. They are not analytically derivable from the identity of a concept (170). Furthermore, she maintains, on the one hand, that divinatory signs are "causally irrelevant," and on the other that "universal regularity is not sufficient for the conflict required in the truth-conditions [of a conditional]" (170). That is, Stoic soft astrology describes evental incompatibilities, that is, conflicts that are not yet robust enough to entail conceptual conflict or contradiction. It is a consequence of the fact that relations between events revealed by divination are thus distinct from both corporeal causes and conceptual relations that Stoic fate is distinct from necessity; since the sign is not a cause, "the necessity of the sign cannot be 'transferred' to the occurrent [i.e. the predicted event]." And since the compatibilities among events discovered by divination are not conceptual, "divinatory theorems thus—in principle—allow us to know the future without themselves necessitating the future" (170). Bobzien supports Deleuze's claim that for the Stoics the compatibilities and incompatibilities among events, which are treated by Stoic astrology, are neither causal nor logical. Despite their universality, divinatory relations between events are not conceptual in Deleuze's sense, and his claim that Stoic astrology is a theory of "noncausal correspondences" and "alogical [i.e., non-conceptual or non-contradictory] incompatibilities" is vindicated.

ANALYTIC AND SYNTHETIC PHILOSOPHY

Supplying the explanatory background and defending Deleuze's apparently puzzling or arch references to Stoic astrology actually tells us a lot about how he conceives of the philosophy of events defended in *The Logic of Sense*. The consequence of the distinction between corporeal

calls the "pure sign," identified with "sense expressed as an event ... [which] emanates from nonsense as from the always displaced paradoxical instance" (LS 176).

causality and evental quasi-causality, and between conceptual and evental compatibilities, is that the latter enable us to do something the former do not: namely, affirm divergences as divergent, affirm disjunctions as disjunctive, rather than treating them as contradictions or sterile impossibilities. Such a synthetic approach to divergences interprets the relations among events not as negative but as always positive, and in this way models the positive productivity of "true" problems. Deleuze's discussion of the noncausal and nonconceptual relations between events in Stoicism emphasizes how such compatibilities and incompatibilities are not analytically derived from the identity of a concept. Deleuze turns away from such analytic procedures and, inspired by Cicero, distinguishes three sorts of *synthesis*. First there are connective syntheses (*conexa*), which take the form of conditionals ("if...then"); second, conjunctive syntheses (*conjuncta*), taking the form "both ... and"; and third, disjunctive syntheses (*disjuncta*), negations of the second sort ("not both," "either ... or") (LS 174). The first kind of synthesis, Deleuze thinks, captures the typical form of conceptual conditioning (or the dimension of signification) and describes the mechanism for constructing a single series. The second and third kinds of synthesis, on the other hand, apply to both relations between events and the convergence and divergence between multiple series. In fact, Deleuze thinks that Chrysippus's rephrasing of the Chaldean prophecy makes a mantic proposition in the form of a *connective* synthesis change into the form of a *disjunctive* synthesis: "Not both: Fabius is born at the dawn of the dog-star and Fabius will die at sea."71

Deleuze's reading of Cicero's *De Fato* enables us to perceive more clearly what is at stake in his appropriation of the Stoic theory of events. Deleuze claims that "the whole question" of his appropriation of Stoicism "is to know under what conditions the disjunction is a veritable synthesis, instead of being a procedure of analysis which is satisfied with the exclusion of predicates from one thing in virtue of the identity of its concept" (LS 174). That is, Deleuze believes that Stoic fate provides the conditions for affirming disjunctive syntheses in terms that are, crucially, non-

⁷¹ Of course, Chrysippus does not in fact paraphrase a conditional as a disjunction, but as a negated conjunction (Mates 1953, 55). If D stands for "Fabius was born at the dawn of the dog-star" and S stands for "Fabius will die at sea," Chrysippus says that $D \rightarrow \neg S$ can be expressed as $\neg(D \& S)$. In order to get a disjunction from the latter, the Stoics would have to have understood De Morgan's laws, and specifically that $\neg(D \& S)$ is equivalent to $\neg D \lor \neg S$. This may be thought unlikely, because De Morgan's laws apply only to inclusive disjunctions and the Stoics treated disjunction as paradigmatically exclusive (S. E. *PH* 2. 191; the type of disjunction required in the five "undemonstrable" argument forms is exclusive: D. L. 7. 80-1; Cicero, *Topica* 46-7). Galen reports, however, that the Stoics also recognized deficient "quasi-disjunctions" (*Inst. Log.* 11-12) and Mates concludes the Stoics were clearly also aware of inclusive disjunction (1953, 51-3). Others (Bonevac and Dever 2012, 182) decisively state that the Stoics understood a version of the De Morgan's law according to which an inclusive disjunction can be expressed as a negated conjunction: $\neg(D \& S) = \neg D \lor \neg S$.

conceptual. In this way, Stoicism conforms with Deleuze's own philosophical assertion that concepts, and their relations of incompatibility called contradictions, are not primary but derived from a "primary, 'eventmental' incompatibility" between events (LS 170-1). Rather than *analytically* deriving incompatibilities on the basis of the identity of concepts, concepts themselves must be *synthetically* produced by prior "alogical" incompatibilities between events.⁷² Deleuze illustrates what he means with a zoological example. For a certain species of butterfly, there are two possible events that are incompatible with one another and have very different consequences: turning grey and turning black. These incompatible events are in no sense contradictions of one another: "if we isolate the pure events, we see that *to turn grey* is no less positive than *to turn black*" (LS 171). Deleuze credits the Stoic theory of fate with providing a theory of events which are all "positive" in this sense, since they are anterior to conceptuality and contradiction. Even disjunctive relations between events (e.g., the birth and death of Fabius) are understood as genuinely synthetic, which is to say positive, rather than negative. Only insofar as events are related to concepts, understood as forms of identity, can they be understood as negations of some other proposition.

Yet almost directly after he praises the Stoics for producing such an affirmative approach to disjunctive synthesis, Deleuze accuses the Stoics—basically without argument—of abandoning *both* of the critical features of their theory of events: the autonomy of quasi-causal interactions among events with respect to corporeal causality, on the one hand, and conceptual determination on the other. Curtly, Deleuze says: "It seems, however, if we follow the surviving partial and deceiving texts, that the Stoics may not have been able to resist the double temptation of returning to the simple physical causality or to the logical contradiction" (LS 171). The Stoics were not able to maintain their orientation with respect to surfaces, succumbing to the twin temptations of invoking corporeal "depths" and conceptual "heights" as explanations for events.

Even though Deleuze mentions no specific texts, his appeal to the scarcity of relevant material does seem to be justified. Long and Sedley, for instance, complain that "no satisfactory discussion" of the Stoic theory of relations among events themselves has survived (HP 1. 165). Bobzien, similarly, apologizes for her reconstruction of Chrysippus's argument about why divinatory theorems do not transmit necessity by saying "here we have long left the street of sober

⁷² This distinction between analytic and synthetic philosophy is Deleuze's own. In *Expressionism in Philosophy*, Deleuze contrasts the "analytic method" of Descartes, who prefers "inference and implication," to the "synthetic method" of Spinoza, whose "constructive or genetic" ambition to relate all effects to their adequate idea in God, leads him beyond the "analogical conception" of being (EP 155-67; compare DR 33-5, and chapter 2 below).

scholarship, and followed the unmarked path of conjecture" (1998, 173). Perhaps Deleuze's reconstruction of the Stoic theory of the interconnections between events is conjectural (he certainly doesn't make the effort to derive it in detail from Stoic texts), but there *are* texts that support Deleuze, and he can be seen as enhancing Stoic scholarship precisely by the temerity of his reading.

I am thinking in particular about a passage from Sextus Empiricus, which as Long and Sedley recognize, hints at a Stoic theory of the quasi-causality of events (HP 1.165):

[The Stoics] say, just as the trainer or drill-sergeant sometimes takes hold of the boy's hands to drill him and to teach him to make certain motions, but sometimes stands at a distance and moves to a certain drill, to provide himself as a model for the boy—so too some appearances [*phantastoi*] touch, as it were, and make contact with the commanding-faculty to make their printing in it, as do black and white, and body in general; whereas others have a nature like that of the incorporeal sayables [*asômata lekta*], and the commanding-faculty is impressed *in relation to them*, not *by* them [*ep'autoîs ... kai oukh hup'autôn*]. (S.E. *M* 8.409 = HP §27E, modified)

Sextus refers to the Stoic theory of rational impressions (D.L. 7.51), which, he reports, affect us in the manner of *lekta*. The percipient soul cannot be directly affected *by* them, since only bodies act in this causal way. Long and Sedley imply that incorporeal *lekta* thus affect the soul in a "cause-like" way without actually being causal. This passage should be read as a vindication of the idea that the Stoics have a theory of quasi-causality that has not yet been fully appreciated.

Before concluding, let me sum up and consolidate what I've said about quasi-causality. What Deleuze means by quasi-causality is the action of one event upon another, a relation among events from which relations among concepts and properly causal relations among bodies are in some sense derived. As an example, consider incorporeal transformations such as being awarded a professional qualification. These are, in one sense, the banal effects of bodily interactions. However, as events they exert a powerful influence on other events, such that other effects come to be truly predicated of other bodies. As an effect of corporeal causes, the predicate "is a doctor" or "is a licensed electrician" comes to be true of a person's body. In turn, that body is a cause to other bodies (for example, job applications) of further effects (such as being considered for employment). These effects are the proliferating senses of the name (whatever it is) that refers to the body. Although it is not genuinely causal, there is a causal-ish relationship between the first and second effect. Moreover, relations between events produce (or quasi-cause) relations among concepts (at least in some cases, they change what it's appropriate to infer from propositions involving concepts) and relations among things denoted (bodies). The quasi-causal relation between the two effects changes what things in the world a name denotes.

In this sense, as Clement of Alexandria noted, quasi-causality is the necessary condition, transcendentally required for run-of-the-mill causality. Yet sense is indeterminate, or as Deleuze says, animated by paradoxical instances. The realm of quasi-causal relations is the realm of stochastic or indeterminate compatibility and incompatibility among events prior to their articulation in terms of conceptuality or physical interaction. For the Stoics, astrology is the perennial example of quasi-causality in action. Two events in the life of an individual body, named Fabius, are linked in a quasi-causal relation: the fact that he is born at the rising of Sirius is a sign of the fact that he will die on land. The idea is that the former exercises some influence on the latter, insofar as the first event is a non-causal condition on the occurrence of the latter. The idea that Fabius might, in fact, die at sea is not *conceptually* forbidden by the quasi-causal relationship between the two propositions, which the Stoics call fate. Nevertheless the two events are inconsistent, even though one cannot be understood as a negation of the other.

When quasi-causality is understood in terms of sense, it can I think be understood as a way of describing the influence of historical accident. The various senses of a name (e.g. Aristotle), as I have noted, are not related to one another by having the identity of a concept as their condition. As Deleuze says, they are related by means of a paradoxical or aleatory element. The "unconditioned" precondition necessary to the occurrence of events is that they must occur in history. If the precondition of events was not contingent, if, for example, the precondition resembled that of which it is the precondition. There would be something like a pre-figuration or pre-formation of the event in its precondition. There would be a pre-existing guarantee of how the occurrence "would be" in the absence of historical contingency (cf. Allen 1993, 129). Deleuze wants to avoid that implication. He says so by insisting that the two "sides" of the "metaphysical surface" should not resemble each other. Deleuze interprets the Stoic "non-being" of incorporeals as exactly this absence of resemblance between the conditioned and its condition, reference and sense, being and non-being that is in a sense (and ultimately, solutions and problems). Once the implications of the Stoic ontological stemma are understood in the context of astrology and fate, Deleuze recognizes, the idea that events are non-existent *lekta* reveals itself as a theory of the contingency of events.

LEIBNIZ

After dismissing the Stoics, Deleuze turns to Leibniz (LS 171). Deleuze suggests that what the Stoics recognize in astrology, the compatibility and incompatibility among co-fated pure events, is what Leibniz recognizes in terms of the "compossibility" and "incompossibility" of worlds. For example, for Leibniz the predicates of being a king, of defeating Darius, and of dying at Babylon in 323 BCE are all possible predicates of what he calls a simple substance (in this case, the one known as Alexander the Great), which are "compossible" with all the other events in our historical world.⁷³ Inversely, the predicates of being the first man and of *not* sinning are "incompossible" predicates of Adam, since they conflict with other events such as Christ's redemption of humanity.⁷⁴ A parallel with Leibniz will help to explain both Deleuze's ultimate criticisms of Stoicism and his rhetoric of the "transcendental field."

Before creation, Leibniz thinks, an infinity of worlds are abstractly possible, yet God chose only one such world to actualize.⁷⁵ Leibniz claims that God must have a good reason for this choice, which lies in the principle of a maximum compossibility of predicates among different simple substances.⁷⁶ Such a maximally compossible world is the "best" or most perfect possible world. Deleuze criticizes Leibniz for introducing this regulating principle of plenitude among events, calling it a "theological exigenc[y]" (LS 172). But what Deleuze likes about Leibniz lies in the conception of simple substances or "monads." Monadic substances have a "notion so complete that it is sufficient to contain and to allow us to deduce from it all the predicates of the subject to which this notion is attributed."⁷⁷

This means, for Leibniz, that substantial notions are distinct and independent from corporeal causality. Leibniz describes simple substances as follows:

One particular substance never acts on another particular substance nor is acted upon by it, if we consider that what happens to each is solely a consequence of its complete idea or notion alone, since this idea already contains all its predicates or events and expresses the whole universe. In fact, nothing can happen to us except thoughts and perceptions. ("Discourse on Metaphysics" §14)

Leibniz conceives of substances as "views" on the universe, which is not outside the totality of such views, but a kind of great event generated by the resonance among them as their shared

⁷³ Leibniz, "Discourse on Metaphysics" \$8 = PE 40-1.

⁷⁴ Leibniz, "To Arnauld," July 14, 1686, = PPL 331-8.

⁷⁵ "To Arnauld," May 1698 (PE 71); "Monadology" §53.

⁷⁶ "Discourse on Metaphysics" §6; "Monadology" §55, 58; "On the Ultimate Origination of Things" (PE 151).

⁷⁷ "Discourse on Metaphysics" §8.

horizon of reality. Thus, in Leibniz's terminology, substances *express*, rather than act upon, one another.⁷⁸ This aspect of Leibniz particularly delights Deleuze: a theory of how the relations among events are prior to the interaction among bodies.

Deleuze also makes compossible relations among Leibnizian events distinct from conceptual relations (or signification), and claims that conceptual incompatibility (i.e. contradiction) is derived from evental incompossibility (LS 111). Although Leibniz himself believes that incompossibility is subject to the law of contradiction ("Monadology" §31), and that the compossibilities among predicates belonging to different monads depend on those predicates being contained in their concept ("Discourse on Metaphysics" §8, 13), Deleuze nevertheless says that for Leibniz "compossible' and 'incompossible' cannot be reduced to the identical and the contradictory, which govern only the possible and the impossible" (LS 171). In other words, (im)possibility is only conceptual (or has to do with already established laws of signification), and (in)compossibility is properly *pre-conceptual*, having to do with events insofar as the eventpropositions express a sense (rather than simply a signification).⁷⁹ Deleuze must think that the relation between the propositions "Adam is a sinner" and "Christ redeems Adam's sin" is a relation of sense between non-existent events in our maximally compossible world, analogous to the connection Frege recognizes between "born in Stagira" and "teacher of Plato" predicated of Aristotle. Deleuze's reading of the Stoics maps onto his reading of Leibniz: Stoic confatalia and Leibnizian compossibles are related neither by causality proper nor by concepts, but rather manifest paralogical relations among propositions in the dimension called sense.

Deleuze's criticism of Leibniz is that he introduces a regulatory apparatus that governs the series of events, making them maximally convergent, a highly artificial move (LS 172). To put it another way, Leibniz interprets divergence or incompossibility as negative (Bowden 2011, 87), as relations among Stoic events never are, rather than as an object of "affirmation as such" (LS 114, 172). Once you introduce a theological guarantee of compossibility, the convergence of all the series of events in every monad's life, incompossibilities appear as contradictions of theology. But Deleuze wants to affirm divergence, so he changes Leibniz somewhat: reinterpreting divergence and incompossibility as positive means divorcing them from their false alliance with conceptual entailment: divergent events don't contradict one another, that is, they don't exclude one another;

⁷⁸ "Discourse on Metaphysics" § 14-6, 35; "On the Ultimate Origination of Things" (PE 154); "To de Volder," 20 June 1703 (PE 175-6). Compare Deleuze: EP 324-30.

⁷⁹ See Smith 2005, 136, on Deleuze's criticism of Leibniz in *Difference and Repetition*, that Leibniz's interpretation of the principle of sufficient reason subordinates difference to concepts. Deleuze view is that Leibniz's theory of events amounts, weirdly, to a *non-conceptual* principle of sufficient reason.

the "negative rules of exclusion" ought not to apply here (LS 172). In a nutshell, Deleuze faults Leibniz for being unable to countenance disjunctive syntheses, which the Stoics theory of astrology was designed to affirm as positive and creative, as anything other than negative and conceptual.

Deleuze reinterprets a specific small point in Leibniz, who argued that an individual concept, say Adam, rigorously includes everything that ever happens to that individual. His correspondent Arnauld misunderstood him as thinking that some finite set of predicates would be enough to constitute an individual substance's concept. Leibniz responded that "all human events can be deduced not simply by assuming the creation of a vague Adam," that is, an Adam with a finite number of predicates.⁸⁰ Leibniz argues that finite concepts of "vague" substances are functions of our limited, human perspective, and that God's infinite understanding is sufficient to ascribe to Adam a "complete and determinate" concept, from which all events can be "deduced."81 Deleuze sees in this characterization of compossibility under the regulative ideal of God's choice Leibniz's self-misinterpretation of compossibility as conceptual and governed by contradiction (LS 114, 346 n.4). Instead, Deleuze embraces the "vague Adam," the idea of a generic "object = x," which he calls a "nomad" (rather than a "monad"). Being only partially specified means that a nomad Adam is "common to a number of incompossible worlds" (Bowden 2011, 74). Deleuze considers these types of vague persons to be the prerequisite condition for an affirmation of divergence as such, since they belie the *exclusivity* of worlds. Possible worlds are understood as exclusive only on the basis of thinking in terms of their conceptual conditions, not their preconceptual "uncondition." As Bowden explains, once Deleuze accepts such "vague," nomad persons, belonging to a number of possible worlds, then their "predicates are no longer the analytic predicates of individuals determined within a world and carrying out the *description* of these individuals. They are rather predicates which *define* objects = x synthetically, and open different worlds and individualities to them as so many variables" (Bowden 2011, 74). In other words, such vague individuals are germane to a synthetic philosophy that strives to embrace the synthesis of disjunctions. For this reason Deleuze says that Leibniz's recognition of the anteriority and originality of the event requires compossibility to be defined, in a new way, "at a pre-individual level" (LS 171). Relations between events are anterior to the infinite specification of predicates in an individual concept. Such a pre-individual "person" is what Deleuze had previously called a "paradoxical element" endemic to any structure with a minimum of two series (Bowden 2011, 79).

 ⁸⁰ "To Arnauld," May 1686 (PE 72); compare "Discourse on Metaphysics" §8.
⁸¹ "To Arnauld," May 1686 (PE 72-3).

Deleuze cleverly riffs on Homer: such "persons" are *Oudeis* ("no one") not Odysseus, "a produced form, derived from the impersonal transcendental field" (LS 116).

Three ideas hang together in Deleuze's reading of the Stoics: 1) the affirmation of divergence that the Stoics make possible; 2) the necessity of a transcendental field, or "surface" (which the Stoics provide in the form of their ontological stemma) and the necessity of its being impersonal; and 3) the priority of sense with respect to signification (or conceptuality). Deleuze wonders how to reconcile, or simultaneously affirm, the two divergent aspects of event-effects in Stoicism, their being derived from and dependent upon bodies, and their relative autonomy and even "genetic power" with respect to propositions. His solution is that these two aspects present the "opposition between simple formal logic and transcendental logic" (LS 96). While the first aspect of Stoic events (their being dependent and derived) is described by formal logic, Deleuze finds in the Stoic theory of sense a transcendental logic. Daniel W. Smith argues that we should understand Deleuze's turn to Leibniz in this way too: "Deleuze approached Leibniz from a resolutely post-Kantian perspective, returning to Leibniz in his attempt to redefine the nature of the transcendental field" (2005, 127).⁸² If it is to avoid "resembling" that which it conditions, the transcendental field must be impersonal. It cannot have the form (as it does for Kant) of a subjective identity (an ego), nor even the form of a Leibnizian individual notion (a monad); rather, it should take the form of a structure characterized by at least two series and set in motion, made to proliferate its terms, by a paradoxical or nonsensical element (like a nonsense word, sophism, or "nomad Adam"). Deleuze thinks of these as "pre-individual" elements. He summarizes this requirement for the transcendental field when he says, "the foundation can never resemble what it founds" (LS 99), since that would be to impose conditions that distort the picture of the relations between bodies, concepts and events. We can see what he has in mind when we consider that such resemblance would imply a pre-existing guarantee of how the occurrence should be in the absence of historical contingency, how it should match up or conform or correspond with a transcendent model. Deleuze thinks this is a non-explanatory abstraction, and fails to provide the genuinely genetic story he's looking for. It's like explaining the soporific effects of a drug by saying it possesses "dormitive virtue." It just pushes the real explanation of the genesis of the event away.

⁸² See also Smith 2001 and Boundas 2005. For the nature and scope of transcendental argumentation, see J. Bennett 1979 and MacIntosh 1969. Broadly, I understand transcendental arguments as formally similar to "[1] The categories of the understanding are the necessary conditions for the possibility of ordered experience. [2] Experience is ordered. [3] Therefore the categories of the understanding exist."

ANTI-SAGE

This comparison of Deleuze's attitudes toward the Stoics and Leibniz leads me to my last question about Deleuze's use of the Stoics: why does he find Stoicism ultimately unsatisfactory? Bowden interprets Deleuze's truncated criticism of Stoicism in terms of a renewed emphasis on the "body of Zeus" (corporeal or pneumatic causality) and the "mind of Zeus," as a conceptual principle "anchoring the 'determinations of signification' and ... a strong principle of logical contradiction" (2011, 47). But arguing for a re-substantivized Stoic Zeus seems only partially right. Regarding corporeality, Bowden's explanation is plausible, but regarding conceptuality, it looks like a version of Deleuze's criticism of Leibniz, not having much to do with the Stoics themselves. I think the most plausible explanation of Deleuze's rebuke to Stoicism is that he takes exception not so much to the Stoic conception of Zeus, but of the Sage.

The ideal morality of the Stoic Sage is grounded on his or her epistemological infallibility in never assenting to inapprehensible impressions (Cicero, *Acad.* 2.57). Earlier, Deleuze strategically ignored the fact that the Stoic theory of meaning is quite likely connected to the doctrine of *katalêpsis*, which is "onto-logical" to the extent that it implies a privileged relationship between representations and what "makes them true." Here, I think he makes this doctrine the basis of his criticism of Stoicism.

Deleuze characterizes the Sage in ethical terms: the Sage "'identifies' with the quasicause" (LS 146). This means that the Sage's ethical goal is "not to be unworthy of what happens" to him or her, and not to *resent* the event's occurrence (LS 149; Sellars 2006). It's not obvious, however, that Deleuze's ethical Sage is completely reconcilable with the genuinely Stoic Sage, as characterized in extant texts. The morality of the Stoic Sage has been understood as the cultivation of a cosmic perspective or identification with the whole (Long 1985, 30-1; Sellars 1999). Deleuze combines the Sage's identification with the quasi-cause and the dubiously authentic Stoic contrast between two "readings" of time, *Chronos* and *Aiôn* (LS 162-8).⁸³ What Deleuze calls "*chronos*" is a variably "vast present" (LS 161), capable, from the right perspective, of encompassing even the entire evolutionary cycle of the cosmos, the "cosmic present" (LS 61). Bowden wants to argue that Deleuze's Sage and the Stoic Sage are of a piece. He argues that, for Deleuze, the Sage's

⁸³ Sellars has argued (2007, 193-200) that the *chronos/aion* contrast in Deleuze, which cannot be found in the texts attributed to early Stoics like Chrysippus, derives from Victor Goldschmidt's reading of Marcus Aurelius, a reading which is criticized by Hadot (1998, 131-7). Nothing in my reading of Deleuze on the Stoics depends on this supposedly fundamental contrast.

epistemological infallibility leads to a comprehensive representation (*katalêptikê phantasia*) of the present "total 'conjunctive' cosmic order" (Bowden 2011, 38). Bowden makes the Sage seem Deleuzian by arguing that the identification with the cosmic order means that the Sage's comprehensive representations "envelop" something "which [they] cannot, strictly speaking, represent," and that his or her ethical posture consists of "living in accordance with the event which never finishes coming about" (41, 43). I diverge from Bowden, who seems to conflate the real Stoic Sage and the Deleuzian version of the Sage, which differ in one crucial respect. Identifying with the quasi-cause is not the same as identifying with the total cosmic order. The latter move, which may be that of the authentically Stoic Sage, is no better, from the point of view of Deleuze's reading of Stoicism, than placing theological or subjectivist restrictions on the behavior of events. Identifying with the cosmic order makes the transcendental field into an avatar of the Sage individual.

Instead, Deleuze unwittingly follows the heterodox Stoic Aristo of Chios by identifying the Sage with an actor (LS 147, 150).⁸⁴ Deleuze plays on the implied distinction between an actor (whose character is a superficial effect) and a non-actor (whose character is a determinate inner nature), which is in turn isomorphic with the Stoic distinction between fate and necessity (necessity being the work of perfect or sunhektic causes, like character). Deleuze's actor-Sage does not, however, read from an already written script, but extemporizes. I think the defining feature of Deleuze's Sage lies in the idea that the actor's present, far from being the "vast" present of the whole existent cosmos, is "the most narrow" (LS 150), the elusive "instant," which Deleuze explicitly identifies with the non-existent "paradoxical instance or the aleatory point, the nonsense of the surface and the quasi-cause" (LS 166). Since his or her "use of appearances" has no substantial ground, this actor is far from the genuinely Stoic Sage, whose epistemological infallibility underwrites the traditional onto-logic of Stoic semantics as well as the temptation to apply conceptual requirements, such as the law of contradiction, to relations among events, which Deleuze thinks spoils Stoicism (LS 171).

CONCLUSION

Given that Stoicism offers an account of the quasi-causal relations among events (something that, for many, is far from obvious), Deleuze wonders *why* events enjoy this form of autonomy with respect to bodies, despite the Stoics' corporeal ontology. Events, he says, borrow

⁸⁴ D.L. 7.160; Porter 1996.

the characteristically unpredictable behaviour of the paradoxical "floating" elements embodied in any structure. Events do so because they are identified with the sense of a proposition, and sense, from the dialectical perspective of both Stoicism and structuralism, is kept distinct from reference by a lack or incoherence between two series, the series of events or sense, and the series of beings or reference. Minimally, there are multiple senses of any given *denotandum*. I suggested that, although Deleuze uses Frege's word "sense," he does not understand the concept as Frege does. The connection between the Stoics and a theory of sense is more likely mediated by Meinong and Russell.

Deleuze's reading of Stoicism appears against the background of an investigation into the "truth" of problems, their capacity to rouse thought from its dogmatic slumbers. If Deleuze's appropriation of the Stoics were designed to help him articulate a fundamentally nonreferential semantic theory—for example, a theory of the conditions under which it is appropriate to apply different truth-values—then the fact that the Stoic theory of meaning is not as "nonreferential" as he would like would be devastating to his reading. Luckily, Deleuze is not interested in picking up a semantic theory from the Stoics but rather a theory about the "truth" of problems. He thinks the Stoics provide a theory of the productivity of events (sense) in relation to other propositions (other events). It is not fatal, therefore, to Deleuze's reading of Stoicism that the Stoic theory of meaning is, in reality, grounded by an epistemological onto-logic in the doctrine of *katalêpsis*. Deleuze finds the Stoic theory of the capacity of events to be generative in their doctrines of fate and astrology.

In Deleuze's neo-Stoic fatalism, events are quasi-causally responsible for the occurrence of other events. Furthermore, such relations among events are animated by "paradoxical elements" or "floaters," a concept Deleuze borrows from mid-century French structuralism but which he also sees anticipated in Frege's "On Sense and Reference." These elements prevent there being a straightforward one-to-one correspondence between events and the bodies they happen to. Deleuze calls the way the relations between events (quasi-causalities) include these elements the "force" of events and also their "autonomy." The best way to interpret this understanding of the relations among events independent of relations among bodies and concepts as a theory of the influence of historical contingency on what happens. The various, proliferating senses of a reference (events that happen to a body) are not analytically inferable from one another. This pre-conceptual, subrepresentative relation among things that happen is the necessary precondition of there being conceptual relationships among concepts as well as causal relationships among bodies, to the extent that events produce concepts and denotations in their wake. I have characterized the theory

of "incorporeal transformations" as an example of such production. Since relations among events are a necessary precondition of other kinds of relationships (among bodies, among concepts) with which we are more familiar, Deleuze says the Stoic theories of the relationships among events (fate and astronomy) involve a "transcendental logic."

The Stoic ontological stemma—the division of reality into existent and non-existent things—means that the relations between bodies and bodies (causality), bodies and names (denotation), and even relations between propositions and concepts (in the hypothetical mode of implication), all require *something* as their condition. Deleuze thinks what they require is sense, a fourth propositional dimension, which ought actually to be identified with the "unconditioned," as sense borrows the stochastic character of nonsense elements. The main difference between the three kinds of compatibilities and incompatibilities (corporeal, conceptual, and evental) revealed by Stoicism is that the first two are subjected to specific laws and rules of convergence, while the third is the closest approximation of the completely deregulated "ideal game" (LS 58-65). The Stoics perceive that the rule-bound relations among terms (corporeal causality and conceptual implication) transcendentally depend on non-rule-bound, historical relations between propositions in the dimension of sense. To put it otherwise, the transcendental logic of sense that proves the necessity of animating nonsensical elements entails reopening the question of "absolute necessity," and making it depend on "the contingency of an encounter" (DR 139). The necessity of such contingency is part of the "truth" of problems.

The Stoics' conceptual innovations allow them to do something that Deleuze thinks is unprecedented, namely, to affirm divergent events insofar as they diverge, rather than making divergent events exclusive of one another. Such affirmation treats divergent events as positive and indeed productive like "true" problems. Deleuze claims that the evidence for attributing this move to them lies in the account of Stoic astrology in Cicero's *De Fato*, where events are affirmed even in their disjunction, rather than interpreted negatively, for example by making one event the negation or contradiction of another. All events are positive. Rather than an analytic philosophy in which the relations among events derives from the preexistent identity of a concept, the Stoics offer a *synthetic* philosophy that shows how the identity of concepts themselves must be created or produced by pre-conceptual affiliations among multiplicities that don't necessarily have anything in common. Ph. D. Thesis – M. Bennett; McMaster University – Philosophy

CHAPTER 2

Aristotle: Generic Differences

Nothing is an object *for us* unless it presupposes the sum total of all reality as condition of its possibility. In accordance with a natural illusion, we regard as a principle that must hold of all things in general that which properly holds only of those which are given as objects of our senses. ... We dialectically transform the *distributive* unity of the use of the understanding in experience, into the *collective* unity of a whole of experience. – Kant, *Critique of Pure Reason* A582=B610

IN CONTRAST TO the Stoics and the Epicureans, whose philosophical systems provide positive models for the philosophy of events and problems Deleuze advocates, his attitude toward Aristotle is basically negative. According to Deleuze, Aristotle erred in his conception of difference, and the influence of this error has stymied attempts to develop a way of thinking where difference plays the primary role and not a merely ancillary one. Nevertheless, Deleuze's readings of Aristotle's metaphysics and biology contain insights that would be at home among mainstream commentaries on Aristotle. For instance, he argues that Aristotle's conception of the equivocal application of the predicate *being (to on)*, which he glosses as the theory of the "analogy of being," must be understood within the context of Aristotle's logico-biologico-metaphysical theory of generic difference, that is, the theory of differences between those self-identical conceptual sets known as genera (genê). If so, then Aristotle's ambition to ground a science of "being qua being" on a central, organizing application of the equivocal predicate *being* fails. There is no such core sense among genera and hence there cannot be one for being. Deleuze's insights in his capacity as commentator are not always easy to perceive, primarily because his reading of Aristotle seems to collapse an important Aristotelian distinction between homonymy and analogy. We miss the subtlety and erudition of Deleuze's reading, however, if we pre-emptively chastise Deleuze for collapsing this distinction without understanding his motives for doing so.

Before we can understand and evaluate subtle insights about Aristotle, Deleuze's reading of Aristotle needs to be contextualized. As I said in chapter 1, what Deleuze calls "events" are what Plato calls "becomings." Events (*gignomena*) are comings-to-be (*geneseis*). On this basis, the theory of events that Deleuze extracts from the Stoics in the context of logic and the philosophy of language can be translated into the context of the old, and perhaps more familiar, controversies about *being* and *nature* endemic to ancient Greek physics and metaphysics. These are controversies over the correct application of the predicates "being" and "non-being" (*to on* and *to* $m\hat{e}$ *on*), and the notion of *phusis*, understood not as an aggregate or sum of natural things, but as that which, within a thing, acts as the source of its behaviour (cf. Collingwood 1945, 44). The Stoics introduced the supreme genus "something" (*to ti*), which encompasses both beings and incorporeal non-beings, as a means of sidestepping some of the problems associated with Eleatic controversies about being and Milesian controversies about nature. This introduction vindicates to some extent, as I said, the linguistic focus of the sophist Gorgias for whom "demonstrations say everything."¹ The Stoic genius lies in displacing, along Sophistic lines, the problems about being and non-being into the realm of logic and language. In other words, the problem of non-being, which I discuss in this section, is the ontological version of the search for properly genetic conditions for nature, and the affirmation of disjunctive syntheses.

Deleuze engages with these old ontological and physical controversies in both *Difference and Repetition* and the essay "Plato and the Simulacrum" (LS 253-66) by discussing Plato's *Sophist* and Aristotle's *Metaphysics*. I will first discuss Deleuze's reading of the *Sophist*, and in particular the theory of difference (*to heteron*) presented in that dialogue, in which he transforms Plato into what one commentator has called an "uncanny ally" (Flaxman 2009, 8), enlisting Plato in the project of "overturning Platonism" (LS 256). I will then outline Deleuze's reading of Aristotle's philosophy of difference, which Deleuze calls "disastrous" for the history of philosophy (DR 32). I do this in order to show what Plato's theory possesses that Aristotle's lacks, and why that lack makes Aristotle especially unsatisfying for Deleuze. Finally, I answer the question of why Aristotle's philosophy of difference is "disastrous" by showing how Aristotle's physical and metaphysical attitudes resonate in his biological treatises. Building upon the work of Helen Lang (1994), I suggest that Aristotle's conception of the relation between nature, matter and (natural)

¹ Ps.-Aristotle, On Melissus, Xenophanes, and Gorgias, 980a9-10. As I have already said, I am following Cassin's (1980) reading of Gorgias' On non-being or on nature, especially its anti-Parmenidean slant. Cassin interprets the transitional line about "demonstrations saying everything" as particularly important for the overall understanding of Gorgias' position (1980, 62-5, 530-9). Victor Caston, however, claims that "blood is being extracted here from a turnip"; the line is only a "fairly anodyne transition" between parts of the treatise's argument (Caston 2002, 211 n.24). One virtue of Cassin's construal is that it adheres to the manuscripts reading, "τὰς ἀποδείξεις λέγειν ἄπαντα," where others amend the text (e.g. following Gercke, changing ἅπαντα to ἀπατᾶν) or treat it as if there were a lacuna after λέγειν (this latter strategy is the one adopted by Barnes in the Revised Oxford Translation).
movement is particularly objectionable to Deleuze. Deleuze's advocacy (with Félix Guattari) of an alternative theory of matter in *A Thousand Plateaus* ought to be read as a self-conscious response to the "hylomorphic" model of nature that follows from Aristotle's theory of difference.

DIFFERENCE AS "NON-BEING THAT IS IN A SENSE"

The narrative-argumentative arc in Plato's *Sophist* involves reforming the interlocutors' understanding of the predicate "not being" (to mê on). Theaetetus and the Eleatic Stranger set out with an explicitly Parmenidean conception of the sheer *non-being* of non-being, that is, the view that non-being is illusory and that saying anything positive about it is simply contradictory. This view is found to be inadequate to the definition of the sophist, which is the dialogue's ultimate goal. The interlocutors therefore develop an understanding of non-being as difference—that is, non-being as non-identity. This sense of non-being (or "is not") is involved in statements such as "Peter is not Paul" or "a cat is not a dog," which are treated as equivalent to "Peter is other than Paul" and "a cat is different from a dog." With this shift, Deleuze claims that Plato develops a conceptual tool more powerful than its creator intends. The conception of non-being as difference is capable of supplying a definition of the "false pretender as such," the sophist, but at the high cost of undermining the Platonic ambition of discriminating between true and false pretenders (LS 254). In Platonic jargon, these pretenders or rival claimants are imitators or copies, and what they imitate is the Platonic Form or *Idea* in its capacity as model. Good copies or true pretenders are called icons (eikônes), and bad copies idols (eidôla). The conception of non-being as difference presented in the Sophist, however, unleashes a kind of copy that is neither true nor false, neither bad nor good. It is not even right to call it a *copy*, since it calls the entire copy-model relation, and hence the Platonic theory of Ideas, into question. This is what Deleuze calls *simulacrum* (in Plato the word is *phantasma*).² Let's see how the *Sophist* accomplishes the conceptual reformation in question and how Deleuze sees it as providing a tool for reversing Platonism.

As I mentioned, the conversation in Plato's Sophist between Theaetetus and the Eleatic

² The "simulacra" that Deleuze discusses in the reading of Plato should not be confused with the Epicurean "simulacra" from Deleuze's essay on "Lucretius and the Simulacrum." In the reading of Plato, the word "simulacrum" translates *phantasma*, while in Lucretius' the Latin *simulacrum* translates Epicurus' word *eidôla*, which has a specific meaning in the context of atomic physics. Perhaps ignorant of, or purposefully ignoring, this philological distinction in order to bring out resonances between the Platonic and Epicurean philosophical systems, Deleuze groups together the essays on Plato's and Lucretius' and simulacra in the appendix to *The Logic of Sense*. Deleuze thus collapses, for the Greekless reader, two distinct Greek words in the technical term *simulacrum*. See Holmes (2012, 333) for a charitable treatment of Deleuze's "ingenious juxtaposition" of the two simulacra. I discuss Epicurean simulacra below in Chapter 3.

Stranger takes place in the shadow of a Parmenidean prohibition. After identifying the sophist as a kind of imitator (*mimêtês*; *Soph*. 235a), the Stranger distinguishes two types of imitation, and inquires under which division the type or Form (*idea*) of the sophist falls (235c-d). On the one hand, there is imitation that remains true to its model in terms of any number of relevant properties; for example, imitation that retains the proportions and colours of its original, like a photorealistic painting. The stranger calls this type of imitation the "likeness-making art" (*hê eikastikê tekhnê*). On the other hand, there is another kind of imitation employed by, for instance, sculptors of large-scale figures who intentionally distort the proportion). The Stranger calls such imitation "appearance of beauty (or balance, or even proportion). The Stranger calls such imitation "appearance-making" (*hê phantastikê tekhnê*; 236c). This second type of imitation refuses to remain true to its model for the purpose of creating effects—the effect of beauty or the effect of an "appearance-making," whereas between the (presumably quite narrow) thresholds of normal human scale it is treated as a product of "likeness-making," where no duplicity is required to transmit form from the model to copy.

If the sophist is to be identified with the appearance-maker, a fabricator of *phantasmata*, then the medium of his imitations is not visual or spatial but linguistic. The sophist's appearance-making art will involve, the Stranger says, a kind of "false speaking" (*pseudê legein*). The sophist's production of effects in speech usually involves saying that "that which is not is" (*to mê on einai*), or some variation on that formula (236e-237a). Maintaining that "that which is not is," however, means turning against Parmenides, who said that what is not (*to mê on*) cannot *be* in any sense (DK 28B7). Something will have to give: either the sophist is not what Theaetetus and the Stranger have determined him to be (a maker of *phantasmata*), or else Parmenides is wrong. The pursuit of the definition or Idea of the sophist therefore gives way to a subordinate question about the application of the predicate "what is not" (*to mê on*) (237b-c, 239b; cf. Owen 1971, 243). Understanding the sophist's appearance-making art in terms of saying *of what is not that it is* generates a series of celebrated paradoxes attendant on accepting both that the sophist says that non-being is, in some sense, and that non-being cannot in any way be (236d-241b). The thrust of these paradoxes is that

³ Such effects are pretty commonplace in sculpture and architecture, for example. Flaxman (2011, 166) remarks that Michaelangelo's *David*, which because of its size is inevitably viewed from a distance or from an almost anamorphic angle, creates the effect of normal-scale human proportionality by means of exaggerated proportions: extra large head, arms, etc. The Athenian Parthenon also, famously, creates the effect of rectilinearity by means of subtle curves in the stylobate and roof and the slight inward lean of the columns (see Haselberger 2005, 138-9, who even refers to this passage in the *Sophist*).

even though non-being is, as Parmenides said, "unthinkable, unsayable, unutterable, and unformulable in speech" (238c, cf. DK 28B2, 7-8), it looks like the sophist is thinking, saying, and formulating non-being in speech, by saying of what is not that it is.

The Eleatic Stranger argues that non-being is unspeakable in a classical, Parmenidean way, on the basis of the claim that the predicates being (*on*) and something (*ti*) are coextensive: "if you can't apply [the predicate 'that which is not'] to *that which is*, it wouldn't be right either to apply it to *something* ... we always apply this *something* to a being, since it's impossible to say it by itself, as if it were naked and isolated from all *beings*" (237c-d). In other words, "someone who does not say *something* says nothing at all [*mêden*]," and saying nothing at all is just the same as not speaking (237d-e; cf. *Tht.* 188e-189a and DK 28B8.7-13; 28B6.2; and 28B7.1). Unless we challenge our Parmenidean preconceptions, these arguments indicate that the sophist simply can't be applying the predicate "what is not" to things that are (by saying of things that are that they are not), because then he would not be saying anything; he would not be even speaking.

The way out of this impasse, for Theaetetus and the Eleatic Stranger, is to reject Parmenides' position. They do so by analyzing the latter into several subtheses that they criticize. After the Stranger claims that if the sophist is an appearance-maker, he is also a maker of "copies" (*eidôla*; 239d), Theaetetus asks what a copy is. The Stranger's response to this question makes it clear that the Parmenidean subthesis to be attacked is the idea that the relation between being and non-being is one of *contrariety* (*enantiôsis*). The following passage also points the way forward, suggesting a way to resolve the paradoxes about non-being:

- THT. What in the world would we say a copy is, sir, except something that's made similar to a true thing and another thing such as it?
- ES. You're saying it's another *true* thing like it? Or what do you mean by "such as" [*toioutos*]? [The Stranger is asking whether what Theaetetus has just said simply collapses the likeness-appearance distinction, according to which likenesses are true and appearances distortions.]
- THT. Not that it [the copy] is *true* at all, but that it's like [*eoikos*] the true thing.
- ES. Meaning by true, really being [ontôs on]?
- THT. Yes.
- ES. And meaning by *not true*, *contrary of true*? [*enantion aléthous*, by extension, contrary of "really being."]
- THT. Of course.
- ES. So you're saying that *that which is like* [to eoikos] is not really *that which is* [to on], if you speak of it as *not true*.
- THT. But it [sc. "that which is like"] is, in a way [pôs].
- ES. But not truly, as you say.
- THT. No, except that it really is a likeness [*eikôn ontôs*]. [In other words, Theaetetus is suggesting that while a copy is not "really real" (*ontôs on*), it is

"really a likeness" (ontôs eikôn).]

- ES. So it's not really *what is*, but it really is what we call a likeness?
- THT. Maybe *that which is not* [*to mê on*] is woven together with *that which is* [*to on*] in some way like that—it's quite bizarre.
- ES. Certainly it's strange. Anyway, you can see that the many-headed sophist is still using this interweaving to force us to agree unwillingly that *that which is not* in a way is [*einai pôs*]. (240a-c, trans. White, modified)

Theaetetus says here: 1) the copy is *like* (*eoikos*) the model; but 2) this doesn't mean that the copy is *true* in the way the model is true (namely, by being onto-logically grounded, or "really real"). Nevertheless, 3) although the copy is not "really real," it is not the *opposite* of real since it is "really a copy," and 4) this is how we solve the conundrums about being and non-being, by "weaving them together" in the way that copies and models are woven together here. The concession that an imitation, even a false one which makes that which is not seem to be, itself "really is" *qua* imitation suggests that non-being can be "in a sense" (*pôs*). In light of Theaetetus' promising suggestions, the Eleatic Stranger bites the bullet. To chase down the sophist, he is willing to commit a kind of "patricide" (241d), and to develop a patently non-Eleatic predicative system in which it is possible to say that "non-being is in a sense" without falling into incoherence and contradiction (241d-e), and in which, consequently, he and Theaetetus will be able to isolate the Form of sophist.

Many commentators have noted that the paradoxes concerning non-being arise from not only assuming that the negative particle ($m\hat{e}$) implies opposition (something Plato himself challenges, arguing by analogy that "not-large" does not necessarily mean the opposite of large (small) [257b]), but also that the non-being in question means "that which can *in no sense* be" (Malcolm 1967, 135-7; Brown 1986, 60-1). If Plato himself understands the second assumption, then his way of resolving the paradoxes should be understood as distinguishing between two senses of "non-being" in a way Parmenides did not: 1) non-being that is not in any sense (*to mêdamôs on*; Malcolm 1967, 135); and 2) non-being that is "in a sense" ($p\hat{o}s$). Heinaman (1983) calls the former "that which is predicatively nothing," since such non-being does not designate "something" (it is *mêden* and not *ti*). The alternative, more comprehensive understanding of non-being in the *Sophist* will treat it as *predicatively something*.⁴ The celebrated central section of the dialogue (the survey of theories about being: monist, dualist, materialist, idealist) is only a prelude to the ultimate goal of discovering how being and non-being are "woven together," and of determining *what something*

⁴ Cf. Owen 1971 and Frede 1967, who contend that Plato would not countenance anything being predicatively nothing.

non-being predicatively is. The dialogue eventually argues that non-being is predicated, and thus admissible into a broader post-Eleatic ontology, as otherness (*to heteron*), often translated as "difference" (256d-e).

It is important to understand how the dialogue arrives at this conclusion. After discussing the gigantomakhê, the philosophical battle over what sort of things are properly called "beings" (246a), the Eleatic Stranger argues for an all-inclusive ontological position that can accommodate both of the battle's principal combatants, the materialist "giants" and the idealist "friends of the Forms." If the materialist giants identify being with being a body (246a-b), this means that beings are capacities to act and to suffer (247e, 248c). It also means that beings are fundamentally characterized by change or movement (kinêsis), in actively changing or moving something else or passively being changed or moved (248a, 248e). If the idealist friends of the Forms, on the other hand, distinguish being (ousia) from coming-to-be (genesis) (246b-c), then this means they deny change (of the sort valorized by the giants), and affirm that what really and fundamentally is, is changeless. Here we recognize the great dualism of classical Greek philosophy, inherited from Parmenides, which Plato often invokes.⁵ According to the Stranger, neither the position of the "giants" nor that of the "friends" is acceptable, since both posit exclusions and limitations on the application of the predicate "being." Affirming being exclusively of change means that nothing remains unchanging, and that there are no stable identities, which are the necessary conditions of knowledge, understanding and intelligence (249b-c). Contrariwise, affirming being exclusively of what is changeless means that whatever is will have no life, understanding, or soul—a frightening prospect, Theaetetus admits (248d-249a)—since these are best understood as themselves processes or changes. And so, the Stranger claims, "that which is ... comprises both the unchanging and that which changes" (249d).

Why does Plato focus on change (*kinêsis*) in discussing the appropriate application of the predicate "being"? Kahn is surely right to suggest that in the *Sophist* the question of non-being is situated at the convergence of two axes—the "veridical" axis (being versus seeming) and the "stative-mutative" axis (being versus becoming) (1981, 111)—but this is of little help in understanding the argumentative detail at this point in the dialogue. Malcolm (1967) does better by pointing out that Plato needs to begin his discussion of the predicate "being" with a pair of genuine

⁵ Elsewhere Plato seems to be convinced by arguments about the non-being of what changes (e.g. *Tim.* 37e-38b; *Rep.* 476e-477b, 485b, 508d). Since the idealist position often ascribed to Plato himself and his followers (the "friend of the Forms") is just one of a variety of ontological theories canvassed, and far from being the culmination of the survey is actually criticized, the *Sophist* is a uniquely self-critical Platonic dialogue.

contraries (Plato calls *kinêsis* and *stasis* "*enantiôtata*" at 250a) because he relies on the following principle: whatever can mingle with both of two contraries cannot be either of them (Malcolm 1967, 140; cf. *Soph.* 252d, 254d, 255a). In order to get his expanded account of predication off the ground, Plato deploys the contraries *kinêsis* and *stasis*, movement and rest, arguing that since both *are* (and therefore that both the giants and friends of the Forms are equally short-sighted), "that which is" (*to on*) is distinct from both (250c). In other words, as we learned in the discussion of Parmenides, contraries can't "blend" with one another because they can't be predicated of one another. According to Parmenides, you can't say "non-being is." According to Plato (at least in the *Sophist*), you *can* say that "non-being is in a sense" but you can't say "changing it rests."

According to the Eleatic Stranger, therefore, it's all a matter of figuring out what blends with what, and what doesn't blend. The Stranger advocates a moderate position. It's not the case that nothing can blend with, or be predicated of, anything else. This is the excessively restrictive view of the "opsimaths" or late-learners (251b), a group which probably includes Socrates' student and proto-Cynic Antisthenes (Palmer 1999, 168), who claim that *x* is only correctly predicated of *x*. Opsimaths conclude, for example, that while "man is man" is true, "man is an animal" is false. Nor is it the case at the other extreme that everything is predicable of, or blendable with, everything else. Contraries furnish prominent examples of unblendables. Consequently, the Stranger thinks, some Forms are predicable of others, and some are not (252e). The situation is analogous to the letters of the alphabet: some letters, but not all, fit together in words. Pushing the analogy further, there are certain letters that are maximally blendable (the vowels), and thus forms that are maximally predicable of others (253a). These "vowel" forms are the so-called "great kinds" (*megista genê*) (254c), and the Stranger points out that the discussion thus far has already isolated three of them: change, rest, and being (*kinêsis, stasis*, and *to on*).

There is still no answer to the most important question about non-being, namely, what "something" it predicatively is. The Stranger wonders whether there are any "great kinds" other than the three mentioned. Since change and rest don't blend with one another, and since being blends with both, none of the three can be identified with any of the others. The Stranger clarifies the situation with the paraphrase "each of them is different from two of them, but is the same as itself" (254d). This gloss suggests the hypothesis that "the same" or "sameness" (*to tauton*) and "the different" or "difference" (*to heteron*) are fourth and fifth great kinds (254e-255a). In the interest of parsimony, perhaps, the Stranger considers potential objections to that hypothesis. First of all, it seems initially plausible that the same and the different are identical with rest and change.

Maybe moving or changing just means becoming different, and resting means remaining the same. If so, then we need only three and not five great kinds. However, the interlocutors establish that difference is not identical with change, nor sameness with rest. The argument is a kind of *reductio* (255a-b). Suppose that change were difference. The Stranger thinks this is a self-defeating supposition because difference and sameness and change and rest are both pairs of contraries, which consequently cannot be predicated of one another. If change were identical to difference, the Stranger says, then contraries *would* be predicated of one another ("change would rest and rest would change"), owing to the fact that difference already "shares in the contrary" of change, namely rest. That is, as the Stranger has already summarized (254d), rest is said to be both different and the same (it is different from being, and the same as itself). If difference were identical with change, then when we say "rest is different" (*sc.* from being), this would be tantamount to saying that "rest is changing," and contraries would be blending with one another incoherently.

In the *Sophist*, contrariety (*enantiôsis*) always implies the inability to blend, that is, the impossibility of contrary terms being predicated of one another. The dialogue's originality lies in denying that contrariety obtains in the case of being and non-being, but not in rejecting this fundamentally Parmenidean conception of contrariety. Plato trades the Eleatic contrariety between being and non-being for contrarieties between rest and movement, and same and different. "Contrary to x" means "not-x in any sense," and "different from x" (or "other than x") means "not-x that is x in a sense," i.e. predicatively. Theaetetus and the Stranger consider these arguments sufficient to distinguish rest, change, difference and sameness.

They consider, however, another possible objection to the notion there are five greatest kinds. It is possible, the Stranger suggests, that "that which is" and "the different" are identical, differing only in name (255c). The Stranger's manner of dealing with this potential objection is extremely important, since Deleuze himself will want to assert this equivalence: "it is being which is Difference" (DR 39). Saying that being is difference, for Deleuze, means recognizing that difference means determination (or more precisely, self-determination) in a sense that I will eventually refine.⁶ To say that being is difference means that difference is what makes things to be as they are. Difference, in Deleuze, does not mean the way things are not themselves, but the

⁶ At the outset of his characterization of difference, Deleuze says: "Difference is the state in which one can speak of determination *as such.*" He continues, "The difference 'between' two things is only empirical, and the corresponding determinations are only extrinsic. However, instead of something distinguished from something else, imagine something which distinguishes itself – and yet that from which it distinguishes itself does not distinguish itself from it. … Difference is this state in which determination takes the form of unilateral distinction. We must therefore say that difference is made, or makes itself" (DR 28).

genetic precondition of their becoming themselves.

Unsurprisingly, Plato would not agree. Being and difference can't be identical, for Plato, because they are *asymmetrically predicated* (255c-d). Among the things that are, some are said "by themselves" (auta kath'hauta), and some are said in relation to other things (pros alla). Plato thinks "different" has only a relative or "pros allo" use. The consensus among scholars has been that Plato is distinguishing between statements of identity and predications.⁷ That is, Plato means that talking about a being auto kath'hauta is just identifying it (e.g., "Peter is Peter"), while talking about a being pros allo is to predicate it of other terms (e.g., "Peter is great," "Peter is small"). On this reading, the contrast between being and difference can be rewritten thus: difference is fundamentally or exclusively predicative, while being can be predicative or identificatory. Difference is always said in a relative way. Saying "x is different" always involves a reference to something that x is different *from*. There is no other way to talk about difference. As the Eleatic Stranger says, if difference were said *kath'hauto*, in an absolute rather than a relative sense, then "some of the things which are different would be different without being different in relation to anything different" (255d), a consequence he evidently thinks is absurd. When Deleuze says "being is difference" he braves this absurdity. What he intends is to give difference an absolute rather than relative value.

So, having weathered the storm of possible objections to introducing "the same" and "the different" as fourth and fifth great kinds, the Stranger is able to sum up how these kinds blend together. Rest and change are contraries, so they do not blend; the same goes for difference and sameness. Four of the five kinds are predicated of or blend with both different and the same, insofar as they are the same as themselves and different from the others. The exception is difference, which is never said in a self-same way, since that would imply absurdities, and if it blended with all the other great kinds it would be indistinguishable from being. Being blends with both rest and change, because both rest and change are. Likewise, both difference and sameness blend with being, because they both are.

So what about non-being? After having defined the five great kinds, the Eleatic Stranger dramatically reveals that the nature of non-being is already implicit in what has been said. Non-being, which is in a sense, is difference. In other words, the sense in which non-being "is" is *as*

⁷ Owen influentially rejects the received view that Plato isolates an existential or complete "is" in the *Sophist*, but he concedes (*ad loc.* 255c-d) that Plato is probably distinguishing identity-statements from predications (Owen 1971, 256-57), and that this is the case regardless of whether Plato is semantically isolating two senses of the verbal form " $\epsilon\sigma\tau$ " (which Ackrill 1957 says he is, and Lewis 1975 says his is not).

difference. Difference is what non-being predicatively is. Take the first three *megista genê*, change, rest, and being: It's possible to say both "change is not rest" and "change is not being," but the sense of "is not" differs between the two cases. In the first case, "is not" means "is contrary to," and in the second it simply means "is distinct" or "different from" or "other than" (cf. 257b). The latter use is the "is not" of non-identity. The point is that change *is* in the predicative sense of "is something," even though it *is not* (identical to) being. So, as the Stranger puts it, "change really is both something that is not, but also a thing that is [*hê kinêsis ontôs ouk on esti kai on*]" (256d).

Finally we have a sense of non-being, namely, "being different from," which is adequate to the task of chasing down the sophist (258b), since it's no longer a problem to say that the sophist makes it appear that things that are not are. In this expanded system, there is nothing self-contradictory about the sophist's behaviour; he is not making it seem that sheer non-being is, but merely making it appear that *different* things are. This expanded predicative system, involving the five greatest kinds, plus the distinction between an "is not" of contrariety and the "is not" of difference or non-identity, is able to accommodate Theaetetus' intuition that copies "are not" in the strong, contrarian sense. They are not real or true in the same way their models are (*ontôs on*), but they still "really are" insofar as they "are not" (*qua* copies), according to a more relaxed conception of non-being as difference.

PLATO AGAINST PLATONISM

According to Plato, one kind of copy is truthful; likenesses (*eikones*) depict what is as it is. Another kind is false; appearances (*phantasmata*) depict what is not as if it were. But in the reformed conception of non-being in the *Sophist*, where non-being is difference, appearances are just "non-beings" in the sense of differences, not in the sense of being totally non-existent. On what grounds can we still maintain that there are bad copies? This is Deleuze's question to Plato. What Plato calls *phantasmata*, and Deleuze calls simulacra, *are not* their models (they are not what is), but not in the sense that they are the opposites of their models. They are not unlike what is in a sense that would make them unreal and impotent. Rather, they are not (the same as) their models, meaning that they are simply different, other, not identical. Perhaps they are not modeled after anything and consequently don't owe their determinate characters to anything else. Deleuze thinks that to the extent simulacra say of difference that it is, they hint that it plays a positive, genetic, determining role.

Deleuze recognizes that Plato's Sophist discovers a way to say of difference that it is, but it

is important to understand this discovery properly:

The mistake of the traditional accounts is to impose upon us a dubious alternative. ... The alternative is thus the following: either [1] there is no non-being and negation is illusory and ungrounded, or [2] there is non-being, which puts the negative in being and grounds negation. Perhaps, however, [in the *Sophist*] we have reasons to say [3] *both* that there is non-being *and* that the negative is illusory. (DR 63)

Deleuze thinks the *Sophist* provides evidence that Plato discovered this "third" sense of non-being. In the dubious alternative alluded to here, the first option ("there is no non-being") is clearly the traditional Eleatic orthodoxy that Plato's interlocutors criticize in the Sophist: non-being is just sheer unspeakable nothing. The distinction important for Deleuze's reading of the Sophist is between positions [2] and [3]. Plato substantially reforms Parmenidean ontology in order to achieve a workable definition of the sophist, but if he just argues for [2], the thesis that "puts the negative in being" in order to "ground negation," he does not go as far as Deleuze thinks he can. The difference between theses [2] and [3] lies in the way [2] repeats the "grounding" gesture implicit in [1] but unjustifiably. In [1] being grounds itself and grounds all beings, leaving nonbeing completely groundless. In [2], it's the case both that being grounds beings (presumably this means something like identifications; e.g., "Peter is Peter") and non-being grounds nonbeings/differences (i.e., negative predications of the form "a cat is not a dog"). Deleuze thinks [2] is an inherently unstable and untenable position because it limits the activity of non-being (of difference) to a merely ancillary function without providing sufficient reasons for doing so. Why would non-being mimic being in this way, by "grounding" negations? If this is Plato's view, then Plato hasn't sufficiently explained why non-being is so well-behaved and knows its place so well. Deleuze ultimately thinks that in the *Sophist* Plato invents a conceptual tool more powerful than he himself realizes.

It's more likely, Deleuze thinks, that the thoroughgoing, consistent account of the sophist entails a position like [3], where "non-being is in a sense," but that's not the same as saying that there is a "negative in being" that explains negative predications. On the contrary, the world of the sophist who creates *phantasmata* involving statements of the kind "what is not, is somehow," effects an "un-grounding" (*effondement*) (LS 263; Flaxman 2011, 157). The best way to understand this "un-grounding" attendant on the discovery of the positive power that "non-being that is in a sense" has to characterize the making of appearances (*phantasmata*), is in Nietzschean terms: non-being that in a sense is, is beyond good and evil.⁸

⁸ Deleuze himself refers to *Beyond Good and Evil* (§289) at LS 263.

Copies can be good or evil. Good copies are faithful likenesses of their model. Bad (or "evil") copies are simulacra that distort or otherwise diverge from what they supposedly copy. However, that way of putting the conclusion remains attached to the original distinction between good and bad when it's no longer really appropriate, because, as Deleuze puts it, "as a consequence of searching in the direction [of the simulacrum] and of leaning over its abyss, Plato discovers, in the flash of an instant, that the simulacrum is not simply a false copy, but that it places in question the very notions of copy and model" (LS 256, translation modified). How so? Once non-being is no longer determined as the *contrary* of being, then there are no grounds for distinguishing between being and non-being in the way that is still involved, for example, in position [2]. As I have said, Plato's Sophist trades the Parmenidean contrariety between being and non-being for the anti-Heraclitean contrariety between movement and rest and the decisive contrariety between difference and sameness. It is no longer impossible to say "non-being is" or "being is not." So, given the way that being and non-being blend with all the other kinds, it can't simply be the case (as [2] implies) that identity is a function of being and non-identity (or difference) a function of non-being, since being and non-being operate everywhere in tandem. The consequence of this reformed scheme, Deleuze thinks, which is glimpsed in Plato without being avowed or come to grips with, is that identity must be understood not as a function of being but rather of non-being, that is to say, of difference. In other words, difference is the genetic precondition of determinate identities.⁹

One way of showing that the pursuit of the sophist and the redefinition of non-being as predicative difference undermines the very notions of true and false copy is to demonstrate that the conception of non-being as difference causes true and false copies to become indiscernible. Take the difference between a philosopher and a sophist. The Idea of the philosopher (Socrates, for example) would be an Idea of the true imitator and the Idea of the sophist the Idea of a false one. The supposed difference between them depends on the notion that likenesses (good copies) owe their positive identities to the fact they imitate models truly. Paraphrased using Plato's *megista genê*, this is the idea that *being* is responsible for the relationship of *non*-identity between models and likenesses and *non-being* (or difference), only for the relationship of *non*-identity between models and appearances. Such a construal of difference, in order to maintain the distinction between good and bad copies, is severely limited without good reason. It makes non-being totally relative to

⁹ At this point in *Difference and Repetition*, Deleuze points out that the non-being involved in the expanded predicative scheme of the *Sophist* is not simply difference relative to fixed identities, which would be a negative or "mere" difference, but the "being of the problematic" (DR 64). I will explore this conception of the problem as a kind of non-being, especially in relation to the notion that difference is determination, in Chapter 3.

being and assigns it a merely negative role. But the distinction is untenable. We can see why when we consider that appearances have some positive, determinate identities too. For example, the climactic definition of the sophist is: an ironic imitator making short speeches in private (*Soph*. 268a-d). Why not rather say, as Deleuze would have it, that appearances owe their positive determinacy from their being different, rather than their *not* being the same? If the distinction between good and bad copies is untenable, it's no surprise that the final definition of the sophist, at the end of the dialogue, "can no longer distinguish him from Socrates himself" (LS 256). If the positive character of the philosopher is indistinguishable from the positive character of the sophist, why suppose that these are generated by different kinds of copying, or "grounded" by different principles?

The fact that "an ironic imitator making short speeches in private" sounds like a description of Socrates himself would be just a coincidence if Plato's interlocutors were still able to avail themselves of a distinction between the way that being grounds true imitators (likenesses) and non-being grounds false imitators (appearances). Although Plato may think this distinction is still intact, and that he can rely on a position like [2] to distinguish (for example) Socrates and the sophist, Deleuze thinks that the distinction has evaporated. Socrates and the sophist both emerge, so to speak, from the same background, which is not that of Plato's being, which can be said in two respects (both self-sufficiently [*auto kath'hauto*] and relatively [*pros allo*]), but rather the background of non-being or difference, which is spoken in only one respect. In this way, Deleuze thinks, Plato has unwittingly provided a powerful conceptual tool for the "reversal of Platonism" (LS 256).

What Deleuze calls "Platonism" is inseparable from the so-called method of division, whose purpose is to "select lineages" and to "distinguish pretenders" (LS 254; cf. DR 60). Deleuze understands Platonism as a kind of reaction against its own social and political conditions. Athenian democracy was characterized by the possibility of "universal claimancy" (Flaxman 2011, 119-20), meaning both that anybody can claim anything and that a given person can claim everything. In Plato's dialogues, the sophists appear as claimants to everything, to universal expertise (*Soph.* 234b; *Rep.* 598d). In this context, Deleuze thinks, different intellectual factions and individuals fight to establish the legitimacy of their claims. Thinking becomes a kind of "competitive *agôn*" or "warrior theater" (CC 136). Plato is specifically involved in battle for legitimacy over the remains of the ancient Sage (*Sophos*) (WP 9): who has the rightful claim to *sophia*, the *sophistês* or the *philosophos*? Plato's reaction to his context consists, Deleuze thinks, in inventing an ingenious means for separating true and false claimants: the Idea (cf. WP 29). The Platonic Idea is Plato's means of regulating democratically de-regulated wisdom. Only those claimants whose claims truly reflect or embody the Idea are valid. The rest are separated off as false. The manifest duality in Platonism (between Idea and image—that is, between model and copy) exists for the sake of a "latent distinction" between good and bad copies (LS 257). Although the original condition of philosophy lies in the competitive or agonistic milieu characterized by universal claimancy, which Deleuze describes as an "immanent" condition (WP 9, 43, 88), Plato reacts against his milieu by inventing a "plausible philosophical meaning" for transcendence (CC 136), namely the transcendence of the Idea. The philosopher has a special role corresponding to the transcendence of the Idea, that of "rectifying" popular opinions by testing their relations to the Idea operating as a criterion of truth (CC 137). Deleuze calls Plato's invention a "poisoned gift" for the history of philosophy (CC 136), a reactive (in the specific, Nietzschean sense of this term) response to the de-regulated ferment of Ideas in classical Athens.¹⁰

Plato often presents Ideas as criteria for discriminating among claims by means of a myth, as for instance in the *Phaedrus* (246a-254e) or the *Meno* (81b-e), where the relationship between the human soul and the Ideas is explained by means of a story about the afterlife. But everything changes in the Sophist. On the one hand, there is no grounding myth in the Sophist (LS 256; Smith 2005b, 8). On the other hand, and more profoundly, the key difference between the *Sophist* and the other dialogues is the following: while other dialogues seek to define the *true* pretender (e.g., the true lover in the *Phaedrus* or the true statesman in the *Statesman*), the *Sophist* uses the same method recursively to define the "false pretender as such" (LS 256; DR 61). In order to do so, as we have seen, the dialogue's interlocutors have to develop an entirely new way of speaking about false speech and non-being. Deleuze thinks that although this expanded predicative scheme is capable of isolating the false pretender—so that we can say the sophist is an insincere imitator without committing ourselves to the contradictory view that he speaks falsely while saying nothing—it can no longer distinguish true from false pretenders at all, which had been the whole point of Platonism, and the entire criterial function of the Idea. To put it another way, the expanded predicative scheme in the Sophist gives difference (or non-being) a new and important role (nonbeing is no longer the opposite of being, but the opposite of the same or identity), but in so doing it

¹⁰ In Platonism, we might say, the reactive force exemplified in the Idea does not triumph by dominating other claimants, but it "triumphs as dominated" (NP 59), cutting other claimants off from their unforeseen potentials by de-legitimating them, thus silencing their voices on the philosophical stage. Cf. Flaxman 2011, 122-25.

undermines the typical Platonic goal of isolating the self-identical *as such*, that is, the Platonic Idea, which is supposed to "rectify" opinion by providing a criterion for verifying it (CC 137).

Other Platonic dialogues indicate that the Idea functions as a criterion on account of its pure self-identity, or what Gail Fine calls its exclusively "self-predicative" nature (Fine 1986, 82-3). For instance, if a dialogue is interested in the question "What is Justice?" the answer that Plato will find satisfying is not an instance of justice, some just thing, like a just person or a just act, but "the Just itself." In the *Phaedo*, for example, the Idea of largeness is called "Largeness itself" (*auto to megethos*) (102d). Not only is there no myth in the *Sophist* but there is also no Idea of the sophist, on Plato's own terms. There is no way to isolate the Platonic Idea of the sophist since the different *cannot* be said *auto kath 'hauto* (*Soph.* 255d) in the way that an Idea needs to be. The *Sophist* is then, as Deleuze says, an "extraordinary adventure" for Platonism. It succeeds as it fails and it fails as it succeeds. While succeeding to track the sophist down, the *Sophist* fails to isolate its Idea, precisely because difference *has no Idea*, no criterion for rectifying or verifying its various usages. Yet, the *Sophist* carries on as if there were an Idea of the sophist, as if there were an *auto kath 'hauto* predication of difference, which the dialogue explicitly denies. It even ends on an upbeat note, with Theaetetus claiming that they have discovered the proper definition of what the sophist is "truly and really" (*alêthôs ... ontôs*; 268c).

The purpose of this discussion of Plato's *Sophist* and Deleuze's reading of it is to provide some background for Deleuze's interpretation of Aristotle. Deleuze thinks Aristotle's approach to the discussion of difference is "disastrous" for philosophy (DR 32) precisely because Aristotle provides a sophisticated mechanism, in the wake of the *Sophist*, for salvaging the notion that deregulated applications of philosophically important predicates, like being, can be "rectified." After the giddy intoxication of Plato's *Sophist*, Deleuze says, Aristotelian philosophy sobers up (DI 101; DR 32, 59). In terms of the philosophy of difference, it is as if Plato's *Sophist* (albeit in a disavowed way) affirms [3], the thought that "non-being-that-is-in-a-sense" *qua* difference is positive, rather than negative, while Aristotle's philosophy of difference develops mechanisms for reaffirming [2], making differences negative and relative to positive identities.

HOMONYMY

Aristotle, like Plato, is concerned about selecting philosophically among rival claimants, and he has a new method for doing so. The same prephilosophical plurality of conflicting points of view, the same doxastic agôn, is in the background to Aristotle and Plato. Aristotle identifies the role of the philosopher as sorting among meanings of critical terms (like being, unity, the good, etc.) and trying to assess which are correct and which can be joined together (e.g., "whether Socrates and Socrates seated are the same thing").¹¹ He proposes to sort through rival claimants by means of a theory of homonymy, which is supposed to adjudicate in disputes over philosophical terms (Shields 1999, 4).

How does this method work? Aristotle distinguishes "synonymy" and "homonymy" at the outset of his corpus in its traditional order (*Cat.* 1a1-7).¹² The distinction involves an ancillary contrast between the name of a thing (*onoma*) and its definition, or as Aristotle puts it, the "account of its substantial being" (*ho logos tês ousias*). Synonyms have the same name and the same account. For example, *animal* is synonymous in the sentences "a cat is an animal" and "a dog is an animal," since the account of the dog's animality—having a perceptive soul, or whatever the case may be (cf. DA 413b1-4)—is the same as the account of the cat's animality. Homonyms, by contrast, have the same name but a different account. For example, *bank* is a homonym since it has at least two accounts; according to one, it is a place to deposit money, according to another, it is the slope next to a river (Shields 1999, 11). Aristotle also thinks *healthy* is a homonym in such usages as "healthy food," "healthy attitude" and "healthy body," because what it means for food to be healthy (perhaps, containing vitamins) is not the same as what it means for an attitude to be healthy (perhaps, looking on the bright side). One of Aristotle's most frequent examples of homonymy brings the discussion into the context of the Platonic distinction between models and copies: Aristotle says that a man and a picture (of a man) are both animals homonymously (*Cat.* 1a3).¹³

Shields aptly points out (1999, 11) that Aristotle's explanation of homonymy remains ambiguous as to the meaning of "different" in a phrase like "the name is the same but the accounts are different." Does "different" here mean that the accounts in question (1) have nothing whatsoever in common, or (2) don't completely overlap? Shields calls (1) "discrete homonymy"

¹¹ Met. 1004b1-4; cf. Phys. 185a21-6.

¹² It's hard to assign much importance to the location of the distinction in the corpus, given that the modern editions of Aristotle (including Bekker and the Revised Oxford Translation) are all based on the edition of Andronicus of Rhodes (first century BCE), which contains a number of treatises generally deemed pseudonymous (such as *On Melissus, Xenophanes, and Gorgias*), and also omits treatises attributed to Aristotle by Diogenes Laertius (D.L. 5. 22-27) (see Barnes 1995a). I don't think it's necessary for me to accept either of the predominant interpretive approaches to Aristotle's corpus, either a "unitarian" and "noncontextual" approach to the texts, where any passage of any treatise can be used to illuminate any other, or a "developmentalist" approach which relies on a speculative story about Aristotle's intellectual development. Shields, on whom I depend, accepts a kind of limited developmentalism, where the *De interpretatione*, *Categories*, both *Analytics*, and the *Topics* are "comparatively early," and the *Physics*, *De Anima*, and most of the *Metaphysics*, "comparatively late" (Shields 1999, 9 n.1).

¹³ Compare: PA 640b29-641a6; DA 412b20-22; GA 726b22-24; Pol. 1253a20-25.

and (2) "comprehensive" homonymy. This ambiguity is important, since it corresponds with the distinction at play in the *Sophist* between non-being in the (Parmenidean) sense of contrariety (*enantiôsis*), where being and non-being cannot blend or be predicated of one another and have nothing whatsoever in common, and non-being in the (Sophistic-Platonic) sense of just different (or non-identical), where being and non-being *do* blend, and have "something in common" to the extent that they can be predicated of the same thing. Aristotle's method of homonymy seems to be going over the same conceptual territory as Plato's discussion of "non-being that is in a sense," albeit in a new way. Aristotle confirms this suspicion when he claims, in the context of discussing the homonymy of the predicate "being" (*to on*), that because of being's homonymy "we say even of non-being that it *is* non-being" (*Met.* 1003b9-10).

Aristotle considers instances of discrete homonymy to be special cases of comprehensive homonymy. In the case of the homonym *donkey* (*onos*), which means both a kind of animal and a kind of machine (a pulley) (*Top.* 107a18-23), the two substantial accounts (*logoi tês ousias*) of donkey just happen to have nothing in common. Homonymy in this case, and in others like it (e.g., the homonymy of "dog," which is both an animal and a star, Sirius [*Soph. El.* 166a16]), should be understood as something like *mere* homonymy. When Aristotle speaks at times disparagingly about homonymy ("x is not x, except homonymously [*all'ê homonumôs*]"), he means homonymous in this *mere* sense.¹⁴ Such mere homonymy of this kind, since he thinks it's transparent to native speakers of the language and not likely to lead them into serious philosophical confusion (*Top.* 106a23-5). But not all homonymy is so innocuous.

First of all, homonymy is not merely a feature of language. In Aristotle, homonyms must be understood not as *words* but as *things* (Ackrill 1963, 71). For Aristotle, there's "no hard and fast distinction between senses of words and essences or real features of the world" (Shields 1999, 12 n. 7). The Greek expression *logos tês ousias* must be understood to cover both senses of words and essences, linguistic and realistic. It's likely that while discrete homonyms (like "donkey" and "dog") may be chalked up to the arbitrariness of the signifier, comprehensive homonyms more clearly evince a semantic-ontological continuity. Because homonyms are both linguistic and realistic, Aristotle treats being "homonymous" as equivalent to being "spoken many ways" (*pollakhôs legomenon*), an expression usually rendered "plurivocal" or "multivocal" in the

¹⁴ See, e.g., *DA* 412b10-15; *Pol.* 1253a20-25; *GA* 734b25-27; and *Met.* 1003a33-4, which I will discuss presently in the main text.

literature, and contrasted with "univocity."¹⁵ Part of Aristotle's purpose in developing a sophisticated doctrine of homonymy is to indicate that it's wrong to infer directly from plurivocity to "mere equivocity" or "rank ambiguity" (Shields 1999, 47).

Second, not all homonymy is transparent. Some homonymy "creeps in without being noticed" (*Top.* 107b6-7). This is especially characteristic of homonyms whose accounts overlap somewhat but not entirely, such as *health*, which, for Aristotle, is the paradigm of a comprehensive homonym (*Top.* 107b7-12; *Met.* 1003a35-b4). Being oblivious to homonyms can sometimes be a source of humour (*Soph. El.* 182b15-20), but it can also be a serious matter when homonymy "elude[s] the most expert," as when the homonymy of *good* eluded Plato (*NE* 1096a23-28) and when Parmenides overlooked the homonymy of *being* (*Soph. El.* 182b25-28; cf. *Phys.* 186a24-32).

Aristotle's most interesting philosophical move in the post-*Sophist* intellectual climate is to argue that despite the frequency of non-univocity among philosophical uses of important concepts, certain among these concepts are homonymous in a special way such that all their different substantial accounts are linked together quasi-systematically. The idea is that different uses of certain terms are associated by being related to some core instance that focuses the homonym like a lens and makes the various instances of the homonym, so to speak, convergent. Although such convergence is not enough to make the homonym straightforwardly univocal, the homonym nonetheless gains some of the properties of a univocal predicate by approximation. Shields calls such homonyms "core-dependent" (1999, 38-9).

A good example of a "core-dependent" comprehensive homonym in Aristotle is *life*. What it means to be alive (the *logos tês ousias* of "is alive") is something different for animals and for plants (*Top.* 148a26-31; *DA* 413a30-b12). In the case of "a plant is alive," being alive has to do with certain powers of the soul, for instance, the power to nourish itself autotrophically in the absence of powers of locomotion and perception. In "an animal is alive," by contrast, life means the animal's power of nourishing itself heterotrophically, and of moving itself and perceiving (cf. Murphy 2005). Gareth Matthews (1992) articulates Aristotle's account of life in terms of reproduction and survival of the species. According to his view, for Aristotle "what it means to say that an organism is alive is that it can exercise at least one psychic [soul] power; that is, at least one of the powers that organisms of its species must, in general, be able to exercise for the species to survive" (1992, 191). Matthews even compares Aristotle's psychological theory to Richard Dawkins's *The Selfish Gene* (1976): "it distorts things only a little to say, mimicking Dawkins,

¹⁵ Top. 1.15 passim; An. Pr. 25a37-25b2, and 32a18-21; Phys. 186a25-186b12.

that, in Aristotle's view, individual plants and animals, including human beings, are survival machines for plant and animal *forms*," where forms are understood as sets of psychic powers (1992, 193). Shields points out, however, that Matthews' interpretation fails to do justice to Aristotelian "core-dependent" homonymy. It unites the plurivocal, homonymous senses of *being alive* under one univocal sense, a gesture quite alien to Aristotle's method of homonymy (Shields 1999, 182). Shields argues that the accounts of life in Aristotle are genuinely multiple (and not secretly unified), but that they nonetheless relate to a core meaning and so exhibit a kind of "order in multiplicity" (1999, 39).

In the case of core-dependent homonyms like *life*. Shields suggests proceeding in two steps: first, establish that the homonym in question is not covertly univocal (Shields establishes the non-univocity of *life*, contra Matthews, by appealing to the life of god [1999, 184-88; cf. Met.1072b24-30]); and second, establish that the homonym is not so diffuse as to be a case of mere equivocity, where the plural accounts of the homonym fail to overlap at all. Shields accomplishes the second step by suggesting that the appropriate core-dependent homonymous definition of *life* should pick out a focal meaning of life as "intentional system" (cf. Met. 1072b26-7, on god), that is, a "system whose nature is accurately explained and reliably predicted by understanding it as engaging in certain forms of end-directed behaviour" (Shields 1999, 189). From intentional teleology of this kind we cannot infer directly to univocity because of the plurality of ends (god's ends are different from human ends, and from a plant's ends, etc.). About such systems we can nevertheless ask how successful they are in accomplishing their various ends. Because Aristotle is able to accomplish both steps in establishing the homonymy of life, Shields considers life "an especially fruitful application of the method of homonymy" (1999, 194), able to account for the diversity of living things without falling into an excessively monolithic conception of univocal life or an excessively dispersed conception where the accounts of different living things qua living have nothing in common.

Aristotle also considers being a core-dependent homonym:

There are many senses in which a thing may be said to "be," but they are related to one central point, one definite nature [*pros hen kai mian tina phusin*], and are not homonymous [i.e. not *merely* homonymous]. Everything which is healthy is related to health, one thing in the sense that it preserves health, another in the sense that it is a symptom of health [etc.]. ... So, too, there are many senses in which a thing is said to be, but all refer to one starting-point [*mian arkhên*]; some things are said to be because they are substances [*ousiai*], others because they are affections of substance, others because they are a process toward substance [etc.]. ... As, then, there is one science which deals with all healthy things, the same applies in other cases also. ... It is clear then that it is the work of one

science also to study all things that are, *qua* being. But everywhere science deals chiefly with that which is primary, and on which the other things depend, and in virtue of which they get their names. (*Met.* 1003a33-b18, translation modified)

Owen (1960) influentially claimed that Aristotle's recognition of a core sense, or a "focal meaning," of being caused him to change his mind about the science of being *qua* being. Aristotle had doubts early on about the possibility of a science of being, on account of its plurivocal subject matter, but shifted to a more optimistic assessment of its prospects.¹⁶ In the passage above, Aristotle seems to confirm this reading. The discovery that being is a core-dependent, and not just a mere, homonym means that a science of being is possible, even though the absence of a univocal sense of the predicate *being* entails that there can't be a Form or Idea of being (if the case is comparable with that of *the good*; cf. NE 1096a23-29).

Shields claims that Aristotle's account of the core-dependent homonymy of being is considerably less successful than that of the homonymy of life. A successful account of such homonymy would demonstrate that the predicate in question is neither a covert synonym nor a mere homonym. Shields thinks Aristotle fails to establish the homonymy of being because he fails to accomplish the first step. Aristotle does not, and indeed *cannot*, prove that being is non-univocal (Shields 1999, 220). If talking about the core-dependent homonymy of being is Aristotle's way of talking about "non-being that is in a sense," and hence about difference in the wake of the Sophist, then his failure to establish this homonymy has big consequences. If Aristotle can't establish the core-dependent homonymy of being, then he can have nothing to say about sophistic-Platonic difference. Given Deleuze's interest and admiration for the latter, and his disparagement of Aristotle's own theory of difference (which I discuss below), this is a decisive moment, not just for Aristotle, but, as Deleuze would put it, for the whole history of the philosophy of difference. Aristotle's application of his often fruitful method of homonymy to the discussion of being, coupled with the failure to establish the core-dependent homonymy of being, prevents him from being able to pursue the philosophy of difference in the manner Plato does, and *a fortiori* prevents him from making any advance on Plato in that area. It also forces Aristotle into the position of having to discuss difference on other bases in a way that, as we shall see, Deleuze considers regressive.

Since this is a decisive moment, we should slow down and carefully answer the question: why do Aristotle's arguments fail to establish the non-univocity of being? Shields interrogates five

¹⁶ See An. Post. 77a5-9, and 92b14, as well as Top. 121a16-19 for "early" Aristotle's doubts.

proposed approaches to establishing the non-univocity of being, finding them all wanting, before outlining a general problem for Aristotle that shows not only that he doesn't prove the nonunivocity of being, but that he cannot (1999, 261). I will discuss two of the former, and then the general problem. Among commentators on Aristotle's *Metaphysics* it is common to supply as the focal sense of ontological homonymy either (1) substance insofar as it is the category on which all the others ontically depend (cf. Cat. 2a33-2b6; Met. 1028a29-35), or (2) incorporeal or separated substance, i.e. the being of god, or (3) the doctrine of the categories itself as a formalization of irreducible ontological plurality. There is good reason for taking any of these three as the basis of ontological homonymy: (1) seems to be heavily implied by the passage quoted and what follows (Met. 1003a33-b18); (2) makes sense because if the science of being *qua* being deals chiefly with what is primary (*Met.* 1003b15) and what is universal (1025b9-10), then its focal object ought to be divine being, which Aristotle says is "universal in this way, because it is first" (1026a30-1); and (3) seems like a natural conclusion given the way Aristotle himself often directly infers from the doctrine of the categories to the plurivocity and even homonymy of being (e.g. An. Pr. 48b2-4 and 49a6-10; Met. 1017a22-30). Among commentators, Loux (2003, 169) and Barnes (1995b, 100) accept (1); Frede (1987b) makes an influential argument for (2); and Ross (1924) accepts (3), which Grice (1988) freely supplements, transforming it into a more sophisticated thesis.

I will deal with these three approaches to the core sense of homonymous being in reverse order, beginning with (3), the thesis that ontological homonymy follows somehow from the doctrine of the categories. Here is Grice's (1988) construction of an argument that might have convinced Aristotle, although it is nowhere attested:¹⁷

1. Existential statements (e.g. "Peter exists," "There was a noise"), like other simple declarative statements, attribute universals to subjects.

2. But if "exist" or "be" signified a single universal, it would signify a generic universal.

3. Being is not a genus (Met. 998b17-28).

4. Hence (from 2 and 3), "exist" or "be" does not signify a single universal, but a plurality of universals.

5. The plurality of universals is the set of categories (being a substance, being a quality, being a quantity, being a relation, etc.).

Grice makes Aristotle's argument hinge on the key premise that being is not a genus. Shields shows how this construal, although formally valid, is question-begging. Aristotle himself argues that being is not a genus (at *Met.* 998b17-28) on the basis of taxonomical features of his system, in particular the relations between genus, species, and differentia. He says, in effect, that being is not

¹⁷ My version of the argument is simplified, and derived from Shields 1999, 245-46.

a genus because if it were then the genus would be predicated directly of its own differentiae, and that doing so is illegitimate. That is, since differentiae *are*, being cannot be a genus. Shields notes that the objection to the idea that being is a genus already contains a reference to homonymy (1999, 252). In a parallel argument elsewhere (Top. 144a36-7) Aristotle claims that if a genus were predicated of its differentiae, then this would entail a plurality in the genus in question. In other words, if being were a genus then it would be predicated directly of its differentiae, and thus it would be homonymous: there would be one account of being for the differentiae, and another account for the genus. Therefore, being is not a genus. Grice's argument boils down to the claim that if being is not a genus, then being is homonymous (i.e., it signifies a plurality of universals, the categories, rather than just one). But Aristotle himself explicitly says (in something of a reductio mode) that if being is a genus, then being is (merely) homonymous. Grice's key premise (that being is not a genus) is defended as follows: i) If being were a genus then it would be possible to predicate the genus of its differentiae (since the differentiae *are*); ii) if the genus were predicated of its differentiae, then it would be homonymous; but iii) being is not homonymous; iv) hence, being is not a genus (Shields 1999, 255). Grice, on behalf of Aristotle, wants to prove that being is homonymous, but Aristotle uses the converse of that proposition ("being is not homonymous") in a supplementary argument that would establish Grice's key premise. Thus Grice thus puts Aristotle in an "awkward and untenable" position (Shields 1999, 255), and the most promising argument that would establish the link between the doctrine of the categories and the homonymy appears to fail.

In order to defend the thesis that incorporeal or separated substance is the focal sense of a core-dependent homonymous being, Frede (1987b) argues that the science of separate substance studies not just a different "kind of being" (in the way that cats and dogs are different "kinds of being"), but a "way of being" different from that of natural substances like cats, dogs, and humans (1987b, 84-5). Moreover, the "way of being" characteristic of separate substances is "one in terms of which all other ways must be explained" (84). Why? Frede explains that "separate substances turn out to be substantial forms and actualities without qualification, [while] the substantial forms of sensible objects have to be understood as substantial forms and actualities of a certain limited kind" (89). That is, natural or sensible substances, which are realized in matter, are substances only in a "qualified" sense—they are imperfectly actual (being made of matter implies unrealized potentiality) and have accidental properties associated with material embodiment. Shields, however, wonders what this distinction between "kinds of being" and "ways of being" boils down to. Take a pair of existential statements:

(a) The cat exists.

(b) The dog exists.

In Frede's terms, these only describe two *kinds* of being, presumably, because they can be paraphrased in the same (or a relevantly similar) way:

(a') There exists a perceptive, self-moving animal, a composite of material body and formal soul, that meows.

(b') There exists a perceptive, self-moving animal, a composite of material body and formal soul, that barks.

Frede must think that the statement

(c) The angel exists

should be paraphrased in a completely different way, bearing witness to the fact that we're dealing with here a different "way of being":

(c') There exists a disembodied, immaterial intelligence that is purely rational. Shields, however, is not convinced that this kinds/ways of being distinction is sufficient to establish that being is not univocal (1999, 239). Making the homonymy of being depend on the distinction between "ways" and "kinds" of being requires that "exist" should mean something different in these paraphrases. Shields remarks, however, that there's no reason to think that's so. Once we paraphrase the existentials, "exist" appears to be used in the same sense in (a') and (c'), even though *what* exists may of course be quite different.

Finally, regarding the thesis that substance, the category upon which all the others depend for their existence, is the core sense of being, Shields outlines a general problem with ontological homonymy (1999, 261-5). Although it is articulated in terms of the supposition that substance is the focal sense of being, this general problem would apply equally well to Frede's position that it is separate substance. Aristotle accepts, as a general rule, on the one hand, (a) that "non-synonymous things are all incommensurable" (*Phys.* 248b7), but on the other, (b) that beings are always commensurable *qua* beings. The first principle (a) appears to be derived from the insight that it's nonsensical to compare homonyms in terms of their homonymy. For instance, in the case of a discrete homonym, it's nonsensical to ask what is harder, a desk or a math problem, or in the case of a comprehensive (indeed, core-dependent) homonym, to ask what is healthier, a person or her workout. Aristotle holds (b) because he evidently accepts something like a "degrees-of-reality hypothesis" (Shields 1999, 264). For instance, he suggests, some entities are *more* existent, or more real, than others: while substance is primarily, or is most real, the category of relation *is* least among the categories. It is the least real, the least "in being," so to speak (*Met.* 1088a22-5, 29-34). Likewise, perhaps Aristotle thinks separate substance is more "real" than material substance (he certainly says the former is more actual). If Aristotle accepts some version of a "degrees-of-reality" thesis or if he accepts a hierarchy of ontic dependencies (e.g., the existence of qualities depends on the existence of substances), which there is overwhelming evidence that he does, then beings are comparable, can be measured in relation to one another, in terms of their being.¹⁸ Therefore, according to (a), beings are *not* non-synonymous. That is, beings are *not* homonymous. In fact, because they are all commensurable in being, they are synonymous and univocal (Shields 1999, 261).

To put this argument another way, although substances and qualities or relations are incommensurable to the extent that substance and relation have different *accounts* (*logoi*), this is not homonymy since they also have different names. The *being* of substance is, however, comparable to the *being* of relation in terms of being. There are certainly distinct kinds of *existents*, just not distinct kinds of *existence*. The upshot is that Aristotle simply cannot establish that being is anything other than univocal without giving up some of his favourite metaphysical theses—for instance, the degrees of reality of the categories and the ontic dependency of other categories on substance. As Shields puts it, "ontic dependence does not entail account dependence" (1999, 266). Certainly substance is ontically primary, but this primacy does not establish core-dependent homonymy, and the resemblance of the (plausible) former to the (indefensible) latter contributes to the latter's false plausibility. Aristotle himself seems to have been ensnared by the illusion that the resemblance entails something more.

HOMONYMY AND ANALOGY

In Aristotle, to say that a term is homonymous is to say it is plurivocal, or "said in many senses," without necessarily reducing it to mere equivocity, as if the homonym's divergent accounts had nothing in common. Homonymy is, thus, the proper contrast class to univocity, "being said in one and the same sense," a term which modern expositors of Aristotle owe to his medieval interpreters. In Aristotle, synonyms are univocal and homonyms plurivocal. Deleuze, I

¹⁸ Compare: *Cat.* 2b7-18 and 15a4-7, where Aristotle says that species is more existent/real than genus; 3b35-4a9, individual substances are equal to one another in terms of their reality; *Met.* 1002a4-8, a body is more real than a surface; 1029a6, form is more real than matter; 1029a15-18, both form and hylomorphic compound are more real than matter; 1077b12, bodies are more real than mathematical objects.

think, recognizes the important role of core-dependent homonymy in Aristotle, but he claims that Aristotle's emphasis on core-dependent homonymy and plurivocity, especially the plurivocity of *being*, commits him to assigning an important role to analogy (DR 33). The putative equivalence of the Aristotelian theories of homonymy and analogy explains why Deleuze feels entitled to contrast the analogy of being (the thesis that being is said in analogous senses of different things) with the univocity of being, the thesis according to which being is said in one and the same sense of everything it's said of (DR 36).¹⁹

Shields' conclusion that Aristotle fails to establish homonymy, in the case of the predicate *being*, since he cannot establish its non-univocity, would surely have delighted Deleuze. The thesis that being is univocal, which is quite alien to Aristotle's metaphysical-predicative scheme, does a lot of work for Deleuze. He considers it (a) a prerequisite for a renewed philosophy of difference that shakes off the Aristotelian legacy and is able to characterize difference as the condition of determination as such (DR 28); (b) the post-Aristotelian starting point for an ontological version of the theory of simulacra (DR 37; LS 263); and (c) a way to say, in the wake of Aristotle, that "nonbeing is in a sense," namely, as difference (DR 39).

A new way of talking about "non-being that is in a sense" is required, as far as Deleuze is concerned, because Plato's method of talking about it in the *Sophist* is effectively blocked by Aristotle. Plato's method produces a concept of non-being that is in a sense in the attempt to find a true definition by means of division (a paradoxical definition, as it happens, of the false claimant as such). Aristotle criticizes Plato's method of division on the basis that it is unscientific; it doesn't conform to Aristotle's standards of theoretical science, which proceeds by demonstration (*apodeixis*) operating by means of deductions or syllogisms (*An. Post.* 71b18-20).²⁰ Whatever necessity Plato's conclusions in the *Sophist* putatively possess is undermined by the unscientific arbitrariness of his method of division.

How, according to Aristotle, is demonstrative scientific knowledge guaranteed? To begin with, a demonstration productive of scientific knowledge (*epistêmê*) is a way of understanding the cause of whatever is under examination. For instance, knowledge of thunder should be presented in a definition stating the cause of thunder: thunder is noise due to fire being extinguished in the

¹⁹ Deleuze's admiration for the univocity of being derives from a reading of Duns Scotus and of Spinoza. I will say almost nothing about Scotus and Spinoza here. Much has already been said about Deleuze's debt to them. See Smith 2001, de Beistegui 2004, 227-43, and Widder 2009, for example.

²⁰ The Greek word "*sullogismos*" is often translated as "deduction" in the *Prior* and *Posterior Analytics*, where it has a much broader meaning than our word "syllogism," which is used today, more often than not, to refer to one specific type of deduction discussed in *An. Pr.* 1-6 (Smith 1995, 30).

clouds (*An. Post.* 94a4-9; cf. 90a14-15). A demonstration to this effect must be a valid argument from true premises that are "prior" to the conclusion (*An. Post.* 71b21-22), and the premises must either be, or be deducible from, first principles (*An. Post.* 86a13-15; cf. *Met.* 1013a14-16).²¹ Aristotle also says that premises, as well as being prior, are *amesa*, "unmiddled" (*An. Post.* 71b20), a term usually translated, correctly if misleadingly, as "immediate." Such premises have not been demonstrated (and indeed are not demonstrable), since any demonstration, being a kind of deduction or syllogism, involves middle terms (*An. Post.* 72b18-24). Aristotelian "middles," or middle terms, are terms present in the premises of a deduction but absent from its conclusion. For instance, "human" is the middle term in the syllogism "All humans are mortal; Socrates is human; therefore Socrates is mortal." Middles do a lot of work in Aristotle, as the lack of a properly explanatory middle term entails a false inference.²²

The important thing, then, about Aristotelian demonstration (*apodeixis*) is that it requires premises that are known by some means *other* than demonstration. Aristotle gives a couple of different accounts of exactly how these premises or first principles are supposed to be known. Aristotle devotes the last chapter of the *Posterior Analytics* to considering how primary, unmiddled truths come to be known (An. Post. 2. 19). He argues that they are not themselves innate, but rather acquired through perceptual experience and memory on the basis of our capacity for recognizing universals after a particular has been repeated a sufficient number of times (An. Post. 100a13-14). In contrast, in the *Topics* Aristotle offers another possible explanation and advocates drawing premises from "endoxa," or respected opinions, those "held by all or by most men or by the philosophers, that is, by all, or most, or the most notable of them" (Top. 105a35-b1). Supposing that they are known, it is also important to ask: how do we know they are true (Smith 1995, 50)? One way of validating the truth of premises or first principles is to identify them with definitions (*horismoi*), which are defined as accounts (*logoi*) that "signify the what-it-is-to-be [to ti ên einai]" (Top. 102a3). Aristotle's Latin commentators rendered this little phrase "essentia." So a definition is an "account of the essence of a thing" and thus necessarily true. Making definitions premises seems like a natural solution, since Aristotle does indeed indicate that definitions are

²¹ These first principles will, however, differ among different genera (*An. Post.* 1. 7) and between different sciences (*An. Post.* 1. 9, 1. 32).

²² As Aristotle indicates in an argument about determinism (*Met.* 1027a29-b14). The deduction in question is a hypothetical syllogism: "A man will die by violence if he leaves the house./ He will leave the house if he is thirsty./ He will be thirsty if he eats pungent food./ Therefore, if a man eats pungent food he will die by violence." Aristotle responds that, although man will die by necessity, the middle term "being thirsty" is not properly explanatory of why a man dies in the way that, say, the term "mortal" would be.

indemonstrable in the way that premises are supposed to be (*An. Post.* 92a5), and at least one way of understanding definition is as the "indemonstrable formula" (*logos anapodeiktos*) of essence (*An. Post.* 94a11; cf. 90b24).²³

The link between definition and scientific knowledge is key to Aristotle's criticism of Plato's method of division. Aristotle seems to accept a method of isolating definitions by means of division quite similar to Plato's (*An. Post.* 96b25), but to think that Plato did something wrong in his own divisions (*An. Pr.* 46a33-5). Plato failed to pay the required attention to middles. When it comes to sorting out "accounts of essence," Aristotle thinks that isolating essence is inseparable from isolating middle terms in their definitional demonstrations (*An. Post.* 90a1-2, 5-6, 35). The natural inference, which Deleuze makes, is that the weakness of Plato's deductions by division lies in their lack of a truly explanatory middle term (LS 254; cf. *An. Pr.* 46a31-2). So the lack of the correct middle terms in the definition of the sophist means that Plato has failed to isolate an account of its real essence: "when conclusions are drawn without their appropriate middles, the alleged necessity by which the inference follows from the premises is open to question as to the reasons for it. ... [D]efinitions reached by division invite the same question" (*An. Post.* 91b37-9, G. R. G. Mure translation). Aristotle thinks that Plato has no systematic way of giving the "reasons for" his divisions. Hence, there is no way of guaranteeing that they proceed by way of essential features and not by way of accidental features (*kata sumbebêkos*).²⁴

The lack of sufficient reasons for divisions, however, is precisely what Deleuze likes about Plato. There is something heroic, or "epic" in Plato's method of division (DR 60). In Plato, division is innocent in its incoherence, "idiosyncratic and improvisational" (Flaxman 2011, 145). As Deleuze says, the point of departure for division in Plato is not a distinct conceptual identity like a genus, but an "undifferentiated logical matter" or an "indefinite representing multiplicity" (DR 60). For example, the interlocutors in the *Sophist* initially characterize the sophist as an expert in acquisition, a category of expertise divided into acquisition on land (hunting) and at sea (angling). The sophist is placed in the first division, which then further subdivides into the hunting of tame animals and of wild animals (*Soph*. 222b-c), with a view to defining the sophist's expertise as "an art of acquisition, animal hunting, on land, hunting of tame animals (humans), hunting by persuasion … hunting of rich, prominent young men" (*Soph*. 223b). The point to notice is just that

 $^{^{23}}$ Although, to be fair, "definition" clearly has other senses in Aristotle, for example, as a deduction basically equivalent to a demonstration, differing only "in arrangement" (*An. Post.* 94a11-13).

²⁴ Cf. *Met.* 1038a12-26 on division by accidental predicates (*kata sumbebêkos*). Both Balme (1987b, 71) and Flaxman (2011, 139) reckon this is a criticism of Plato, who is not mentioned by name.

here in Plato's method of division, there are seemingly no rules to the procedure, no restrictions as to what division comes next. The "logical matter" that division takes up is not previously differentiated. Aristotle thinks this is a weakness of Plato's method. He even criticizes the middle terms "wild" and "tame," as they are deployed in Plato, as distinctions that fail to pick out an essential difference of subject matter (*PA* 643b3-9).

Aristotle, unlike Plato, introduces requirements about definitions and middles in the service of certain stipulations about the relations between forms and genera. As Deleuze puts it, division in Aristotle must conform to the standards of "specification," a relation among species (*eidê*) and genera (*genê*), the inverse of generalization (DR 59). Aristotle imposes rules on division. For this reason, Deleuze contends that in Plato's tracking down of the definition of the sophist and of "nonbeing that is in a sense," "The Idea has therefore not yet chosen to relate difference to the identity of a concept in general." For that reason Plato's method of division "has not yet given up hope of finding a pure concept of difference in itself" (DR 59). This hope has, however, been abandoned in Aristotle: "Aristotle indeed saw what is irreplaceable in Platonism, [namely, the way that division was not subordinated to pre-given distinct conceptual identities] even though he made it precisely the basis of a criticism of Plato" (DR 59).

It is because of the requirements Aristotle lays down for judging good and bad divisions or correct and incorrect middle terms that he doesn't accept the conception of difference in Plato's *Sophist*. Aristotle introduces rules and requirements for the scientific division of classes, and accuses Plato of ignoring them. Whatever conclusions Plato manages to generate (for example, about difference and non-being) by way of his unscientific method are suspect. As Deleuze puts it, in regulating division this way Aristotle preemptively makes difference relative to conceptual identities. Aristotle can't adopt Plato's way of thinking about difference as non-being-that-is-in-asense, which Deleuze admires, because Plato's method of arriving at it is at odds with Aristotle's commitment to ensuring that conceptual divisions correspond with certain pre-specified relationships among genera, species, and differentiae. And so, to Deleuze's mind, Aristotle gives up searching for a primitive concept of original difference (what Deleuze calls "difference in itself") in favour of treating differences as relative to the identical concepts available to our capacity for making judgments (DR 32, 36).

Deleuze formulates this divergence of "difference in itself" and difference relative to identity in terms of the contrast between *univocity* and *analogy*. The doctrine of the univocity of being, for Deleuze, is supposed to lead us away from Aristotle. Univocity affirms that being is said

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in one single sense, but it is said of things that differ intrinsically in every sense. With the univocity of being, differences are liberated from their internal relation to forms of identity, such as genus and species (Montebello 2003, 32-33), and so difference can be something positive and productive, even the condition of determination in general. In contrast, Aristotle's way of thinking about difference in terms of the relations among individuals, species and genera, is linked to his conception of the *analogy* of being: "the equivocity of being [in Aristotle] is quite particular: it is a matter of analogy" (DR 33). The idea is that, rather than being said in one sense, being is said analogously of everything it's said of. For example, Aristotle thought that everything that is is commensurable qua being. If you say a substance exists and a quality exists, comparing these two existential statements, for example by saving that the substance is more "in being" than the quality, depends on the fact that "is" is said analogously in these two cases. Deleuze recognizes that Aristotle's being is not itself *identical* to identity—it is not a form of identity, since it is not a genus—yet he ingeniously argues that Aristotle thinks of being in a way that indirectly depends on the suppression of difference. Deleuze says that analogy is itself the "analogue of identity within judgment" (DR 33). That is, analogy means a kind of higher-order form of identity, a way to diminish or block difference's power of determination. The emphasis on "judgment" here can be understood in terms of Aristotle's criticism of Plato's method of division, which I have just outlined. Suppose you ask on what basis Aristotle thinks we can assess the correctness or incorrectness of demonstrations or middle terms (for example, Plato's demonstrations in the Sophist). Perhaps it is an inborn capacity for recognizing definitions (as in the Posterior Analytics) or perhaps it's by reference to reputable *endoxa* derived from tradition or from respected philosophers (as in the *Topics*). Whatever the case, these are the doctrines that Deleuze would think attest to the importance of "judgment" in Aristotle.

Deleuze frames an alternative: thinking of being as univocal will conduce to a concept of difference in itself and will treat difference as positive and productive, but thinking of being as analogical will never get beyond treating differences as relative to already existent forms of identity. But there's a serious problem with Deleuze's construal of Aristotle's doctrine of being. Although Aristotle did use the term "*analogia*," and had a well worked-out theory of analogy, he never used the term to denote the core-dependent, or *pros hen* ("toward unity") homonymy (Aubenque 1978, 3), which Aristotle's doctrine of being clearly involves. In fact, Aristotle sometimes appears to *contrast* homonymy and analogy (*NE* 1096b27-28; Shields 1999, 10 n.3). Pierre Aubenque showed in *Le problème de l'être chez Aristote* (1962, 198-206) that it was a pure

and simple misinterpretation ("*contresens*"), however widespread, to link Aristotle's treatments of *homonumia* and *analogia*. Yet Deleuze appears to rely on this dubious linkage in as much as he conflates the analogy and the homonymy of being. If Deleuze relies on a classic misinterpretation, then his reading of Aristotle, as well as the polemic that motivates his praise of the univocity of being, is suspect.

What is the properly Aristotelian difference between analogy and homonymy? The doctrine of analogy is best explicated alongside the doctrines of homonymy and synonymy in terms of the relations between *genos* (genus or kind) and *eidos* (species or form) and among *genê* and *eidê*. Without defining the terms *genos* and *eidos* except in a completely relative and schematic way—a *genos* is a set of *eidê*—we can relate synonymy, homonymy, and analogy thus:

1) *Eidê* within a single *genos* x are related *synonymously* in terms of x. In other words, among such synonyms, x is univocal or "said in one sense." For example, dogs and cats (*eidê* of the *genos* animal) are synonymously animals.

2) *Eidê* which have the same name, y, are related *homonymously* in the absence of a common *genos*. For example, being is not a genus (*Soph. El.* 172a14-15), so the various senses of the predicate "being" are homonymous. They are *discretely* homonymous when there is no overlap whatsoever between the essential accounts of the *eidê* in question, *comprehensively* homonymous when there is some overlap among accounts, but not total overlap, and *core-dependently* homonymous when there is a focal-point or governing connection relating the *eidê*. In other words, among homonyms, y is equivocal or plurivocal, but not necessarily *merely* so.

3) *Genê* themselves are not subordinated to any higher generic unity. That is, they don't repeat the *eidos-genos* relation (a *genos* is a set of *eidê*) on a higher level, as if a, so to speak, supergenus (*hupergenos*) were a set of *genê*. Because *genê* are not subordinated to a supergenus, they are related to one another by *analogy* in terms of their properties. For instance, Aristotle says that biological *genê*, such as fish and birds, are related in terms of their *genos*-defining parts, by analogy: birds' feathers and fishes' scales are analogous (*PA* 644a16; cf. *PA* 653b35 and *HA* 486b17).

Along similar lines, Aristotle distinguishes between different sorts of unity, different ways in which things can be said to be "one."²⁵ Some things are "one in genus" (*hen kata genos*) (*Met.* 1016b33-34). Such oneness within a genus is synonymous because it applies to terms with the

²⁵ Unity is, Aristotle says, also *pollakhôs legomenon* (*Met.* 1052a15-16), and, like *being*, is not a genus (*Met.* 998b 25-30). Shields treats unity as a core-dependent homonym as well (1999, 174).

same name and the same substantial account (*logos*).²⁶ Other things are "one by analogy" (*hen kat'analogian*), when they are related "as a third thing is to a fourth" (*Met.* 1016b34-5). Aubenque (1978, 4) argues that "*analogia*" in Aristotle always recalls mathematical proportionality (e.g., 3:4) even when metaphorically transferred to proportional relationships between different *logoi* (cf. *NE* 1131a31-2). However we are to understand this last phrase, it is evident that unity by analogy obtains between things where there is no shared *logos*.

Unity by analogy is not only distinct from unity in genus (synonymy) but also from the "unity" (in scare-quotes) characteristic of core-dependent homonyms. Elsewhere, Aristotle discusses two other types of unity (*Met.* 1005a6-11). In this passage, Aristotle comments that being and unity (*on* and *hen*) are "probably not" universals (which is to say, genera) since they only possess unity in a certain sense, either as a consequence of their tending toward unity ("*pros hen*"), or their touching or being in contact ("*epheksês*"). The *tendency* toward unity, unity *pros hen*, which Aubenque calls "unity of convergence" (1978, 5 n.7), is not really unity at all. It is, rather, quasi-unity. While unity *kata genos* is unity in virtue of something else (namely, falling under a substantial definition), so called "unity *pros hen*" is only "unity" in virtue of approximating unity, which is to say *failing to achieve* it.

It is evident from this discussion of different senses of unity that Aristotle's understanding of analogy and of homonymy are distinct, even though both obtain in the absence of a common *genos*. As Aubenque puts it, analogical unity is the weakest form of unity (1978, 5); Aristotle thinks it is entailed by all the other, more robust kinds of unity (such as unity in genus), but entails none of them (*Met.* 1017a1-2). Homonymous quasi-unity, on the other hand, is not properly speaking even unity at all. Yet it is the latter, not the former, that Aristotle relies on most to help him sort through the most serious philosophical controversies. For my purposes, the important point is that Aristotle relies on homonymous quasi-unity, and not analogical unity, in introducing the science that studies "being qua being."

At this point two questions arise. First, why is the confusion of analogy and (*pros hen*) homonymy so widespread (according to Aubenque)? Second, why does Deleuze contrast analogy and univocity? Is Deleuze unthinkingly accepting a misinterpretation? Not quite. As we shall see,

²⁶ Aristotle also says that things can be one "in form" (*kat'eidos*) in virtue of having the same account or definition (*logos*). This might seem like a stronger candidate than unity "in genus" for being treated as synonymous. I consider both oneness in form and oneness in genus to imply synonymy, for reasons that will become clear below. Following Pellegrin (1986) and Balme (1987B), I avoid reifying *genos* and *eidos* as if they were restricted to permanent classificatory levels in anything other than a totally relative way—a *genos* is a set of *eidê*.

Deleuze is not just parroting the analogy/homonymy conflation. He is defending it in an original way. I will address the question about the confusion between analogy and homonymy with a basically historical approach before tackling the question about Deleuze's interpretation of Aristotle.

In his commentary on the *Metaphysics*, Thomas Aquinas explicitly glosses the plurivocity of being that he finds in Aristotle, on the one hand (correctly) as a middle road between univocity and mere equivocity, and on the other (apparently incorrectly) as a theory of analogy (In Met. XI. 3. 2197). Aquinas explicates ontological plurivocity in Aristotle by making reference to "different modes of relating" (diversi modi relationis) to a predicate (here, being). Elsewhere he calls the different modes of relation in question "conditions" (habitudines) (In Met. IV. 1, 535). Aubenque points out that these ways of construing, indeed hypostasizing, the things to which a predicate is applied bear witness to a clandestine theory of the "unequal aptitude to be related to substance" (1978, 8), here understood as incorporeal or divine substance.²⁷ Aubenque also draws a parallel between Aquinas' reading of Aristotle and Aquinas' own theory in De ente et essentia, according to which every finite, particular being (ens) participates differentially in infinite, universal being (esse), in proportion to the essence proper to that particular being (1978, 9). In Aquinas, importantly, the essence of a given entity is construed as a limitation, inversely proportional to its perfection, of a capacity to bear a given predicate. Aquinas, in other words, appears to rely on a principle according to which predicates are received by the recipient according to the recipient's mode of being (receptum est in recipiente per modum recipientis).²⁸ The aim of Aquinas' clandestine reading is, of course, to ensure the transcendence of divine substance (God) by restricting what terms it is appropriate to predicate of it. Aquinas aims to respect the "ultimately infinite distance between the anterior and the derivative" (Aubenque 1978, 10), and not to misunderstand or debase divine substance by applying to it predicates inappropriately similar to those applied to mere creatures.

Aubenque thinks that Aquinas is able to maintain a respectful distance between God and creature by means of a theory of the analogy of being that is projected back onto Aristotle. With this in mind, it is clear why Aquinas distinguishes between two kinds of analogy (*De veritate* q.2,

²⁷ These are my (uncontroversial) translations from Aubenque's French.

²⁸ ST Ia, q.84, a.1, corpus; cf. *In Met.* A. 10. 158. Aquinas claims to have derived the principle from Plato, who ignored some of its implications (*In Met.* A. 10. 167), but in all likelihood it is proximately derived from Porphyry (*Sententiae* 1. 10); see Hankey 2002. Aubenque agrees that Aquinas' identification of analogy and homonymy probably goes back to the Neoplatonists (1978, 12), but he singles out Simplicius (*In Cat.* 4. 18a-b) and Proclus (*Platonic Theology* II, 5).

a.11, resp.; cf. q.3, a.1, ad.7). On the one hand, he says, there is analogy of proportion (*proportio*), which describes, for instance, the proportional relationship between quantities such as 2:1 ("two is twice one"). On the other hand, the analogy of proportionality (*proportionalitas*) is a kind of second-order proportion, evident for example in the relation 2:1::4:2 ("two is to one as four is to two"). This second kind of analogy is no longer a relation between manners of being (modi or *habitudines*) but a relation between proportions themselves. According to Aquinas, only the latter analogy is appropriate in talking about God. Concretely, it is not appropriate to say both man is intelligent and God is intelligent (even if one says God is more intelligent, a million times as intelligent), since this is to obscure the genuine infinity of the difference between God and creature. It is, however, appropriate to say something like: Man's intelligence is to his essence as God's intelligence is to His essence (cf. Aubenque 1978, 10). As Aquinas puts it, in another succinct Latin motto: "finiti ad infinitum nulla est proportio," between the finite and the infinite there is no proportion.²⁹ But there *is* proportionality. Formulaically, Aquinas maintains that the proportion ∞ : x (where x is finite) is nonsensical, but the proportionality $\infty : \infty' :: x : x'$ makes sense, and can even be illuminating. Aubenque suggests that Aquinas' position is mathematically incoherent, because the relation between x and x' will be some finite *proportio*, but the relation between ∞ and ∞' , being a relation between two infinities, will not be finite. So at a second order of abstractness the unacceptable relation ∞ : x reappears, which runs afoul of Aquinas' own principle (Aubenque 1978, 11). Incoherence aside, the *proportio-proportionalitas* distinction does metaphysical and not mathematical work. It looks like Aquinas reads Aristotelian ontology as predicated on a theory of analogy (which is always proportional and mathematical, cf. Met. 1016b34-5), rather than a theory of homonymy (which is not proportional or mathematical), in order to minimize its dissimilarity to Thomistic ontotheology (Aubenque 1978, 12).

INTRA-GENERIC DIFFERENCE

Now we can turn to the specific question of why Deleuze contrasts analogy, and not homonymy, with univocity. We could answer this question quickly, if partially, by declaring that Deleuze reads Aristotle through the lens of Aquinas and the Neoplatonists.³⁰ But there is, I think, a deeper and more interesting reason why Deleuze defends the apparently dubious, not to say onto-

²⁹ ST Ia, q.105, a.8, arg.2; cf. Montagnes 2004, 75-6.

³⁰ In my opinion, there is certainly some truth to this suggestion. See, for instance, how Deleuze refers to Porphyry in explicating Aristotle's views (DR 308 nn. 2, 3), a gesture replicated by some of Deleuze's commentators (e.g. Smith 2001, 176-77; Flaxmann 2011, 144-45; de Beistegui 2004, 54), which is nevertheless singularly unhelpful for assessing the relation between Deleuze's views and Aristotle's own.

theological, conflation of analogy and homonymy. To see this, we need to take a closer look, as Deleuze does, at Aristotle's explicit discussion of difference (*diaphora*).

Deleuze observes that for Aristotle difference always means difference between forms within a common kind (DR 30). That is, Aristotle conceptualizes and speaks of differences as relative to identities, in terms of which the differences are articulated. For example, differences among species of birds are relative to the nature common to all birds (*PA* 644b2-3). This is the case, apparently, at various levels of expansiveness: differences always differ "in something else" rather than differing "in themselves" (cf. *Met.* 1057b35); they differ "in genus when they are differences in species, in species for differences in number, or even 'in being, according to the analogy' for differences in genus" (DR 30). Deleuze's phrasing here is important. He claims that Aristotelian differences are only said to be in relation to a generic unity (*hen*) that they presuppose.³¹ Even though there is a marked contrast between being, which is not a genus, and the genera (e.g., birds and fish) that are internally unified but only related to one another by analogy (since such genera are not themselves species of some super-genus), nevertheless both "unity in genus" and the "unity of analogy" are types of unity, even if the latter is rarefied and weak.

The contrast between (non-generic, non-unified) being and (unified) genera, informs (as I have already said) Aristotle's methodological use of core-dependent homonymy as a means of approximating unity in the case of being, in order to make it amenable to scientific analysis. Now, if being is a core-dependent homonym, and its senses are not unified but at least still organized by relation to a focal sense, then it is in fact incorrect to say that being is a unity by analogy (hen *kat'analogian*). Rather, it is only an approximate or quasi-unity. The relations among beings are homonymous and not synonymous, since beings are not subsumed under a genus of being, whose subclasses would be predicated univocally in terms of being. Similarly, kinds/genê/genera also are not unified by subordination under a superior genus. Their weak unity by analogy just means unity in the absence of a supergenus. These cases are close (beings are equivocal, there are many accounts of what it means to be, so beings have no genus; genera themselves have no superordinate genus), but importantly distinct. Perhaps we ought to distinguish between the (non-generic) relations among senses of being and the (non-generic) relations among distinct genera in the same way as Plato distinguishes between contrariety (enantiôsis) and otherness (to heteron), or Shields between "discrete" and "core-dependent" homonyms. On the one hand, genera among themselves are like Plato's contrarieties or Shields' discrete homonyms; they have nothing in common. On the

³¹ It's safe to say, I think, that in the passage I've just quoted, Deleuze is making oblique reference to *Met*. 1016b33-1017a2, on different types of unity, or a passage very like it.

other hand, being's senses overlap, though not completely, and there is some focal sense of being shared by all of them (although Shields thinks Aristotle cannot support this contention in the case of being). The implication is that only *mere* equivocals (like discrete homonyms) are unifiable by analogy.

Deleuze's phrase, that genera are unified to the extent that they differ "in being, according to the analogy," seems to collapse this subtle distinction between the (non-generic) relations among senses of being and the (non-generic) relations among distinct genera. Less charitably, we might say that his use of the phrase begs the question whether being is analogous by assuming that genera are unified *in* being in his argument about analogy.³² Nevertheless, I think Deleuze is more aware of the subtleties of Aristotle's arguments about the homonymy of being than he seems at first glance.

I will return to that claim in a moment. First, I want to defend Deleuze's reading of Aristotle's theory of difference. Aristotle's construal of difference as "in something else," that is, as relative to something in terms of which the different are comparable, makes sense when we consider that Aristotle's word "*diaphora*," translated by Deleuze as "difference," is in fact the word usually translated "*differentia*" in the logical treatises. Aristotelian differentiae are said relative to kinds or *genê*, in which capacity they are crucial for generating scientific definitions. The definition of *x* (finding the *logos* of the essence of *x*) is accomplished by isolating the appropriate genus and differentiae (*An. Post.* 96b25). For example, if *cow* is the object of a scientific demonstration, it will be correctly explained by isolating the appropriate kind ("horned animal") and specifying essential differentiae ("the possession of a third stomach and only one row of teeth") (*An. Post.* 98a14-19). Scientifically, differentiae are differences relative to a kind. This is the regime of what Deleuze calls "specific difference."

Another way of saying that difference is "in something else" that Aristotle licenses is to distinguish between the word "difference" (*diaphora*) and the word "otherness" (*heterotês*). While "difference" applies to things that are said relative to a higher-order identity (e.g., the unity of a genus), genera themselves are, among themselves, merely "other" (*Met.* 1054b23-30; 1055a26-7). Genera "have no way to one another, but are too far distinct and are incommensurable [*asumblêta*]" (*Met.* 1055a6-7). Deleuze is aware of this terminological peculiarity, noting that in

³² Parenthetically, the phrase "in being, according to the analogy," which Deleuze puts in quotation marks, appears nowhere in the sections of *Metaphysics* 10 that he refers to (DR 308, n.2), nor anywhere in that book. Nor does it appear in Porphyry's *Isagogê*, also cited by Deleuze.

Aristotle, "Difference in general is distinguished from diversity or otherness" (DR 30).³³ About the "otherness" that obtains between genera there is not much to say, since genera are incomparable or incommensurable (cf. Shields 1999, 262). But about "difference" within the genus Aristotle says a lot.

Famously, he claims that the "greatest" (megistê) or "complete" (teleios) intra-generic diaphora is contrariety (enantiôsis) (Met. 1055a5, 10), and Deleuze makes much of this starkly un-Platonic claim (DR 30-1).³⁴ The claim that the greatest difference within a genus is contrariety means that predicates remain comparable even when being taken all the way to the limit of contrariety. Take the genos colour. Although colour admits of various named and unnamed intermediate hues (*Cat.* 12a17-19), black and white are the intra-generic contraries of colour, the fullest expression of difference within that genus. That's why, Aristotle explains, black and white are in no way predicatively "interdependent" or "correlative"; you don't say "the white of the black" the way you say "the black of the sky" (*Cat.* 11b34-6; cf. 11b26-30). That is, such predicates are just as contrary to one another, while remaining intra-generic and therefore commensurable, as predicates that are *not* commensurable are contrary to one another.³⁵ Pellegrin thinks Aristotle treats contrariety as "complete" difference within a genus because contrariety completely actualizes the capacity of a given genus for intrinsic otherness: "every genos is divisible into contrary *eidê*. If the *eidê* are only relative to one another ... then *genos* does not actualize all its potentialities" (1987, 320; cf. Furth 1988, 246). Since Aristotle treats contrariety within a genus as complete actuality, after a fashion, he considers contrariety to be *productive*, a condition of coming-to-be (Met. 1055a8). As he puts it, coming-to-be "starts from" contraries (Met. 1055b13), probably because intra-generic contraries pre-emptively limit the extent to which individual comings-to-be can come to be different. Otherwise, if difference weren't bounded by generic

³³ Aristotle's terminological distinction is not, however, as strict as some commentators imply (e.g. de Beistegui 2004, 48-9). Aristotle talks about differences within a genus thus: "what is other in form [$\tau \delta$ $\ddot{\epsilon}\tau\epsilon\rho\sigma\nu\tau\tilde{\omega}\epsilon\dot{\epsilon}\delta\epsilon_1$] is other than something in something" (*Met.* 1057b35), and later "This difference [sc. relative to the identity of a genus], then, must be an otherness of the genus" (1058a8). It is also important to note that Plato's word that I have been translating as different/difference is *to heteron*, not *diaphora*, a distinction that commentators on Deleuze's reading of Aristotle usually fail to mark.

³⁴ I say "starkly un-Platonic" because in Plato's *Sophist* the Parmenidean account of the relation between being and non-being as contrariety is forced to give way to the account of the relation between being and non-being as difference (*to heteron*). Contrariety, in Parmenidean style, means having *nothing in common* in Plato, while Aristotle makes contrariety a kind of extreme *diaphora*, placing it thus *within* the common identity of a genus.

³⁵ Pellegrin (1987, 320) observes that, even though contrariety is the greatest difference between forms within a genus, not all contraries are intra-generic. For example, some contraries are *eidê* of contrary *genê* (e.g. justice is contrary to injustice, but justice is an *eidos* of the *genos* virtue and injustice an *eidos* of the *genos* vice), and some other contraries are just contrary *genê* (e.g. virtue and vice).

identities to which differences are always relative, then coming to be and generation would be a kind of wandering, aimless process, and therefore, Aristotle thinks, inexplicable.

Deleuze considers the shift from Plato's conception of *to heteron* in the *Sophist*, which unleashes the iconoclastic power of the simulacrum, to Aristotle's conception of *diaphora* a decisive one. There is a shift from an (at least implicitly) absolute to an "entirely relative" conception of the greatest difference (DR 31). The conception of the power of difference, or the extremes of which difference is capable, has totally changed. Aristotle's difference is always mediated by being localized "in something." Difference is therefore only said relative to a genus with an identifying attributes, formalized in an essence or, in Deleuze's preferred expression, a concept (DR 30, 32). The intoxicating immediacy ("unmiddledness") of difference that held sway in Plato is lost.

Aristotle's conception of differences as relative to, or mediated by, the identical concepts of kinds is not only a move away from Plato but, in Deleuze's words, a "confusion disastrous for the entire philosophy of difference":

Assigning a distinctive concept of difference is confused with the inscription of difference within concepts in general—the determination of the concept of difference is confused with the inscription of difference in the identity of an undetermined concept. (DR 32)

Recall that for Deleuze difference means above all determination, construed as the process by which things come to be determined (DR 28). The drawback of Aristotle's conception of difference is that he makes it relative to empty formal determinations ("identities") that are just naturally given.³⁶ No further effort is made to understand difference in itself, or to give it a "concept," as Deleuze says, that would explain what difference does. The entire problem of determination, genesis, becoming (perhaps the most interesting problem of metaphysics) is, therefore, unhelpfully obfuscated.

Let's return to Deleuze's claim that Aristotelian differences always differ relatively: "in genus when they are differences in species ... or even 'in being, according to the analogy' for differences in genus" (DR 30). Deleuze could avoid the charge that he ignores the contrast between differences within a genus (specific difference) and differences among genera in being (generic difference) if he simply disagreed with Aristotle about whether or not being is a genus. If being were a genus, then generic difference would be relevantly similar to specific difference. However,

³⁶ Perhaps humans just have a natural capacity for sussing out such determinations (*An. Post.* 100a13-14), or perhaps we make "contact" with simple basic features of predicative schemes, reference to which is already equivalent to truth (*Met.* 1051b22-6; cf. Sorabji 1982 and Pearson 2005, 218). I do not defend either of these possibilities.
Deleuze accepts Aristotle's conclusion that being is not a genus. In fact, he thinks that Aristotle's proof that being is not a genus relies on an "argument borrowed from the nature of specific difference" (DR 32). Being is not a genus precisely because difference (*diaphora*) is always relative to a genus (DR 32; cf. Met. 998b20-27; Top. 144a35-40). The key to Aristotle's argument that being is not a genus lies in the phrase "it is not possible for the genus taken apart from its species ... to be predicated of its proper differentiae" (*Met.* 998b24-5). Suppose being is a genus. Consider then a subordinate class (eidos) of being, say, colours, and imagine that their proper, constitutive differentia is that they are "visible." (Of course, this is a simplification for the sake of argument; we may want to say that much is visible besides colour.) Now, Aristotle thinks that colours exist, or "are beings," and also their visibility exists or is a being.³⁷ (The existence of both can be understood as the existence of quality [cf. Top. 144a20-22].) But if both colour (an eidos of being) and visibility (a differentia of being) exist, then the supposed *genos* (being) has been directly predicated of both its species and its differentia in a way that is not permissible in the case of other genê. For example, take the genos animal, the eidos man, and the specific differentia "rational." In this case, it is illicit to say, as Deleuze points out (DR 32), both that "man is an animal" and "rational is an animal." Being must therefore not be a genus.

Deleuze refers to the relativity of *eidê* and *genê* (the framework of "specific difference") in terms of the shared "concept" of a given genus, and he correctly notes that species within a genus are said univocally of that genus (DR 32-3, 34). However, Deleuze also compares the relativity of *eidê* to a conceptually identical *genos* and the relativity of *genê* to being (cf. DR 30), despite all the differences between these two cases, not least of which is that *eidê* are said univocally of a *genos* while *genê* are said non-univocally of being (as Deleuze even recognizes!). So what's going on here? What is the best sense we can make of Deleuze's position? I think, far from failing to recognize the distinction between the non-generic relations among senses of being and the non-generic relations among distinct genera, Deleuze is *positively arguing that the two cases are comparable in Aristotle*. That's what he means when he says that even though being is not a *genos*, it still possesses an identity, and it still has a kind of "concept":

An identical or common concept still subsists [in the case of being], albeit in a very peculiar manner. This concept of being is not collective, like a genus in relation to its species, but only distributive and hierarchical: it has no content in itself, only a content in

³⁷ Taking the existential sense of "to be" as elliptical for a predicative sense (following Owen 1971): to be a being, or to be something. I consider existential and copulative senses of being to be compatible in Plato and Aristotle, and the whole controversy over existential and predicative uses of being (especially in the *Sophist*) to be decisively put to rest by Brown (1986).

proportion to the formally different terms of which it is predicated. (DR 33)

To put it otherwise, Deleuze thinks that there are two kinds of conceptual identity operative in Aristotle; there is a first "collective" identity, about which Deleuze has been mainly talking, the identity of the generic concept manifest in the univocity of the terms subsumed by the genus, and a second "distributive" identity, apparently peculiar to the concept of being. What these two kinds of identity have in common is that they make the relationship among different terms *internal* to something else (DR 33, 309). The latter, "distributive" identity obtains between genera insofar as the genera are all *in being*. Perhaps it is unsurprising that Deleuze identifies two sorts of conceptual identity in Aristotle, given that Aristotle himself distinguishes between "unity in genus" and "unity by analogy." At any rate, Deleuze maps his two sorts of conceptual identity (collective and distributive) onto Aristotle's two kinds of unity; the "distributive" *inter*-generic identity of being is what Deleuze says is properly a matter of analogy (DR 33).

INTER-GENERIC DIFFERENCE

If I'm right, then Deleuze's criticisms of Aristotle's conception of difference have sometimes been misunderstood by Deleuze's own commentators. If Deleuze recognizes the Aristotelian distinction between *intra*-generic identity (which is univocal), and *inter*-generic identity (which is non-univocal), and yet persists in defending the connection between them, then it must be the case that Deleuze's complaints about the "analogy of being" in Aristotle have less to do with Aristotle's conception of intra-generic difference (*diaphora*, which Deleuze has just been translating "difference") and more to do with Aristotle's conception of "otherness" (*heterotês*), the differences *between* genera, which Aristotle himself says are only related "by analogy." The idea, in other words, is that Deleuze's claims about analogy, and its much-touted contrast with univocity, *cannot* be properly understood within the framework of "specific difference" (as Flaxman 2011, and Smith 2001, 175-76, for instance, suggest they can). Rather, they must be placed within the framework of what Deleuze calls "generic difference" (DR 33). This important point has probably been obscured by the translation of both *diaphora* and *heterotês* as "difference."

Deleuze recognizes that Aristotelian ontological difference, the non-univocity of being, is *not even* specific difference. Because being is not a genus, Aristotle's well worked-out manner of speaking about specific difference (as subordinated to the identity of a genus) cannot apply to being, *even though* the arguments for the proposition that being is not a genus are derived, in part, from the theory of specific difference. Deleuze says, you'd think this strange consequence of the

theory according to which difference is always relative to something would "lead towards an absolute concept [of difference], once liberated from the condition which made difference an entirely relative maximum" (DR 33). But this looked-for liberation or absolutization does not occur in Aristotle. Rather, Aristotle treats the applications of the predicate "is" on the already established (and genuinely Aristotelian) model of generic difference (that is, *heterotês*, the difference or "otherness" between genera), which in turn entails treating the applications of the predicate "is" in terms of analogy.

Immediately after asserting that Aristotle's understanding of the conceptual identity of being, which is nonetheless non-univocal, can only be understood on the model of his theory of generic difference, Deleuze inserts a long and illuminating footnote (DR 33, 308 n.5). The note reads like (and I suspect is) a response to Aubenque's diagnosis that Aristotle has been persistently misinterpreted as advancing a theory of the "analogy of being" when in fact he advances a theory of being's homonymy.³⁸ Here Deleuze directly addresses how Aristotle considers being a coredependent homonym:

We know that Aristotle himself did not speak of analogy with regard to being. He determined the categories [of being] as *pros hen* and no doubt also as *ephexês* (these are the two cases, apart from pure equivocity, where there is 'difference' without a common genus). (DR 308)

In all likelihood, Deleuze's invocation of *pros hen* and *epheksês* quasi-unities is a reference to *Met*. 1005a10-11 (which I discussed above), where Aristotle contrasts an assumed and questionable universal or generic sense of "being" and "one" with a more probable interpretation in terms of focally connected homonymy. Deleuze then explains what he understands the interpretation of being as "*pros hen*" to mean:

The *pros hen* [terms related homonymously by focal connection] are said in relation to a unique term. This [focal meaning] is like a *common sense*, but this common sense is not a genus, for it forms only a distributive unity (implicit and confused), not a collective, explicit and distinct unity such as we find with genera. (DR 308-9)

There are two things to say about this passage. First, Deleuze calls the *pros hen* character of different senses of being a "distributive unity," whereas it is, strictly speaking, not a unity at all. It is an *approximation* of unity that approaches close enough that it can sustain the sort of scientific investigation normally restricted to unified genera. Second, and more generally, in this passage

³⁸ Aubenque's *Le problème de l'être chez Aristote* appeared in France in 1962, and would've been available to Deleuze during the period he was writing *Difference and Repetition*. It is plausible that Deleuze read it or was at least aware of it, given the resonances between Aubenque's book and this note.

Deleuze says that the core-dependent homonymous character of being is "distributive" and that the synonymous sense of items in a genus is "collective," in precisely the same way that he said the conceptual identity of being is "distributive" while the conceptual identity of a genus is "collective" (cf. DR 33). In effect, there is *no difference* between Deleuze's assessment of *pros hen* homonymy and his assessment of the conditions in which being can be said to be unified by analogy.

Uncharitably, we could say about this supposedly explanatory note that it collapses the distinction between homonymy and analogy, and smuggles in assumptions derived from Aristotle's medieval interpreters. This would be to say that Deleuze is wrong about Aristotle but right (maybe) about Thomas Aquinas. If that were the case, though, then why would Deleuze feel compelled to include this note at all, which exhibits an added, and in my view crucial, layer of Aristotelian erudition when compared to the main text? Charitably, on the other hand, we could read Deleuze's note (as I think we should) as enhancing the claims made in the main text.

In the main text, Deleuze has just suggested that Aristotle himself lacks the conceptual resources to prevent ontological differences (different accounts of being, different meanings of what it is to be) from being treated in the same way as differences between genê. I think the fact that the note treats homonymy and analogy identically can be read as implying that Aristotle fails to establish the *pros hen* homonymy of being, which, had he succeeded in his supposed attempt, would prevent the doctrine of being from collapsing into the doctrine of analogy. Let's recap. Deleuze recognizes the contrast between difference within a (univocal) genus, and difference in the absence of a genus. He says both kinds of difference are relative, the first to a "collective" identity, the second to a "distributive" identity. In the main text, Deleuze continues that Aristotle's theory of analogy is a theory of the distributive identity between genera. In the footnote, Deleuze adds that pros hen homonymy is a theory of the distributive identity among different senses of being. He thinks switching collective for distributive identities doesn't improve the prospects for a philosophy of difference. In both cases differences are still internal to something (in the case of collective identity a genus, in the case of distributive identity a "representation" or a "judgment" [DR 34]). A critic might respond at this point that Deleuze is misrepresenting Aristotle. Homonymy doesn't involve a kind of identity or unity it all. Rather it is an approximation of unity, a quasi-unity, which nevertheless fails to achieve it. My response is that if Deleuze treats pros hen homonymy as basically the same as analogy that is because he finds the notion of such quasi-unity unconvincing. The quasi-unity of core-dependent homonymy depends on there being a core sense

of the homonym. If Deleuze thinks the Aristotelian doctrine of the homonymy of being is no better than, or collapses into, an analogical conception of being, it must be because he thinks Aristotle doesn't establish that there is such a core sense of being.

His argument would anticipate that of Shields, though Deleuze's reasons for thinking Aristotle fails to establish the core-dependent homonymy of being are different. Shields suggests that an appropriate proof of *pros hen* homonymy should proceed in two steps: first, establish that the homonym in question is not covertly univocal; then establish that the homonym is not so diffuse as to be merely equivocal (1999, 64-5). While Shields thinks Aristotle can't even establish the first step (the non-univocity of being), Deleuze grants that Aristotle can establish it on the basis of Aristotle's conception of the relations between *genos*, *eidos*, and *diaphorai*. He is apparently convinced by Aristotle's argument that because a genus can't be directly predicated of its differentiae, being cannot be a genus and cannot, therefore, be univocal. However, Deleuze thinks that Aristotle can't establish the second step of the proof of *pros hen* homonymy. Aristotle can't demonstrate that the equivocity of being has a core sense. Being is a kind of (distributive) identity. but the identity is "implicit and confused." On account of this supposed confusion, being can't be understood as a focally organized homonym. Of course, it is not the case that being is a synonym, unified in the same way a genos is unified, because being is not a genus. The only remaining option is that being is a mere homonym, a purely equivocal term, more like what Shields calls a "discrete" homonym than a focally organized homonym like *life* or *health*.

The implication that Aristotle's being is more like a discrete than a core-dependent homonym supports the position I attribute to Deleuze, that the distinction collapses between the (non-generic) relations among senses of being and the (non-generic) relations among distinct genera. If Deleuze thinks Aristotle's being is a discrete rather than a core-dependent homonym, then the difference between senses of being would be just like the difference, or otherness (*heterotês*), between genera. Genera aren't themselves said synonymously in relation to some supergenus, *nor* are they said in a core-dependent homonymous way. To put it otherwise, Deleuze thinks that *genos* in Aristotle is a discrete homonym, like "bank" in English or "donkey" in Greek. In each case there is the same name ($\gamma \epsilon \nu o \varsigma$) but a totally different account. And, Aristotle says, when you have genera with nothing in common the relations that obtain between them are *analogies*.

I must qualify what I've said. I am claiming that Deleuze finds Aristotle's notion that being has a core sense or focal meaning unconvincing. The fact that in Deleuze the *pros hen* homonymy

of being fares no better than the analogy of being at liberating difference from subordination to a "distributive" identity implies that. However, I'm not saying that Deleuze demonstrates conclusively that being has no core sense. In fact, I think he doesn't do so.³⁹ My claim is that that is what he would have to demonstrate for his criticism of Aristotle to succeed. Consequently, I think that Deleuze's reading of Aristotle is much trickier than most commentators perceive, and is, as it stands, not entirely successful.

Deleuze's view, just like Shields' view, is that Aristotle's account of the core-dependent homonymy of being fails. Unlike Shields, though, Deleuze grants that Aristotle can show that being is not a collective identity (like a genus), but Deleuze doubts that Aristotle can show that the predicate *being* has a focal meaning.

Right after Deleuze says that *pros hen* homonymy is manifested as distributive unity, he continues, "The scholastics are therefore right to translate pros hen as 'analogy of proportionality" (DR 309). Uncharitably, one might conclude that Deleuze was always more committed to finding this Thomist notion in Aristotle than Aristotle was in anticipating it. Charitably, though, since the equivocity of being is confusedly distributive, and admits of no core (pros hen) sense, it ought to be treated like the relations between genera, in terms of analogy. Perhaps Deleuze is thinking that the medieval interpreters of Aristotle not only faced the mere equivocity of being in Aristotle frankly, without any illusions about where Aristotle succeeded and failed (they were right to judge that Aristotle had no better way of treating ontological homonymy), but that they also developed a comprehensive machinery for dealing with such analogical relations (finiti ad infinitum nulla est proportio, etc.). In this case, Deleuze can make a trenchant rejoinder to Aubenque. It may be a misinterpretation to read Aristotle's efforts to articulate a theory of the homonymy of being as a theory about the analogy of being, but since Aristotle fails to establish the core-dependent homonymy of being (either because he fails to establish non-univocity in the case of the predicate being, or because he fails to show that being, while equivocal, has a core sense), the different senses of being have nothing in common and their relations are like the relations among genera ("too far distant and incommensurable"), which Aristotle explains in terms of analogy. Aristotle lacks the means either to establish the non-univocity of being or, given its non-univocity, to reel in its equivocity. Reading Deleuze this way has the virtue of explaining why Aubenque can't present any of Aristotle's positive arguments for why different accounts of being aren't related by analogy, as different genera are: Aristotle doesn't offer any. Aubenque can only insist, quite rightly, that

³⁹ Moreover, Deleuze says some things that make it sound like he thinks there is a core sense of being, for example, when he calls substance the "first sense" of being (DR 309).

Aristotle never uses the term "*analogia*" in the context of discussing the *pros hen* homonymy of being. Both Shields's and Deleuze's arguments, in contrast, are about what Aristotle *can* do, given his conceptual resources (Shields 1999, 260-67), and both recognize he can't do at least some of what he says he can.

So there are two types of identity, and two types of conceptual unity, operative in Aristotle: the synonymous identity of *eidê* within a *genos*; and the merely equivocal identity of genera in being, which has to be treated, if it is going to be treated at all, as analogical. Deleuze calls these two types of identity "collective" and "distributive," and these terms do a lot of theoretical loadbearing for him. Calling the relation of a *genos* to its synonymous proper *eidê* "collective" makes sense: *x*-es are "collected" in the *genos x* qua *x*-es when *x* is said univocally of them all. The "collectivity" of genera complements the "relativity" of differences, which are only said with respect to the identity of a genus. These two characterizations fit what Deleuze calls the conceptual scheme of "specific difference." The adjective "distributive," however, introduces a metaphor that is not so transparent. It describes the type of identity that interests Deleuze most in Aristotle (despite what some commentators claim). Deleuze in fact credits Aristotle with having discovered the notion of distributive identity, for example, among meanings of *being* within the analogical framework first developed to discuss the relations among really distinct *genê*. Distributive identity obtains in the case of what Deleuze calls Aristotle's theory of "generic difference."

To understand why Deleuze finds Aristotle's account of distributive identity more interesting than his account of collective identity we must turn to Deleuze's positive theory of the univocity of being, which is meant to contrast with the Aristotelian-Neoplatonic-Thomistic theory that treats being in terms of analogy. The problem with analogy, Deleuze says, lies in its effort to restore, at a second order, something like synonymy or a purely relative account of difference. Deleuze says this by remarking that analogy always accommodates the peculiar character of human judgment. Analogies are the correlates of judgments: "Analogy is itself the analogue of identity within judgment. Analogy is the essence of judgment" (DR 33). The trouble with Aristotle's conception of "generic difference," in turn, is that it draws a kind of meta-analogy: synonyms are to identities (in the collective sense) as analogies are to *judgments*. And judgment, Deleuze claims, is an operation of representation that preemptorially subordinates difference to identity.⁴⁰ Treating

⁴⁰ For Deleuze "representation" means thinking that is ruled by a set of implicit presuppositions about its proper form: these presuppositions (that thinking means conceiving of identities, judging analogies, imagining oppositions and perceiving similarities) work as an elaborate prophylactic against giving

being as univocal, however, does not have this drawback.

The critical discourse on univocity in Deleuze has been prolific, and I have only a little to add.⁴¹ According to Deleuze, being is said univocally "in a single and same sense, *of* all its individuating differences or intrinsic modalities" (DR 36). In the absence of the distinction between "specific difference" (difference between species within a genus) and "generic difference" (difference between genera that have nothing in common), or in Aristotle's terminology between *diaphora* and *heterotês*, Deleuze's characterization of univocity sounds like a description of the relation of synonymous *eidê* within a univocal *genos*. If Deleuze had failed to heed Aristotle's distinction, or had simply collapsed it, then it would be hard to see anything novel in Deleuze's account of univocity, not to mention hard to make heads or tails of Deleuze's insistent contrast between ontological analogy and univocity.

I suggest that when Deleuze mentions the "individuating differences or intrinsic modalities" of univocal being he does not mean differences in the sense of *diaphora* (individuating differentia in Aristotle); rather, he means differences in the sense of *heterotês*—differences that Aristotle treated as differences between genera, differences that have nothing in common (except being). Thus, Deleuze continues, "Being is the same for all these modalities, but these modalities are not the same" (DR 36). Saying being univocally of the genuinely, outright *other* (*heterotês*) is tantamount to saying being "of difference itself" (DR 36), rather than making differences merely negative, relative or internal to identity. The reason is because Aristotle just defines *heterotês* as difference without shared identity. From this point of view, difference is not a misfortune that befalls being, "it is being which is Difference" (DR 39). Saying being of difference itself releases difference from a subordination to relation and identity, and is, in turn, prefatory to developing a "concept of difference" (Deleuze's ambition), instead of resting content with the "inscription of difference within concepts in general" (Aristotle's failure). Developing a concept of difference means showing how difference is not the mere absence of determination, but fundamentally the operation or cause of determination (DR 28, 32).

Showing the determining character of difference, understood on bases quite other than Aristotelian (namely, I think, Epicurean), will be Deleuze's task in the remainder of *Difference and Repetition* but for now it suffices to note that the concept of difference that he develops relies on

difference the robust sense Deleuze wants to give it. They enable what is in fact identical, analogous, merely opposed, or similar, to be treated *as if* it were difference (DR 138).

⁴¹ See Smith 2001, Widder 2001, de Beistegui 2004, 226-41, Hammer 2007, Zourabichvili 2012, 212-14, for lucid treatments.

ontological univocity to escape from the clutches of Aristotelianism and return to a point very like the one Plato arrived at in the *Sophist*. Deleuze's concept of difference involves a different ontological stemma, so to speak, one that welcomes a form of "non-being that is in a sense," like the non-being of the sophist's *phantasmata*. This non-being is not equivalent to negation (DR 39), but is rather the being of the problematic (DR 63), will be eventually taken up into the theory of the "virtual" reality of events.

I'm getting ahead of myself. Deleuze claims it is not simply the case that analogy is "distributive" and univocity is not (this would be so only if Deleuze's univocity were like Aristotle's, the synonymous or "collective" relation between *genê* and *eidê*). Rather, ontological analogy and univocity are both distributive, but in distinct ways (DR 36-7). Analogy is distributive, Deleuze says, in a way that preserves principles (*arkhai*) of distribution. The principles preserved in analogy, as opposed to synonymy, are not those inhering in the identity of the genus, but are rather artifacts of representation. However, according to the meta-analogy between analogy and synonymy, both cases respect the same manner of proceeding: synonymy is to identity as analogy is to representation. Deleuze criticizes Aristotle for accommodating the theory of genera and of difference to the representations of the "Greek eye" (DR 32).

A sort of anthropocentric prejudice of scope and scale is at work in the Aristotelian theory of the analogy of being. It is as if there were rules in relation to which a given distribution can be more or less perfect, and these rules happen to line up with exactly how things should be in order to be maximally intelligible for humans (cf. *An. Post.* 100a13, quoted above). Deleuze uses another metaphor, an agrarian one typical of the French intellectual tradition (DR 36). Analogical representation proceeds as if what is distributed has *already been* divided, as if, for instance, theoretical fields had already been partitioned and appropriated before the work of thinking begins.⁴² Consequently, it is possible to evaluate representations and analogies as more or less perfect, more or less correspondent to the primordial distribution, which they all approximate. In all likelihood, Deleuze borrows this argument about the approximative character of analogical judgment from Aristotle's discourse on the "approximate unity" of *pros hen* homonyms, which (for

⁴² Deleuze's metaphor recalls Rousseau's famous remarks at the beginning of the second part of the *Discourse on the Origin of Inequality* about the connection between the foundation of civil society and the proprietary enclosure of land (Rousseau 1987, 60). Compare Laroche (1949), whom Deleuze cites, on the relation between the Greek term *nomos* (custom, law) and the verb *nemô* meaning "to pasture," and more recently, Michel Serres' theoretico-historical vindication of the connection between the measurement of territories and the foundations of analytic thought and law, especially distributive justice (Serres 1995, 51-56).

Aristotle) regain some of the unity of a *genos*, and are thus able to serve as foundations for rational sciences.

The other way of being "distributive," characteristic of ontological univocity rather than analogy, is anarchic in the etymological sense. Without recourse to quasi-unity, it does not proceed as if there were principles (*arkhai*) of distribution. Distribution in the second case doesn't approximate anything, and the postulate of a best or perfect distribution is suspended. Here being is called "nomadic," because, according to the metaphor, it doesn't proceed as if the territory were already partitioned and appropriated. Rather, the occupants of the territory distribute themselves, forming relations among one another that were inconceivable, or at least unanticipable, before the distribution occurred. In this latter manner of distribution, Deleuze thinks, differences are not "mediated" by identity, and difference consequently retains some of the power Plato glimpsed in the *Sophist*.

In telling terminology, Deleuze says that in the context of Aristotelian, analogical distribution, which even in the absence of univocal genera falls back on identity in representation, we never discover "difference changing its nature" (DR 32). The collective identities of genera and the distributive identities of representations, or judgments, combine to form "concepts of Nature" (34), "organic representations," construed as differences internalized, or relativized to preestablished identities. In univocal or nomadic distribution this internalizing or relativizing does not occur: difference is free to change its own nature, rather than being confined within, or relative to, a nature well-defined and presupposed.

NATURE IN ARISTOTLE

How accurate is Deleuze's suggestion that there is an anthropocentric prejudice at work in Aristotle's metaphysics? To answer this question requires a diversion into Aristotle's biology. The idea that analogical distribution erects an ideal of perfect distribution is unfortunately bound up, in *Difference and Repetition*, with Deleuze's tendency to read Aristotle as preoccupied with classification and taxonomy. Deleuze says there is an "ideal of classification" at work in Aristotle's conception of the analogical relations between genera (DR 34). He also somewhat heavy-handedly relies on Porphyry's commentaries on Aristotle (DR 308, notes 2 and 3), which imply an ideal of taxonomic hierarchy, as if this were the implicit goal of Aristotle's theories of specific and generic difference. This assumption of the priority of classification is a shame, since it is not likely that Aristotle actually was interested in discovering, or even suggesting, an overarching taxonomical

system, at least in the biological treatises (Pellegrin 1986).

When Aristotle says *eidos*, he does not necessarily mean a "first order of generality above particulars" or "an absolute form characterizing all the species-members alike" (Balme 1987C, 296). Likewise, when he says *genos*, he does not necessarily mean to pick out a higher-order class of *eidê* with clear-cut boundaries and an unambiguous extension. Rather, as Balme (1962) influentially argued, Aristotle's terms *genos* and *eidos* are taxonomically neutral and applicable to almost any level of generality, although of course possessing a stable meaning relative to one another (a *genos* is a class of *eidê*). This use of *genos* and *eidos* does not imply an "ideal of classification." Given the well-established conceptual parallels between the biological and logical treatises (Lennox 1987a, Bolton 1987), it is likely that *genos* and *eidos* have the same taxonomically neutral sense in both contexts. For this reason, I've avoided rendering *eidos* as "species" (as Deleuze does) as much as possible; "species" has misleading typological resonances, as if Aristotle were doing taxonomy the way that modern biologists do.

Nevertheless, the aspects of Aristotle's conception of the relations among *eidê* and *genê* that are genuinely Aristotelian, and which I have been discussing in detail, clearly do apply to his biology. For instance, Aristotle argues that different biological *eidê* within a *genos* differ by degree, that is, in terms of features "according to the more and the less" (different species of birds will have larger and smaller beaks, and so on) (*PA* 644a16-19), while *genê* differ from one another in kind and are related by analogy (Pellegrin 1987, 328; Balme 1987a 18), a biological recapitulation of Aristotle's view that between *genê* there is no path or common measure (*Met.* 1055a6). The methodology of the biological works is an application of the conceptual framework where *intra*-generic differences are differences of degree and *inter*-generic differences are differences in kind (Lennox 1987b; Balme 1987b, 80). Moreover, Aristotle suggests that the point of the analogical approach in biology is ultimately to relate all living kinds to one being *qua* standard of intelligibility. This exemplary living kind is, of course, the human, which Aristotle calls the "most natural animal" (*IA* 706a19).⁴³ Deleuze's assessment that the focal point of Aristotelian analogy lies in human judgment appears to be on solid ground.

To the extent that Aristotle's biology develops some of the same issues as his metaphysics and logic regarding the relations among *eidê* and *genê*, it can open a new way of approaching Deleuze's reading of Aristotle. Montgomery Furth has argued that Aristotle's biology is animated by the question of why biological objects are organized into individuals. Aristotle's biological

⁴³ Cf. *HA* 491a19; Pellegrin 1986, 91 and Lloyd 1983, 26-43.

research question is:

What principles must be at work to make it the case, that in the environmental circumstances that terrestrially prevail, the world of bio-organic substances takes this form of numerous species of independent, integral *units* ... ? [W]hy this, rather than, say, a general bio-organic swamp, or some other organic distribution built on a completely different principle from that of the *constantly repeated individual*? (Furth 1988, 70)

Furth suggests that the philosophical concept of "form" should be understood as the theoretical invention meant to answer this research question (1988, 71). The sophistication of Aristotle's account of form in biology, and his answer to the question "why individuals?" is evident in the "succession of progressively more complex stages" of form, moving from the "mass-logic level of the original materials to the count-logic level of the completed individual" (1988, 71). For Aristotle, that is, there are not just individuals in the sense of individual organisms (you or I, my cat, that tree). There are also, so to speak, proto-individuals at various levels of complexity defined by their functional dispositions. Furth isolates six levels of such "formedness" in Aristotelian biology (1988, 76-83):

1) What Aristotle calls "simples" (*ta hapla*). These are the Empedoclean elements (fire, water, air, earth), which are entirely subject to a mass-logic. They are not organized into units, and possess unity only, as Aristotle says, in the sense of being undifferentiated in kind (*Met.* 1016a17-24).

2) Compounds (*suntheta*), e.g., different metals, woods, glass, wine, etc., which can exist on their own (*kath'hauta*).

3) The uniform or "homoiomerous" parts of animals, such as blood, flesh, bile, milk, which cannot exist *kath 'hauta*, but only as parts of a whole.

4) Transitional or "proto-structural" parts, which share some of the features of homoiomerous parts and some of the features of non-uniform or "anhomoiomerous" parts. For example, Aristotle thinks the heart behaves sometimes as *stuff* and sometimes as *structure*, and so has only partially been functionally individuated (*PA* 647a31-3; cf. Furth 1988, 81).

5) Non-uniform or "anhomoiomerous" parts, such as functionally defined organs: the lungs, the liver, etc. (*GA* 734b28; *PA* 647a4).

6) Individual organisms.

As evinced in the fourth, transitional stage of the "progressive advent of form" (Furth 1988, 71), the discovery that organs are non-uniform, being themselves structured and organized teleologically according to function, plays a decisive role in Aristotle's scheme (1988, 93-4).

For our purposes, however, the most important thing to derive from the Aristotelian advent of form in biology is the way in which the hierarchy of individuation is interpreted hylomorphically. At every level, the immediately prior, simpler stage of individuality underlies as *matter* the subsequent stage, which Aristotle treats as *form* (Furth 1988, 84).⁴⁴ Each stage is, moreover, interpreted as being "for the sake of" (*heneka*) the next, more individuated stage (*PA* 646b10-12), and all ultimately "for the sake of" the individual organism (*PA* 645b15-19). To say the same thing another way, Aristotle argues that the lower levels (matters) are always presupposed by the higher (forms). So for example, the form "bipedal" presupposes the existence of organs functionally disposed to be feet.

This account of nested layers of formedness, with each layer serving as the matter for the next, tells us something important about hylomorphic individuation. As Helen Lang puts it in her study of Aristotle's conception of nature, matter "runs after" form (Lang 1998, 53). "Nature," moreover, which Aristotle famously identifies with form (*Phys.* 193a32-b2), is treated as "everywhere a cause of order" (*Phys.* 252a12, 17). The order in question is identical with the "natural motions" (*Phys.* 250b14-15) of hylomorphic composites, which are moved toward the actualization of form by virtue of the fact that it is the same actuality for both form and matter (*Phys.* 202a14-16) and that the form is actually what the matter is potentially. Aristotle's way of expressing this is that matter "desires" form of its own accord (*Phys.* 192a19-24; cf. *Phys.* 198a25; *Met.* 1015a10).

In the biology, then, the order of nature emerges from the way that matter yearns for form and naturally moves toward it. Lang points out that this Aristotelian view contrasts sharply with the understanding of matter in Plato, according to which matter must be pressed artistically into the service of form, and the whole cosmos has a beginning identified with this artistic endeavour (Lang 1998, 46, 53; in *Tim.* 28a-c). Aristotle not only rejects the idea that the cosmos has a beginning (*Phys.* 252b5-6), he also rejects Plato's demiurgic metaphor. For Aristotle, nature is not like art. In nature, matter has an innate impulse toward form, but this is not *artistic* form in the sense of being a form imposed from without (Lang 1998, 53). If nature *were* like art then matter would be recalcitrant, as Plato and his followers think it is, resistant to being informed (292). But this is not so: "in natural things, matter is never neutral to form, and form never needs to impress itself or be impressed (by another) upon matter" (Lang 1998, 53). Of course, there is a similarity or analogy between nature and art, which Aristotle often exploits for illustrative purposes and which may be

⁴⁴ Cf. GC 321b21-22; Phys. 194b9-10.

(as Richard McKeon suggests) an "assumption all the way through" (1994, 102). Beyond a certain heuristic value, however, the similarity is misleading. An example drawn from craft (like the process of building a house) can help illuminate what Aristotle means by, for example, motion because in this case "you can make your distinctions [i.e. between form, matter, agency of change] more easily when you have an outside artist putting the form in" (102). I don't think Lang would disagree. She might, however, contest McKeon's conclusion that, nevertheless, "in its major steps, the process [in art and in nature] would be exactly the same." The fact of there being an "exterior cause" of the motion is enough of a difference to make the art-nature analogy unpersuasive. Perhaps it is thought that Aristotle's conception of natural motion is *based on* an analogy with art. Lang argues that's not so. The analogy between art and nature elides a distinction that Lang wants to bring out in the characterization of matter as "desiring" form. In arts and crafts matter is recalcitrant but in nature matter is tame, proto-structural, willing to be informed.

The point of this summary of the relationship between matter and form in Aristotle's biology is to open another pathway to understanding Deleuze's criticisms of Aristotelianism. Deleuze thinks the trouble with Aristotle's account of nature is the tameness of matter. When Deleuze and Guattari disparage what they call "hylomorphism" for leaving many of the creative capacities of matter by the wayside (e.g., TP 408), they mean to disparage this characterization of matter as something well-behaved and uncreative, having nothing to do with the determination of individuals, determination being always a function of the form that matter yearns for or exists for the sake of. There is, therefore, a parallel to be drawn between Deleuze's criticisms of Aristotle's conception of difference and his conception of matter. Difference and matter ought both to be understood as determination primarily, but they have not been so understood. Given Deleuze's attempt to develop a new concept of difference in *Difference and Repetition*, we should also expect him to develop a new concept of matter. That's exactly what Deleuze and Guattari do in the "Geology of Morals" section of *A Thousand Plateaus*, which I turn to now.

STRATIFICATION

In *A Thousand Plateaus* Deleuze and Guattari criticize what they call "hylomorphism" because, according to Aristotle's hylomorphic schema, the role of matter is merely negative, identified with the *potential* being, which is to say what remains *unrealized* of form in a

compound.⁴⁵ Deleuze and Guattari's characterization of hylomorphism is meant to be contrasted with the new theory of matter they develop in "The Geology of Morals."⁴⁶ This section of *A Thousand Plateaus* is a reflection on one sentence from a geology textbook: "A surface of stratification is a more compact plane of consistency lying between two layers" (TP 40). Here already we find the pair of opposites from which the text takes its bearings: "strata" on the one hand, and the "plane of consistency" on the other. Also, a couple of things are already implied: that strata emerge through a process of stratification, and that strata exist in the midst of a non-stratified consistency. Deleuze and Guattari borrow this geological terminology to make a theoretical riposte to Aristotle. Observe the way that "strata" and the "plane of consistency" are defined: "Strata are Layers, Belts. They consist of giving form to matters" (TP 40); and later: "the term *matter* [is used] for the plane of consistency or Body without Organs, in other words, the unformed, unorganized, nonstratified, or destratified body and all its flows" (TP 43). This language indicates that the theory of stratification promises an alternative to hylomorphism.

Stratification, as a general template for individuation, is clearly not identical to Aristotelian hylomorphism. What Deleuze and Guattari call "matter," for instance, is not Aristotle's *hulê*. In Aristotle, at any given level of organic complexity, matter is not understood as unformed or disorganized, but precisely as organized. For example, the matter of an individual organism is its parts, which is to say functionally disposed and defined organs (*organika*).⁴⁷ *In extremo*, a total animal body underlies its soul as matter to form, understood as a set of kind-specific capacities. Aristotle calls "soul" the "first actuality of a natural, organic body" (*DA* 412b5-6), in other words, a body with organs. Deleuze and Guattari make the distinction between their "matter" and Aristotle's "*hulê*" explicit by distinguishing matter (as body *without* organs) from "material" (as bodies *with* organs) (TP 49).

Literally, or geologically, the formation of a stratum is the consequence of two complementary processes (De Landa 1997, 60): a *sorting* process, in a river or stream for example, whereby rocky sediments are deposited in relatively homogenous layers by dint of gradients in the

⁴⁵ Hylomorphism, in Deleuze and Guattari's sense, is thus distinct from, though not unrelated to, the way the term is sometimes used by other authors to denote a thesis about the relation between body and mind (or soul); Williams 1986; Burnyeat 1992; Caston 2005.

⁴⁶ My treatment of this rich text will be necessarily partial. I leave aside, for instance, Deleuze and Guattari's distinction between the *content* and *expression* of strata (TP 43), and while I use what they call the "geophysical stratum" in passing to illustrate the "organic stratum," my focus is on the latter, and I totally exclude discussion of the "stratum of signification" (TP 57-60). For succinct discussions of the topics I ignore, see De Landa 2006, 12-17.

⁴⁷ Reading *GA* 715a9-10 with 734b28.

speed of the river's flow, temperature, chemical composition of the sediment, etc., and a *cementing* process whereby the already sorted layers are consolidated through crystallization chemically effected by solutes in the water (different solutes for different kinds of rock). This is what Deleuze and Guattari, who have clearly read their geology textbook, mean when they say that strata are a consequence of a "double articulation." A first articulation "chooses or deducts, from unstable particle-flows, metastable molecular or quasi-molecular units (*substances*), upon which it imposes a statistical order of connections and successions (*forms*)," and a second articulation "establishes functional, compact, stable structures (*forms*) and constructs the molar compounds in which these structures are simultaneously actualized (*substances*)" (TP 40-1). The term "substance" in this quotation should be read as equivalent to "material." This is matter that has already been subjected to a relatively simple organization, even in the first articulation: "Substances are nothing other than formed matters" (TP 41).

How does this picture of stratification differ from what we find in Aristotle? Deleuze and Guattari say that, although the first articulation (selection, separation) is "not lacking in systematic interactions," it is in the second articulation (sedimentation, cementation) that phenomena such as "centering, unification, totalization, integration, hierarchization, and finalization" appear (TP 41). These are the phenomena that impressed Aristotle, and to which he gave a rich philosophical vindication, epitomized in his making the individual the apex of his ontology of nature. There are various relationships among these phenomena and also among the forms and materials involved in the processes of stratification (containment, constitution, expression, etc. [TP 43]), but Deleuze and Guattari reserve the word "structure" for the sum of all the relations attendant upon stratification (TP 41). They are critical of relying on "structure," which is after all a product of stratification, as if it were capable of giving an account of all becoming, as if it could explain the process of its own coming-to-be (stratification itself). They think that the system of centering, totalization, hierarchization and so on, cannot do that, despite the high hopes that philosophers (like Aristotle) have had for it. In fact, they think that it is an illusion to hope to explain the earth, which they also identify with the Body without Organs and the plane of consistency (TP 40), by means of structure alone: "it is an illusion to believe that structure is the earth's last word" (TP 41). There is more to stratification than structure. We must, for instance, not forget the influence of intensities (of speed, of temperature, etc.) in particle-flows. They devote the rest of the "Geology of Morals" to sorting out and consolidating the role of whatever escapes structure so construed, i.e., what escapes the relations among form, material, unification, and hierarchization in stratification. Their purpose is to

define the role of the plane of the consistency, the expanded role of matter, in their anti-Aristotelian sense.

Adapting the terms in which I analyzed Deleuze's reading of Aristotle in Difference and *Repetition*, we can think of strata and matter as types of "distribution" of being. Among strata, being is said in a distributive sense that is always approximative, where there are "principles" of distribution, or distributions that present themselves as optimal or perfect. This is the picture that obtains when Aristotle is forced to think of being in terms of his theory of *pros hen* homonymy and analogy. Because strata are often thought of in a way that succumbs to the temptation of treating structure, which is actually a consequence of the process of stratification-individuation, as if it were the principle of individuation (a teleological illusion), the approximative distribution of strata also creates the illusion of transcendent Forms, which hylomorphic compounds are supposed to approximate, and a whole (explicitly or implicitly) theological system: Ideas in the mind of God (TP 158-59). As Deleuze and Guattari put it, strata look like "judgments of God" (TP 58). According to Deleuze's agrarian metaphor once again, the illusion that the structure of strata can explain their genesis proceeds as if the earth were itself already enclosed and divided into lots before it comes to be inhabited. Matter, on the other hand, corresponds to a distribution with a quite different character, where the earth itself is not pre-distributed, but its occupants distribute themselves upon it. Here there are no expectations for distribution to fulfill or Ideas in the mind of God to more or less perfectly instantiate. In the "Geology of Morals," then, we have another iteration of the opposition between (a) analogy, sedentarity, and a conception of difference relative to the identity of concepts, and (b) univocity, nomadism, and absolutized difference that can finally be given its own concept.

Parenthetically, lest it be thought that Deleuze and Guattari want to exalt nomadism over sedentarity, it's quite clear in *A Thousand Plateaus* that this key, reiterated opposition does not reinstate a hierarchy. Matter is not supposed to be *better than*, or even *prior to*, the strata. As Deleuze and Guattari put it, the Body without Organs "is not 'before' the organism; it is adjacent to it," a dimension of the organism that is constantly displacing and changing it (TP 164). Similarly, it is not always preferable to emulate destratified matter: "Staying stratified … is not the worst that can happen is if you throw the strata into demented or suicidal collapse" (TP 161).⁴⁸ A little bit of destratification is nevertheless advantageous, since, as well as belying the

⁴⁸ This is a refrain in Deleuze and Guattari: "Smooth spaces [i.e. matter/the plane of consistency] are not in themselves liberatory ... Never believe that a smooth space will suffice to save us" (TP 500). The emphasis on caution in the context of the contrast between matter and strata can be traced back to Deleuze's own work:

illusion that strata can do and explain everything, it opens up closed strata to novelty and to unforeseen alternatives. For example, in the case of human beings, or the "human stratum," destratification involves novel "nonhuman Becomings of human beings that overspill the anthropomorphic strata in all directions" (TP 503). It's important to keep in mind that the stratified organism and the destratified Body without Organs are just the extreme limits of inverse processes (stratification and destratification). It's not possible directly to experience either. As John Protevi puts it, we inevitably *are* and *experience* "de facto mixes." "After all, a stratum is itself only a ratio of capture versus escape" (Protevi 2001, 38).

What Deleuze and Guattari say about the way in which the hylomorphic illusion (that the structure of strata is really their principle) is transformed in the wake of Darwin confirms that the connection between stratification and distribution that I've drawn is a correct one. Deleuze and Guattari think Darwin's contribution to the discourse on biological form is twofold. His first contribution is the view that types of forms are understood "in terms of populations, packs and colonies, collectivities or multiplicities" (TP 47-8). Darwin defines "species" not in terms of a form shared by individuals, but as an expression arbitrarily applied to populations: "I look at the term species, as one arbitrarily given for the sake of convenience to a set of individuals closely resembling one another ... it does not essentially differ from the term variety, which is given to less distinct and more fluctuating forms" (Darwin 2003, 127). For Darwin, the identity (or "form") of a species is a sheer construction, a theoretical convenience dictated by no reality. Deleuze and Guattari think that making form a function of populations of individuals entails that "forms do not preexist the population, [but rather] they are like statistical results" (TP 48). Darwin does not conceive of a "sedentary" distribution of species, where, so to speak, the territory is already divided into lots, but a nomadic one where individuals distribute themselves on the territory. One might anticipate that Deleuze and Guattari's phrase about forms "preexisting" implies a contrast between Darwin and Aristotle, but that conclusion would be premature. Aristotle treats forms in nature as functions of compounds of matter and form (except in the case of incorporeal substances, whose being is the complete actuality of form), so that, for instance, the generation of form is coincidental upon the generation of the hylomorphic composite (*Met.* 1033a29-30; Shields 1990, 374) in the same way that a sailor's movement is parasitic on the movement of a ship (Phys. 240b10-12). The suggestion, however, that forms in nature are just statistical results, or even theoretical

compare LS 157-58, on the "crack": "be a little alcoholic, a little crazy, a little suicidal ... just enough to extend the crack, but not enough to deepen it irremediably." See Ansell-Pearson 1999, 114-21, for commentary on this ethic.

conveniences, is a significant departure from Aristotle. Darwin's second contribution to the conception of form, according to Deleuze and Guattari, derives from his view that formation is a matter of "degrees of development in terms of speeds, rates, coefficients" rather than degrees of perfection (TP 48). The production of populations that we group together as "species" depends on their birth and death rates, and the speed with which individuals are replaced, Darwin's "struggle for existence" (2003, 134). How "developed" a species is (that is, how well adapted) has to do with the rates and speeds at which it produces new individuals. I think Deleuze and Guattari clearly contrast this, Darwin's other major contribution to the theory of stratification, with Aristotle, who is understood as succumbing to the illusion that the structure of strata is a kind of principle, teleologically approximated with various degrees of success. With Darwin, degrees of development are "no longer measured in terms of increasing perfection" (TP 48). In other words, when viewed in terms of rates of change, functions of reproductive rates, forms are no longer represented in terms of an ideal of representation to regulate their distribution.

Deleuze and Guattari consider Aristotle a theorist of the strata who omits the creative role of matter. As Lang (1998) has underlined, Aristotelian matter is entirely negative, has nothing to add to the genesis of the form that it "runs after," and serves only as an measure of the form's imperfect actualization. Since he lacks a robust theory of matter's contribution to stratification, Aristotle ignores the becomings that effect strata to the extent that matter (or the Body without Organs) is "adjacent to" them (TP 164). Consequently, Aristotle's theory of organisms, or the "organic stratum," according to which individuation occurs by degrees of "formedness" approximating a formal-functional structure construed as a principle, is only partial. The term "organism," which Deleuze and Guattari declare "the enemy" of matter and the Body without Organs (TP 158), is the name of this partial theoretical view. When stratification is assessed according to the illusion that the structures characteristic of strata (including unity and hierarchization) are the principles of their own coming-to-be, then we accept a partial view of nature and diminish the roles of matter and difference.

INDIVIDUATION

Deleuze and Guattari's alternative to "hylomorphism," and probably even their use of this term, derives from the work of Gilbert Simondon, whose *L'individu et sa genèse physico-biologique* (1964) is referenced a number of times in the notes to the "Geology of Morals." What Deleuze and Guattari consider the shortcomings of the view that matter plays a merely negative

role in morphogenesis can therefore be gleaned from reading Simondon's text along with hints about Deleuze and Guattari's alternative anhylomorphic vision of individuation.

In *Difference and Repetition* Deleuze criticizes Aristotle for inaugurating a "disaster" for the philosophy of difference by relativizing difference to the conceptual identities of genera and the analogical identities of representation. Deleuze wants to invert the relativity of difference, as I said, by "absolutizing" it and reciprocally relativizing concepts and identities to difference. Simondon anticipates Deleuze's move, not in the context of the philosophy of difference but in the interpretation of the relationship between individuals and the process of their coming-to-be, which he calls "individuation." Simondon claims that throughout the history of philosophy individuation, or becoming (genesis), has been thought of as something that needs to be explained rather than as something that could itself explain the being of individuals. Thus philosophers searched for an explanatory "principle of individuation" (Simondon 2009, 4).⁴⁹ Simondon thinks this search involves a fatally flawed presupposition: "What is postulated in the search for a principle of individuation is that the individuation has a principle" (4). Because individuation itself is held to be incapable of playing an explanatory role, only the completed individual is supposed capable of doing so. The search for a principle of individuation therefore inevitably means an effort "to know individuation through the individual" and not the other way around (5). Simondon wants to reverse this historically preponderant bias by, so to speak, absolutizing individuation and relativizing the individual:

We would like to show that the search for the principle of individuation must be reversed, by considering as primordial the operation of individuation from which the individual comes to exist. ... The individual would then be grasped as a relative reality, a certain phase of being that supposes a preindividual reality, and that, even after individuation, does not exist on its own, because individuation does not exhaust with one stroke the potentials of preindividual reality. (5)

The parallels between Simondon and Deleuze and Guattari, who also consider strata nonexhaustive and always "adjacent" to a plane of consistency or unformed matter, are palpable.

Simondon describes two ancient Greek approaches to individuation, both of which treat individuation as relative to the already constituted individual. He calls the first approach "substantialism," the view according to which being is grasped primarily in its uncreated unity and individuation (of, say, a human body) as a function of self-identical, substantial beings.

⁴⁹ I quote from Gregory Flanders' translation of the introduction to *L'individu psychique et collective*, published in *Parrhesia*. This book, the sequel to *L'individu et sa genèse psysico-biologique*, did not appear in print in France until 1989. However, since the two texts were originally two halves of one dissertation (written in 1957), they have the same introduction.

Simondon's example of such a view is Democritean atomism.⁵⁰ Here, real individuation has not occurred; individual atoms are eternal, and compounds merely "precarious and ephemeral" unities easily "overpowered by a greater force" (5).

According to Simondon, hylomorphism is the second ancient Greek approach to individuation. It differs from substantialism to the extent that in hylomorphism "the individuated being is not already given at the moment one considers the matter and the form that will become the sunolon [compound]" (5). That is, hylomorphism has a prima facie better claim to actually describing individuation rather than simply missing it. Simondon refers to Aristotle's argument that it is important to distinguish predicates like "concave" (koilon) from predicates like "snub" (simon) on the basis that "concave" is purely formal whereas "snub," being concavity combined with a nose, always involves a reference to matter (Met. 1037a32 and following; cf. Phys. 194a5-14). Aristotle claims that particular individuals (e.g., Callias) are like predicates such as "snub" in that they are impossible to speak of without reference to matter (*Met.* 1025b30; cf. 1026a6). The soul, on the other hand, which stands to the individual as form to matter (DA 412b5-7), is more like "concave" in that it is purely formal. Presumably, what Aristotle calls compound (sunolon) is what Simondon calls the individual. Sadly though, in the case of hylomorphism, no less than substantialism, Simondon thinks we "miss" individuation: "The principle of individuation is not, therefore, grasped in individuation itself, as an operation, but in that which the operation needs in order to exist—that is, a matter and a form" (Simondon 2009, 5). There is in hylomorphism an "obscure zone" that "masks the operation of individuation" (5). Although the individual is "not already given," the terms of its existence are, namely form and matter. Moreover, Simondon claims, the terms or principles of individuation are "already of the same mode of being as the individual" (4)—an important if initially cryptic phrase. Without completely clarifying it, we can understand Simondon as saying that hylomorphic individuation is really only pseudo-individuation since matter and form are presupposed as unproblematically in being, just as the individual is. Nothing is *becoming* an individual in this schema. Individuation is taken to occur somewhere in between two sorts of being (principles, on the one hand, and particulars, like Callias, on the other), but the process itself is glossed over. The process of individuation is explained in one sense (individuation means informing matter), but to explain it thus is to make individuations relative to

⁵⁰ You'd think that Eleatic or Platonic philosophy would furnish Simondon with better examples of substantialism, but Simondon neglects to mention both of these schools, possibly because according to Parmenides and his followers individuation or becoming is only illusory. Nicholas Rescher's *Process Metaphysics* (1996, 34) also considers Democritean atomism an ancient archetype of "substantialism."

already constituted individuals, and (in another sense) to explain nothing.

Simondon's claim that matter and form are "already in the same mode of being as the individual" seems to me a succinct summary of individuation in Aristotle. Aristotle distinguishes compounds from forms. Forms (like "soul") are connected to the account of the essence of a thing (the "logos tou ti ên einai"), that is, its definition (*Met.* 1037a23), which can usually be understood as a set of functions or capacities. On this view, forms in themselves involve no matter. In the case of material substances (e.g., organisms) the question therefore arises of how Aristotle conceives of forms in themselves being related to hylomorphic composites. It is one thing to say that form is the *form of* the compound (which is, of course, a compound of form and matter), but this is not very illuminating, which is precisely Simondon's complaint. Aristotle's explanation of the genesis of the individual (compound) doesn't show it being generated at all.

Other commentators have diagnosed Aristotle's difficulties with handling hylomorphic individuals. Balme (1987c, 303-05) points out that Aristotle's insistence on the distinction between form and compound leads him into an aporia. If apodeictic (demonstrative) knowledge requires definitions, then such knowledge is impossible in the case of material substances, that is, individuals like Callias, which (like the predicate "snub") are inseparable from their matter, since matter introduces seemingly insuperable difficulties for definition. Matter can't be included in a definition because it is "in itself unknowable" (*Met.* 1036a9). Aristotle explains that, as potentiality, matter is indeterminate ("*aoristos*") in that it both *is* and *is not* the actual form it anticipates. This vacillation blocks a straightforward definition of whatever includes matter, since definition is paradigmatically of actualities, and what vacillates like this cannot be defined (1037a27; 1039b28-30). Aristotle generally recognizes that the indeterminacy of matter as the chief obstacle to defining individual hylomorphic compounds. But given his well-known preference for treating natural compounds (like animals) as paradigms of substance (*Met.* 1032a19; 1034a4; Frede 1987a, 76), as well as his ambition to study natural compounds scientifically (in his sense of science), he may not fully appreciate just how intolerable this aporia is.

Aristotle deals with it in a telling way. First he states that a definition can only be a unity if what it defines is a unity (*Met.* 1037a19). This manoeuver, although it seems at first merely to exacerbate Aristotle's difficulty by implying that the inclusion of matter in the account of concrete individuals (like Callias) means that the definition and definiendum are necessarily *not* unified, actually provides Aristotle with a means of resolving it. He treats Callias and his form as a unity admitting of scientific definition by treating matter and form (*qua* definition of essence) as merely

modally distinct descriptions of one and the same thing (*Met.* 1045a21-6), and implying that the merely modal distinction between matter/potentiality and form/actuality is not sufficient to rob an individual definiendum of unity. Aristotle's resolution of the aporia attendant on his way of understanding hylomorphic individuation goes some way toward explaining Simondon's opaque phrase: in hylomorphism the principles of individuation are "already in the same *mode* of being as the individual."

Balme notes that Aristotle's formulations of the merely modal distinctions in the unity of hylomorphic individuals (e.g., "the proximate matter and the form are one and the same thing, the one potentially and the other actually" [Met. 1045b18-9]) are strong enough that he could logically proceed to treat material characteristics of individuals, such as the snub-nosedness of Socrates and the long-nosedness of Callias, as *differentia*, making individual hylomorphic substances amenable to properly scientific definition all the way down (Balme 1987c, 304). But Aristotle does not go so far. Instead, he prefers to say that certain characteristics of individuals (e.g., sex, eye colour, and presumably nose shape) are *inessential* differentiae, which means they are properly absent from definitions, being due to matter in its capacity as indeterminate and resistant to definition.⁵¹ Why. then, does Aristotle not embrace the definitional expansiveness he is entitled to? Balme reasons that Aristotle's rationale is probably teleological (1987c, 305). In the biological works especially, "essence picks out only those features for which a teleological explanation holds" (297), that is, features about which we can ask the question "is it flourishing?" because we have some kind of idea what the optimal instantiation of such features would look like. If rationality is an essential feature of humanity, it can be more or less flourishing, more or less well instantiated. Snubnosedness is not such an essential feature. Balme also suggests a test for distinguishing between essential and inessential features: "When we reach a point [in division] where the next differences (e.g., color) do not serve a different function, then they are to be attributed only to matter and movement without implying a different essence" (298). There are many examples of inessential, non-functional differences in Aristotle's biology. To take one at random, Aristotle indicates several times that sub-specific differences among cicadas of different sizes are due to material differences of climate (HA 556a14; 605b22). Balme's functional test for essentiality is similar to what Shields calls the "thesis of functional determination" for kind membership in Aristotle (1999, 32): different functions imply different definitions and different teleologies. The thesis is easily illustrated in the context of homonymy. Aristotle famously holds that a corpse is not a human body "except

⁵¹ On sex, *Met.* 1058a29-b3; on eye colour, *GA* 778a32-5.

homonymously" (*DA* 412b22), because it doesn't have the same functions as a human body, and requires therefore a different account, although it retains the same name ("*sôma*"). At any rate, the point of this discussion of hylomorphic individuation in Aristotle is that despite having the resources to definite hylomorphic compounds all the way down, Aristotle opts to treat matter as an impediment to science, even if it is only modally distinct from form.

We see, then, that Aristotelian hylomorphism relies on principles of individuation, which are only modally distinguished from already constituted individuals, and thus relegates individuation to an obscure zone between already individuated actualities (forms on the one hand, and individuals on the other). Simondon's phrase actually requires refinement; it's not simply that Aristotle's principles of individuation (matter and form) are of the same "mode of being" as the individual, as he suggests. Modally speaking, form is pure actuality and matter potentiality, but the individual compound is a mixture of both; it is in the midst of actualizing its form. Nevertheless, the higher up the scale of organic complexity (as Furth puts it) you go, the greater the actualization of form. So it is not much of a stretch to say that organismic individuals and their form are both modally actual.

What, then, is Simondon's alternative to these accounts of coming-to-be? How does one relativize the individual, and approach it instead through the process of individuation? He says that individuation is inseparable from an ontological hypothesis that "becoming is a dimension of being corresponding to a capacity of being to fall out of phase with itself." The idea is that being is comparable to a supersaturated solution like honey or carbonated water (Simondon 2009, 6). Simondon refers implicitly to the distinction between saturation, the dissolution of a maximum amount of solute in a solvent under so-called normal conditions (for example, at room temperature and at sea-level atmospheric pressure), and *super*saturation, where more solute is dissolved in a solvent than is maximally possible under "normal" circumstances.⁵² In the case of carbonated beverages, more carbon dioxide can be dissolved in water at higher pressures (e.g., in a pressurized bottle); when the pressure is "normalized" as the bottle is opened, carbon dioxide comes out of solution as fizzy bubbles. In honey, more sugar is dissolved in water than is normally possible due to the chemical particularities of reactions effected by honeybees. Consequently, after a time in supersaturation (and often when "seeded" by impurities in the honey), glucose will precipitate out

⁵² In fact, Simondon treats supersaturations (correctly) as one of a group of similar physicochemical systems, "metastable" rather than simply stable systems. "Supercooling," for instance, is another such metastable system, where (e.g.) a liquid is cooled under extraordinary circumstances below its "normal" freezing point, while remaining liquid. I am singling out supersaturation for the sake of clarity.

of supersaturation in the form of sugar crystals. If supersaturation is to be treated as an ontological thesis (more being is dissolved in itself than would be "normally" possible, and consequently that being is "out of phase" with itself), then crystallization presents, Simondon thinks, a well-studied paradigm of individuation (6).

Adopting this ontological hypothesis has been blocked, Simondon thinks, because being has been understood for a long time as a stable equilibrium, or on the model of stable equilibria like saturation, when it ought to be understood on the model of the "metastable equilibria" that contemporary science recognizes (e.g., supersaturation, supercooling). Simondon implies that the traditional focus on stable equilibrium amounts to a kind of intellectual parochialism that produces a naturalistic illusion: that the conditions that are for us "normal" are metaphysically *normative*. In saturation, for instance, the amount of solute that can be dissolved in water is treated as a function of the *nature* of the element, rather than as contextually variable (different in different temperatures and pressures).

Simondon's insight can be translated into Deleuze and Guattari's terms: supersaturation is a mode of stratification. Producing honey, for example, proceeds in two stages, a sorting and a concretion. The sorting is effected by bees bringing together substances (flower nectars and the enzymes, like invertase, synthesized in the bees' bodies), and concretion is effected by chemical reactions establishing new functional kinds (forms) and a new type of substance (honey) with new properties (cf. TP 40-1). The illusion sometimes attendant on stratification is to treat the structures produced by this process as its "principles" (TP 41). This naturalistic illusion also arises when being is treated as a stable equilibrium. On Simondon's view, to treat being as a stable equilibrium is to naturalize the effects of a process (namely, individuation) that occurs under given conditions as if they were independent of those conditions. This is to generalize a local spatio-temporal scale (making the "normal" normative) by failing to relativize processes to intensive variables like temperature and pressure.

The trouble with treating being as a stable system is that it tells us nothing about individuation. With this assumption in place, one can't say anything about individuation really, and certainly can't use it as an explanatory resource, because one treats individuation as a function of already-constituted individuals. Treating being as a metastable system "out of phase" with itself provides an alternative. There is a precise reason why a stable ontological equilibrium excludes individuation:

Stable equilibrium excludes becoming, because it corresponds to the lowest possible level of potential energy; it is the equilibrium that is reached in a system when all of the possible

transformations have been realized and no more force exists. All the potentials have been actualized, and the system having reached its lowest energy level can no longer transform itself (Simondon 2009, 6).

Consider Aristotle. Simondon thinks his hylomorphic interpretation of individuation as the realization of form in matter begs the question by assuming already constituted individuals—forms that are in the same "mode of being" as concrete individuals. Simondon also thinks this account of (pseudo-)individuation corresponds with a picture of the cosmos according to which its ideal would be a state of pure actuality ("lowest potential energy"). That does indeed sound like the Aristotelian cosmos. Aristotle says that the motion of the cosmos is eternal, but he takes this as a premise in an argument to the effect that the cosmos contains an "unmoved mover," a principle whose essence is complete actuality (*Met.* 1071b8-10, 18-23; 1072b8, 27). For Aristotle, the cosmos is a system whose source of motion is a pure actuality, by definition capable of no transformations, no comings-to-be. Cosmic motion is eternal, but not transformative. Since in mechanics stable equilibria are characterized as having points of minimum potential energy, when Simondon remarks that "Antiquity knew only instability and stability," ignoring metastability (2009, 6), I think it's clear that the implicit reference is to Aristotle.

Metastable being means being that is "out of phase" with itself, where this "being out of phase" corresponds with becoming or individuation. Such metastable being informs not only Deleuze's collaborations with Guattari but his earlier solo works as well. Simondon says that if individuation is likened to ontological supersaturation, it presupposes "an original duality of orders of magnitude and the initial absence of interactive communication between them, followed by communication between orders of magnitude and stabilization" (Simondon 2009, 7). Deleuze picks up this "original duality" in *Difference and Repetition*: "Simondon has shown recently that individuation presupposes a prior metastable state—in other words, the existence of a 'disparateness' such as at least two orders of magnitude or two scales of heterogeneous reality" (DR 246). It is only under these "dualistic" conditions, Deleuze says, that an "objective problematic field appears" and individuation "emerges like the act of solving a problem" (DR 246). I will explicate Deleuze's conception of problems in the next chapter.

Deleuze considers individuation so understood to be very promising. He claims that once we divest ourselves of the tendency to think of being as a stable equilibrium, and the parochial illusion that makes individuation a function of individuals, then we can see that "individuation is essentially intensive" (DR 246). In Simondon's review of the history of ontological models, intensive differences (such as temperature and pressure) were traditionally obscured by a

naturalistic illusion. The idea that intensive difference falls into obscurity is a version of Deleuze's essential complaint about Aristotle, which is that he conflates a concept of difference with the relativity of difference to identical concepts, precisely because for Deleuze intensity *means* difference: "The expression 'difference of intensity' is a tautology. Intensity is the form of difference. ... Every intensity is differentiated, [is] by itself a difference" (DR 222). For Deleuze, intensities are, so to speak, absolutized differences, differences that are not relative to pre-established identities. Differences of intensity are not determined as differences (i.e., "differentiated") *by* identities. Rather, they are differentiated by other differences, which Deleuze calls "second-degree differences" (DR 117). He is speaking here in different terms about the same topics that he discussed in *The Logic of Sense* in terms of paradox and quasi-causality. "Second order differences" can be thought of as the "aleatory points," or what I called "floaters," that cause two series to communicate without forcing to them resemble one another. The point is that differences (differences) can enter into relations with one another without an identity presupposed or represented between them.

In contrast to Aristotle's theory of relative difference, which obscures the role of intensity (and the role of matter in individuation/stratification), in Deleuze's absolute conception of difference "the peculiarity of intensities [is] to be constituted by a difference which itself refers to other differences" (DR 117). While in Aristotle's philosophy differences exist only in relation to identities, in Deleuze's theory these intensities, or second-degree differences, relate first-order differences. They play the role of the "differenciator" of difference (DR 117), something that differentiates differences as individuation individuates individuals, precisely what is lacking in the Aristotelian discourse on *diaphora*, where we never see "difference changing its nature, [and] we never discover ... a differenciator of difference" (DR 32). Deleuze considers a conception of absolutized differences, related by second-degree differences rather than identities, to be a kind of return to the vision of simulacra in Plato's *Sophist* after the disastrous diversion of the theory of difference in Aristotle (DR 126).

The backdrop for Simondon's and Deleuze's theories of individuation and becoming cannot be an Aristotelian cosmos where being is fundamentally actual, that is, maximally lacking in potential energy. Rather it will be a cosmos where "being is out of phase with itself," precipitating becoming on the model of crystals in honey or bubbles in soda water. Deleuze's anhylomorphic theory of becoming is, as I said, related to his conception of univocal being. What Deleuze calls "univocal being" is precisely this metastable being. To say that being is "out of

phase" with itself is to speak being univocally *of* its individuating modalities, as these modalities themselves differ radically from one another, being related by second-order differences (intensities, differenciators) rather than identities (cf. DR 36).

If "intensity is individuating" (DR 246), if intensive differences are not obscured by a naturalistic illusion that attributes the behaviour of things under "normal" circumstances to natures or essences, then in both Deleuze and Simondon, individuation will be a "communication" between orders of magnitude or scales of heterogeneous reality (Simondon 2009, 7; DR 117, 246). What should we make of the "disparateness" of two orders of magnitude that Deleuze and Simondon refer to? To ask the same question differently, *what* is "out of phase" in Deleuzian univocal being? What are the "heterogeneous orders" of reality that Deleuze talks about? The answer has been hinted at already in Simondon's contention that the problem with Aristotelian hylomorphism is the way that the principles of individuation are supposed to be *modally similar* to the individuals produced. Deleuze's commentators have suggested that Deleuze's heterogeneous ontological orders can only be the distinct modal orders that he calls "virtuality" and "actuality."⁵³ Unlike the merely negative difference between potentiality and actuality in Aristotle, Deleuze thinks the difference between actuality and virtuality is a modal difference appropriate to the non-negative non-being of difference (DR 63).

While Aristotelian potentiality is merely ancillary to actuality, an index of its imperfection (DR 211), virtuality suggests a genuine difference, a genuine "being out of phase" or heterogeneity within being itself. Virtuality is the excess by which being (or Deleuze says reality) exceeds its saturation point. If reality is metastable, if being is univocal, then there is more to reality than actuality, more to being than saturation. Deleuze's heterogeneity of modal orders is an ontological thesis that, like the thesis of univocity, makes it possible to say "it is being which is Difference." There is difference intrinsic to being itself; difference is not simply the index of a fall away from, or negation of, being. I will discuss this ontological thesis in more detail in the next chapter.

CONCLUSION

In this chapter my argument has been that Deleuze considers Aristotle's philosophy of difference to be a response to Plato's theory of non-being in the *Sophist*. He thinks that Aristotle attempts to re-establish a means of regulating the use of important philosophical terms, of distinguishing true from false theoretical pretenders, in the wake of the collapse of this typically

⁵³ Ansell Pearson 1999, 91, 94; de Beistegui 2004, 223.

Platonic ambition. Aristotle's method for doing so lies in his theory of homonymy. With respect to the term *being* in particular, Aristotle wants to establish that, although being is not a unified genus (which would mean that applications of the predicate would be synonyms rather than homonyms), it nevertheless admits of scientific analysis because being has a core or focal sense. What this core sense of being is has been a matter of controversy, and Shields has even argued that Aristotle lacks the theoretical resources for establishing what he calls the core-dependent homonymy of being, because he cannot establish that being is *not* a synonym said univocally in all its applications.

Deleuze argues that one of the drawbacks of Aristotelian ontology is its way of treating applications of being as subject to analogies that correspond with the anthropocentric representations of the "Greek eye." I argued that what might otherwise seem to be a misreading of Aristotle, collapsing the important distinction between homonymy and analogy, should be read as part of an incompletely realized argument to the effect that Aristotle fails to establish the core-dependent homonymy of being. In Deleuze's view, in contrast with Shields, Aristotle's doctrine of the homonymy of being fails, not because it cannot establish the non-univocity of being, but because it cannot rein in being's equivocity. Being is *so* equivocal that it isn't even related to a core, focal sense. It must, therefore, be treated on the established model of the purely equivocal relations between genera, which Aristotle understands in terms of analogy.

I explained Deleuze's distinction between distributive and collective identities. While a genus is a collective identity, Aristotelian being possesses a distributive identity in analogy. Deleuze's anti-Aristotelian contrast to the "analogy of being" is the "univocity of being," which is not like the collective univocity of synonyms in a genus, but is also distributive, or non-totalizing. The concept of the univocity of being, which is also the concept of original, non-relative difference that Deleuze thinks Aristotle suppresses, is nevertheless distributive in a different sense. Univocal distribution does not presuppose the existence of principles or "natures" of distribution in relation to which one could call a distribution more or less perfect. Deleuze uses an agrarian metaphor and calls univocal distribution nomadic and analogous distribution sedentary.

Finally, in order to approach Deleuze's reading of Aristotle in a different way, I turned to Aristotle's biology, and the theory of the progressive advent of form that culminates in the organismic individual. Deleuze and Guattari's theory of stratification can be usefully contrasted with the Aristotelian conception of progressive levels of biological formedness. A distinction similar to that between analogical or approximative and univocal being appears in the distinction between what Deleuze and Guattari call strata and the plane of consistency, or matter. Their

objection to hylomorphism is that Aristotle's conception of matter (*hulê*) is too tame, as if matter were yearning for or anticipating the natural form that will take hold of it. Deleuze and Guattari, in contrast, develop a theory of stratification where matter takes on a creative role. Specifying the creative role of matter in stratification involved a diversion into the ontological speculations of Gilbert Simondon, an influence equally important to the theory of stratification and Deleuze's conception of difference in *Difference and Repetition*. Simondon's theory of supersaturated being, or being that is "out of phase" with itself, countenances becoming or individuation in a way that Aristotle cannot. The most interesting, and for my purposes most important, inference that Deleuze draws from Simondon is that a conception of metastable being involves a duality of levels of reality. I suggested that these two levels may be identified with what Deleuze calls virtual and actual, a return to the Stoic ontological distinction between (virtual) events and (actual) states of affairs.

Deleuze's positive investigation of becoming, individuation, and virtuality can only proceed so far on the basis of his polemic against Aristotle. To develop his analysis further, Deleuze takes up Hellenistic philosophical assets that Aristotle lacks, preeminently, the Stoic ontological stemma and the analysis of quasi-causality, which he considers a worthy inheritor of Plato's anti-Eleaticism in the *Sophist*, and the Epicurean theory of intrinsic atomic determination, which provides a template for Deleuze's theory of problematic Ideas. Having discussed the Stoics in Chapter 1, I turn next to the Epicureans.

CHAPTER 3

Epicureanism: Problematic Minima

Apollodorus the Epicurean, in the first book of his *Life of Epicurus*, says that Epicurus turned to philosophy in disgust at the schoolmasters who could not tell him the meaning of *chaos* in Hesiod. – Diogenes Laertius, *Lives of the Eminent Philosophers*

DELEUZE'S INTERPRETATION OF Epicurean atomism lays the groundwork for the metaphilosophical formalization of a "chaotic" image of thought, which he formulates with Guattari, distinct from the dogmatic image implicit in Aristotelian hylomorphism. Epicurean atomism also contributes to Deleuze's theories of events and difference by linking events to *problems*. Deleuze thinks Epicureanism represents a theory of problems that expresses their intrinsic self-determination. Two of Epicurus' physical ideas are particularly important to Deleuze: the distinction between physically indivisible atoms and conceptually indivisible *minima* or "minimal parts," and the famous atomic "swerve."

Three texts are key to Deleuze's reading of Epicurus. First, in *Difference and Repetition*, he says that Epicurean atomism introduces a "problematic idea" to the philosophical conception of nature (DR 184). That's a credit to Epicurus. As I outlined in the introduction, Deleuze argues that thinking only really occurs in the face of a problem robustly defined, a provocative involuntary encounter where conventional representations fail us. Problems that have no solutions (at least not yet) stimulate thought or act as a motor for developing new ideas. Such problems stymie the usual operational algorithms of judgment and concept-application. It's hard to say anything about them from the standpoint of the latter, and so problems appear vague, imprecise, "undetermined." Yet Deleuze contends that this negative characterization of problems is insufficient, since problems possess a power of determining themselves, from which they derive their motive force.

A second key text for Deleuze's Epicureanism is a relatively early essay originally called

"Lucretius and Naturalism" (1961) but subsequently updated and published as an appendix to *Logic of Sense* (1969) under the title "Lucretius and the Simulacrum." In this text Deleuze develops an interpretation of Epicureanism in terms of a distinction between "true" and "false infinity." According to Deleuze, the extreme speed of Epicurean atoms in perceptible films (what Epicurus calls "*eidôla*" and Lucretius, "*simulacra*") tends to produce morally detrimental conceptions of false infinities involving, for instance, the existence of the gods and the immortality of the soul. Such mystifications must be exposed by philosophical physics and the true conception of infinity. Deleuze claims that Epicurus' profoundest application of his "true" infinity is apparent in the *infinite speed* of the Epicurean swerve, which occurs faster than fastest conceivable speed (that of *eidôla*). According to this analysis, the swerve means a kind of original motion of coming-to-be, "infinite" in the sense of unlimited by things that already are.

A third source, *What is Philosophy*? (1991), brings the two major threads of Deleuze's interpretation of Epicurus together. Here the problematic ideas of *Difference and Repetition* are combined with the infinite speed of "Lucretius and the Simulacrum." This work defines philosophy as the "creation of concepts," but it's clear that "concept" means something different in *What is Philosophy*? from what it meant in *Difference and Repetition*, where the word denotes a form of identity in representation. In fact, the idea that philosophy's role is to create concepts is an application of Deleuze and Guattari's thought about infinite speed. Such concepts are attempts to retain the unlimited speed of becoming and simultaneously to make it more consistent and intelligible to us than it would otherwise be. I think the alternative image of thought characterized by chaos and the idea that it travels at infinite speed cannot be properly understood without grasping the Epicurean background from which they derive.

Truly infinite speed is developed as a way of thinking about how problems force us to think. Such problems are not simply negative or undetermined but determine themselves in an unexpected way, distinct from the extrinsic determination conventional representations apply to them. Deleuze and Guattari think there have been two main tendencies in the history of mathematics and science: problematic and theorematic. Unlike the theorematic, the problematic mode of thinking does not start from first principles already well known, but from the particular qualities of a unique situation. According to Deleuze, the idea of the reciprocal determination of the derivative in the calculus represents the fruits of a problematic approach. Like some early, "prescientific" interpreters of the calculus, Deleuze gives such determination a highly metaphysical interpretation. Epicurean atomism, which defends the notion of infinitesimal minima in geometry,

is similarly problematic, testifying to the intrinsic self-determination of problems and their productive power.

The connections between problems, swerves, and events suggest to me that *What is Philosophy*? presents a new image of thought which is a rapprochement between the Stoics and the Epicureans. For this reason, Deleuze and Guattari call the true infinity of the Epicurean swerve "virtual" and characterize swerves as events (WP 144, 156, 160-1). Deleuze's reading of the Epicureans aligns with his reading of the Stoics. He thinks that the relations among the incorporeal events Stoicism identified with *lekta* are syntheses of difference that are necessarily positive inasmuch as they are anterior to conceptuality and contradiction. The Stoic theory of fate, as I said, gives the Stoics the resources to think about disjunctive synthesis as such, rather than as a contradiction in terms. Since the Epicureans, on the contrary, do not distinguish between bodies and incorporeals, they emphasize *con*junctive syntheses of various swerves ("and...and") rather than disjunctive (LS 267).¹ While residually prone to an interpretation of the swerve in terms of negativity (indeterminacy), the Epicurean conception of conjunction underscores that such syntheses are irreducibly relations, and that there must be a primordial operator or "principle" of relation (swerve, or the chaos of infinite speed). Deleuze's synthetic philosophy of problems, formalized finally in *What is Philosophy?*, adopts this jointly Stoic and Epicurean conception of events as the actions of the operator of relation, the points of contact between differentials (i.e., particular swerves), moving at "infinite speed." This all goes to show that Deleuze and Guattari's new "philosophy of nature" (Deleuze 1995, 155), as well as their alternative image of thought, have a generally Hellenistic, and specifically Epicurean, inspiration.

ATOMS AND MINIMA

Deleuze offers Epicurean atomism as an example of a "problematic idea." To grasp the significance of this description we must not only sketch the essential doctrines of Epicurean atomism but also understand what Deleuze means by the expression, "problematic idea." I will deal with the first task in the following two sections and the second task in the two after that.

¹ The Epicureans do, of course, talk about void, but Sedley (1982) convincingly argues that Epicurean void is not an incorporeal in the Stoic sense. While among the Eleatics and early atomists void had the status of "non-being that is in a sense" (later reaffirmed in the Stoic conception of incorporeals)—in Democritus, for instance, void is called *to kenon* (the empty) as well as *to mê on* (the non-existent) (S.E. *M*. 7. 135)— Epicurus was obliged, in order to respond to Aristotle's criticisms of Democritus' notion of void (e.g. at *Phys.* 213a15-19), basically to conflate void and place (*Ep. Hdt.* 40; compare S.E. *M.* 10. 2). Epicurean atoms and void are not different in kind in the sense they cannot be in the same place; they can be in the same place to the extent that occupied void is just an atom's place.

Epicurus's argument for the existence of physically indivisible atoms relies on a "general view about the things that are non-evident" (*Ep. Hdt.* 38). It involves three presuppositions, or "principles of conservation" (Betegh 2006, 262): 1) "Nothing comes into being from what is not"; 2) what is destroyed does not "disappear into what is not"; and 3) the totality of the universe (*to pan*) has always been and will always be as it is now, that is, nothing can be added to the universe to change its character (*Ep. Hdt.* 38-9). The first two principles form the basis of a consciously anti-Aristotelian theory of generation and destruction. Epicurus affirms that there is nothing more to generation and destruction than the association (*sunkrisis*) and dissociation (*diakrisis*) of parts, an idea Aristotel ascribed to Democritus and criticized (*GC* 316b35). Next Epicurus argues that everything is made up of bodies and the void and that body and void are the only two *per se* existents (*Ep. Hdt.* 39-40). The argument is famous: the existence of body is empirically obvious, and it is equally obvious that bodies move. Since the movement of bodies implies some place into which they can move, then this place ("void") must also exist.

It is not enough for Epicurus to say that there are bodies and void; some bodies must be indivisible, which is to say indestructible:

Further, among bodies, some are compounds [*sunkriseis*], and some are those things from which compounds are made. And these are atomic and unchangeable [*atoma kai ametablêta*], if indeed they are not going to be destroyed into non-being, but will remain firmly during the dissolutions of compounds, being full by nature and not being subject to dissolution in any way or fashion. Consequently, the principles of bodies must be atomic natures. (*Ep. Hdt.* 40-41)

The argument evidently refers to Epicurus' second "principle of conversion": if there were no atoms, then the destruction of bodies would be destruction *simpliciter*, destruction "into non-being" (*eis to mê on*). Since there is no such destruction, there must be atoms. Gabór Betegh points out that standard interpretations of this argument additionally suppose that Epicurus is referring to "an infinite series of divisions resulting in sheer nothing, or thinks that if bodies were not composed of atoms then their decomposition would lead to pulverization into sizeless parts, i.e. nothing" (Betegh 2006, 265). Leaving aside the question of whether Epicurus actually accepts such fallacious reasoning (the pulverization of bodies carried out infinitely in the absence of atoms would never yield nothing, just increasingly small microbodies), we must understand *why* this interpretation of Epicurus's argument is standard.

It's often assumed that Epicurus relies on a Democritean argument against infinite division. It seems plausible that he does because Aristotle reports the argument (GC 316a23-34) and then immediately characterizes atomist generation and destruction in terms of association and

dissociation, a characterization that Epicurus considers a theoretical starting point (Betegh 2006, 266-7). Democritus argued that absurd consequences follow upon accepting the contrary of atomism, which he calls the assumption that bodies are "wholly divisible" (*pantê diaireton*). If a body is wholly divisible then it involves "no impossibility" (*ouden adunaton*) to say that at some hypothetical moment it will have been *wholly divided (pantê diârêmenon; GC* 316a17-8).

Commentators note two things about this move. First, it involves an "invalid shift of the modal operator" (Betegh 2006, 267; also White 1992, 202): just because a magnitude can be divided *anywhere* doesn't mean it can be divided *everywhere* simultaneously. Aristotle approves of the former but not the latter sense of "wholly divisible" (*GC* 317a7-9; Lear 1980, 200). Second, Democritus' argument relies on an understanding of infinity that Aristotle wants to reject: the idea that infinite division could refer to a completed operation (*Phys.* 206a18-21) or to a sum total or "whole" (207a7-14; Sedley 2008, 318). In contrast, Aristotle advocates what is known (quite misleadingly) as "potential infinity": an inexhaustible, necessarily incomplete process that never makes a whole but always leaves a remainder.²

Democritus pursues his argument on the basis that it is in principle "not impossible" that something divisible everywhere should have been divided everywhere. Supposing such a division took place, the view that bodies are wholly divisible is refuted by its consequences:

What, then, will remain? A magnitude? No, that is impossible, since then there will be something not divided. ... But if it be admitted that neither a body nor a magnitude will remain, and yet division is to take place, the body will either consist of points (and its constituents will be without magnitude) [something Aristotle denies (*Phys.* 227a10-12)] or the body will be absolutely nothing (*GC* 316a23-7, translation modified).

That a body is composed of nothing is patently absurd, but to emphasize the sense in which the other alternative—that a body is constituted by points—is no less absurd, Democritus imagines putting a body that has been subject to infinite division back together. Points, by the definitions accepted by ancient geometers, lack the dimensions of extension. Imagine remaking a body out of points, Democritus says; it's impossible. So he concludes that bodies are not "wholly" divisible, that their divisibility comes to a stop at some point. In other words, there are indivisible atoms with some minimal magnitude.

It remains unclear why Democritus introduces this consideration about infinite division being division into infinite *points*. His argument derives from an earlier Eleatic argument usually

² It is a bit misleading to say "potential" in this context, because "Normally when we say something is potentially Φ we imply that it is possible that it should be actually Φ ; yet it is commonly thought that Aristotle denies this in the case of the infinite" (Lear 1980, 188).

ascribed to Zeno of Elea.³ Brian Skyrms calls this progenitor argument Zeno's "Paradox of Measure." It begins with the supposition that *n*-dimensional magnitudes consist of infinite sums of *n*-1 dimensional entities. Skyrms reconstructs the argument reported by Simplicius (*In Phys.* 139. 3-19 and 140. 27-141):

Suppose that the line-segment is composed of an infinite number of points. Zeno claims that this leads to absurdity in the following way:

[I] Either the points all have zero magnitude or they all have [the same] positive magnitude.

[II] If they have zero magnitude, the line-segment will have zero magnitude, since the magnitude of the whole is the sum of the magnitudes of its parts.

[III] If they have [the same] positive magnitude, then the line-segment will have infinite magnitude, for the same reason. (Skyrms 1983, 226)

It is plausible that a version of this puzzle convinced Democritus to adopt indivisible, atomic magnitudes (White 1992, 201). The atomic hypothesis amounts to a rejection of the supposition Zeno shows to be unacceptable and the counterclaim that *n*-dimensional magnitudes are composed of finite sums of minimal *n*-dimensional entities. Aristotle also rejects Zeno's premise—in fact, he denies that magnitudes are composed of points *and* that infinite divisibility entails a realizable infinite sum or whole—but he does accept that a given magnitude is infinitely divisible. He responds to Democritus by denying that infinite divisibility depends on the possibility of any actual infinite collection of parts ever being produced. Aristotle develops what one commentator calls a "constructive, finitistic, ∞ -conception of infinite divisibility [that] precludes an actual or completed partition of a finite magnitude" (White 1992, 200). This conception of infinity neutralizes one of Zeno's horns: there's no need to worry about a magnitude being actually divided into parts lacking the requisite dimensions for reconstituting the original magnitude, since the process of division never comes to an end.

Democritus' argument for atoms is not merely that there are indivisible magnitudes but that there are indivisible *bodies*. Yet his argument depends on a tradition of reasoning about magnitudes as sums of limit-entities. In Democritus, as Furley points out, physical and mathematical (or conceptual) indivisibility are not clearly distinguished (1967, 111-14). That changes with Epicurus, whose atomism is self-consciously "two-tiered" (Sorabji 1983, 348): physical atoms, which are *per*

³ Betegh 2006, 269; White 1992, 199. Sedley argues the Zenonian derivation is "shaky" and accepts Simplicius' report (*In Phys.* 140 1-7), which ascribes a version of the argument to Parmenides (2008, 320-21).
se existents and the indestructible elements of aggregates, are distinct from indivisible quanta of magnitude. Along with the argument that positing atoms is necessary, Epicurus also presents arguments about, so to speak, subatomic and superatomic magnitudes. On the one hand, he describes superatomic magnitudes larger than any atom could be. Atoms cannot have just *any* magnitude, he claims, since above a certain threshold of size that would make atoms visible (*Ep. Hdt.* 55-6), something "counterwitnessed" by experience (*Ep. Hdt.* 51; Asmis 2009, 96). On the other hand, Epicurus says, there are *sub*atomic magnitudes smaller than atoms, which always remain magnitudes without "dissolving into nothingness." Epicurus calls such magnitudes "*ta elakhista*," a substantivized superlative of the adjective *elakhus*, meaning "little." For the most part, I shall use Lucretius' Latin translation of this term, "minima."

One pervasive assumption about Epicurus is that his arguments for atoms (*Ep. Hdt.* 40-1) and for *elakhista* (*Ep. Hdt.* 56-7) are interdependent or analogous (Betegh 2006, 271). Both sets of arguments appear to be applications of Zeno's paradox of measure. Arguing for minima, Epicurus says:

One must not believe that there can be an unlimited number of sizes—no matter how small—in a finite body. Consequently, not only must one get rid of [the idea of] unlimited division into smaller pieces ["*epi toulatton*," the comparative degree of *elakhiston*], so that we do not make everything weak and are not forced in our conceptions of compounds to reduce the things that exist to non-existence, but one must also not believe that within finite bodies there is an unlimited movement, not even by smaller and smaller stages. (*Ep. Hdt.* 56, trans. Inwood and Gerson, modified)

This passage appears to refer to Zeno's first horn (Skyrms' [II]), the idea that infinite division would "reduce existence to non-existence." The following passage appears to allude to Zeno's other horn (Skyrms' [III]):

For as soon as one says that there is in some thing an unlimited number of sizes, no matter how small, then one cannot think how this magnitude could any longer be limited. For obviously those infinitely many bits must have some magnitude; and no matter how small they might be, the magnitude [of the whole] would for all that be infinite. (*Ep. Hdt.* 57, trans. Inwood and Gerson, modified)

Epicurus, like Democritus, rejects the supposition that Zeno's paradox shows to be dubious. Finite bodies do not contain an infinite number of magnitudes; rather, every finite body contains some finite number of magnitudes. Unlike Democritus, however, Epicurus extends this conclusion even to the atom. Epicurus contends that there are minimal subatomic magnitudes, theoretical minima even smaller than atomic physical minima. According to an influential interpretation of this doctrine (Konstan 1979), when Epicurus says that minimal parts "measure out magnitude in their

own unique way" (*Ep. Hdt.* 58) or provide a "standard of measurement" for atoms (*Ep. Hdt.* 59), he means that the number and arrangement of minima explain the differences of shape and size among atoms. Epicurus' idea is that while atoms are physically indivisible they are not *conceptually* indivisible, and that conceptually indivisible entities (*elakhista* or minima) are the ultimate units of magnitude. Epicurus thus introduces a distinction Democritus had failed to perceive. Democritus argued for ultimate units of magnitude (minima) from broadly Zenonian considerations, but his mistake was to call those entities atoms. Epicurus argues for the existence of atoms, on the other hand, on the basis of broadly empirical considerations. His argument for the existence of atoms relies on the methodological point that perception affords the ground for reasoning about the non-evident (*Ep. Hdt.* 39; Morel 2009, 71-2). It would be quite out of keeping with this method for Epicurus to attempt to demonstrate the existence of atoms on the basis of the properties of minima; that would be to reason about the non-evident (atoms) starting from the non-evident (minima).

Since Epicurus scrupulously avoids committing Democritus' error of conflating atoms and minima, the notion that Epicurus' arguments for atoms and minima are "analogous" looks implausible. Although the passages I have quoted from the argument for minima do seem to recall the phrasing of Zeno's paradox, Betegh reminds us that in the first passage Epicurus does not say that an infinite series of cuts will produce sizeless bits (any more than he does earlier in the argument for atoms [Ep. Hdt. 41]), but rather that the assumption of infinite divisibility makes all bodies "weak," i.e., decomposable. In reality, however, only some bodies (compounds) are weak, and other bodies (atoms) are strong, undecomposable (Ep. Hdt. 41; Betegh 2006, 272). Moreover, against the idea that Epicurus is rehearsing Democritean arguments unmodified, the key to the second passage I quoted in the argument for minima is how Epicurus refuses to imagine that even the bits into which an infinitely divided body is divided are "sizeless." Sizeless bits are not even conceivable (Betegh 2006, 270). Having learned a lesson from Aristotle's response to Democritus, Epicurus rejects the premise of Democritus' thought-experiments, that infinite divisibility is possible even in thought. Epicurus should thus be read as diagnosing and avoiding the fallacious reasoning that is sometimes attributed to him: the pulverization of bodies never yields nothing, just smaller magnitudes. There is always *some* magnitude, and the smallest conceivable magnitude is the minimal part of the atom.

So Epicurus avoids Democritus' pitfalls by not arguing for the existence of atoms on the basis of the existence of minimal parts. In fact, Epicurus *also* outmaneuvers Aristotle. He rejects Aristotle's response to Democritus and the Aristotelian solution to Zeno's paradox of measure.

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Epicurus' theory of minima ought to be seen as part of a generalized attack on the related Aristotelian conceptions of potentiality and change or motion (*kinêsis*). According to Furley, Epicurus' rejection of the infinite divisibility and continuity of magnitude and motion rests on a critique of the Aristotelian conception of potentiality (Furley 1967, 128), since Aristotelian potentiality is closely related to, and actually underwrites, the theory of infinite divisibility and continuity. Aristotle resolves Democritus' version of Zeno's paradox by exposing not only Democritus' shaky logic, but also the wrongheaded conception of infinity that could be identified with a completed series of operations. As Michael White puts it:

Even the Aristotelian analysis of the infinite divisibility of continuous magnitudes such as spatial extension and time appeals to a fundamental and irreducible potentiality: such magnitudes are infinitely divisible in the sense that a process of actual division of a finite quantity of a continuous magnitude into sub-magnitudes *could*, in principle, always be carried beyond any finite number of stages of division. (White 1992, 196)

The potentialities referred to are not understood as straightforwardly relative to some actual state, potentialities that might be (or inevitably will be) actualized.⁴ Rather the potentialities involved in Aristotle's conception of infinity are "primitive or 'surd' potentialities" (White 1992, 196), characterized by the inexhaustibility of processes (e.g., of division) that proceed endlessly. Epicurus' critique of Aristotle lies in his rejection of "surd" potentiality as a dubious ontological category "between 'what is' and 'what-is-not'" (White 1992, 197; compare Furley 1967, 155).

On Furley's reading, Aristotle's infinity by division is not the only place that the conception of surd potentiality does work (1967, 153-4). It is also involved in Aristotle's theory of motion (*kinêsis*), which he understands, famously, in surd potential terms as the "actuality of potentiality *qua* potentiality."⁵ This definition requires "surd" potentiality, and not just potentiality relative to actuality, because although motion is an actualization, it is an "incomplete" ($\dot{\alpha}\tau\epsilon\lambda\eta\varsigma$) one, as its end lies outside itself (*Phys.* 201b31). For example, in the motion of building a house, the actuality of the building lies in a house having been built not in the process of building, which disappears in its climactic moment of fruition. As Kosman puts it, "motion does not, therefore, just happen to cease, its essential activity is devoted to ceasing. Its being is auto-subversive" (1969, 57). For Aristotle, motion is incomplete actualization because "the potential whose actuality [motion] is is [itself] incomplete" (*Phys.* 201b32). The potentiality to move, like the potentiality to be infinitely

⁴ Lear 1980, 188; Bostock 1973, 38. Compare Hintikka 1966 for a canonical application (Lear argues, a misapplication) of this *relative* notion of potentiality to Aristotle's theory of infinity by division (*apeiron kata diairesin*).

⁵ See *Phys.* 201a11, *Phys.* 251a9, and *Meta.* 1065b16.

divided, never stands for a completed sum of operations. So when Epicurus challenges Aristotle's surd potentiality, he does so by offering an alternative to this theory of motion. Since Epicurus considers Aristotle's frequent invocation of surd potentiality to solve physical problems to be illegitimate, and since surd potentiality also underwrites Aristotle's theory of *kinêsis*, criticizing *kinêsis* is a tactic for bringing down the entire Aristotelian edifice.

Aristotle treats *kinêsis* as "ontologically fundamental" (White 1992, 187). It is intimately connected to his theory of nature as "principle of motion and change," and is, cosmically speaking, perpetual: motion is "an immortal never-failing property of things that are, a sort of life as it were to all naturally constituted things" (*Phys.* 250b13-14). To challenge Aristotle, Epicurus does not reject motion full stop (the old Eleatic move), but rather the Aristotelian interpretation of motion that involves surd potentiality. Epicurus rejects the "ontological fundamentality" of Aristotle's "potential infinity."⁶ He does so not by *eliminating* motion, but by *reducing* it, explaining it in terms of the "(unchanging) primary properties [of atoms] … and the (changing) relations among atoms" (White 1992, 281).

One way that Aristotle asserts the fundamentality of *kinêsis* is by discrediting arguments that magnitude, time and motion are discontinuous, or composed of indivisible (*adiaireton*) parts (*Phys.* 6.1-2). In general, Aristotle rejects attempts to dissolve (ontologically primitive) motions (*kinêseis*) into *kinêmata*, "jumps" or, more literally, "having-moveds." Aristotle proposes a thought experiment intended to destroy the thesis that motion and magnitude are composed of indivisible quanta. Take a magnitude of a body made up of indivisibles, and then take a motion also composed of indivisibles corresponding to the magnitude (*Phys.* 231b23-4). At any given moment in the movement of the body, no part of the body is actually *in motion*, but it has always just completed a motion: a minimal part of the body will have moved *across* a minimal magnitude without moving *through* it, a consequence Aristotle thinks is absurd: "the motion will consist not of motions

⁶ It may be objected to the notion that incomplete, surd potentiality is "ontologically fundamental," that Aristotle also insists that all motion ultimately depends on a special kind of motion that *is* complete it itself (*Phys.* 257b6-11). In this special case, *kinêsis* is not *atelês* (incomplete), but "entelic" in that it doesn't cease to exist when it has produced an actuality lying outside itself. This special case of complete *kinêsis* is explicitly privileged by Aristotle and treated as ontologically fundamental in the context of the priority of actual to potential being: e.g., "it is obvious that actuality is prior in substance to potentiality; and as we have said, one actuality always precedes another in time right back to the actuality of the eternal prime mover" (*Meta.* 1050b2-5). Furley treats this as an inconsistency in Aristotle's physics; in the contexts of infinity and *kinêsis* Aristotle speaks about (surd) potential beings that are not correlated with any possible actual being, even though that's out of keeping with the priority of actuality to potentiality (Furley 1967, 153-4). Perhaps it bears witness to the tension internal to Aristotle that he clearly introduces the notion of an unmoved mover in order to block an infinite regress (surd potentiality?) of motion (*Phys.* 256a16-7, a29-30).

[*kinêseis*] but of jumps [*kinêmata*], and will take place by a thing's having completed a motion without being in motion" (232a7-8).

Aristotle is clearly opposed to what one commentator calls "cinematographic" motion (Miller 1982, 109); motion cannot be reconstituted from unmoving snapshots in which a body is not currently moving. But why not? Much of Aristotle's argumentation relies on an "essentially linguistic" principle (White 1992, 253): that "something moving from one place to another should not, at the same time, be in the process of moving [*kineisthai*] and have completed its motion [*kekinêsthai*]" (*Phys.* 231b29-30). The applicability of this principle to motion is far from unquestionable. Miller charitably says that Aristotle is arguing, as he typically does, from "*ta phainomena*" or how things seem to us (1982, 106). He could just as well be arguing from linguistic *endoxa*.

The Epicureans, on the other hand, accept the very theory of motion that Aristotle repudiates. According to Simplicius:

[The Epicureans] say that that which moves is moving [kineisthai] over the whole magnitude constituted out of partless units, but with respect to each of the partless units it is not moving, but has moved [kekinêsthai]. Because if one were to postulate that that which moves over the whole is moving over these [indivisibles], they would be divisible. (In Phys. 934. 26-30)

For the Epicureans, it seems, the idiomatic predilections of their Greek milieu do not determine, or make a case one way or another for, the nature of motion. Since magnitudes and motions are constituted of indivisible minima ("partless units"), a given motion can be described in two ways. At the macro-level it is perfectly fine to say that the moving body moves in the present tense, but at the micro-level specifying the atomic nature of bodies and the minimal parts constitutive of atoms requires precision terminology at odds with conventional usage: motion proceeds by jumps, which is to say that at any given moment it is not moving, but has moved. In fact, this is precisely what Epicurus writes: "one must not believe that within finite bodies there is infinite motion, not even by smaller and smaller stages" but that there is some minimum quantum of motion (*Ep. Hdt.* 58).

The ostensible conflict with conventional language is exacerbated if we fail to remember that *time* is also constituted of minima.⁷ If time were continuous, but motion and magnitude discontinuous, a fine-grain analysis would present a picture of "staccato" motion, in which moving bodies alternate between motion and rest—resting for a short duration, then moving, then resting. In this case, objections to cinematographic motion make more sense, since time would provide an

⁷ Simplicius, *In Phys.* 934. 5-6; S.E. *M.* 10. 143.

intimation of continuity that motion and magnitude lack. It does seem contradictory to say that a body "is currently moving" (temporally), yet it always "has moved." Whereas Diodorus Cronus, for instance, accepts the staccato version of the cinematographic worldview—accepting continuous time but discontinuous motion (S.E. *M.* 9. 363)—Epicurus minimizes the paradoxical character of discontinuous motion by substituting "time-minima" for the rest intervals the staccato picture assumes (Miller 1982, 109). The Epicureans apparently accept Aristotle's principle that "the same reasoning applies equally to magnitude, to time, and to motion: either all of these are composed of indivisibles and are divisible into indivisibles, or none are" (*Phys.* 231b18-20) but put it to work for in a physics quite opposed to Aristotle's. Substituting time minima for rest intervals of continuous time entails that, on account of the complementarity of all three kinds of minima, it is no longer contradictory to say that a body simultaneously "is moving" and "has moved," as if verb tenses referred to ontologically different processes.

In the light of these considerations, Furley's explanation of why Epicurus adopts a "twotiered" theory of physical atoms (imperishable constituents of bodies) and conceptual minima (units of space, motion, etc.) is compelling (Furley 1967, 111-14). If Democritus' atoms were supposed to be simultaneously physically and conceptually indivisible, then he is subject to Aristotle's devastating criticism (at *Phys.* 240b8-241a6) that "because of the continuity of motion, [Democritus'] atom cannot escape mathematical division ... no extended body can as a whole simultaneously cross a spatial limit" (Morel 2009, 73). To destroy Democritus, Aristotle proposes another thought experiment in which a partless, indivisible body (a Democritean atom) is in motion or changing: "Suppose it is changing from AB to BC" (*Phys.* 240b20). Aristotle thinks if you assume an indivisible is moving then either it is not really an indivisible (is in fact divisible) or it is not moving, but Democritus tries to hold both (S.E. *M.* 7.214). Aristotle argues:

In the time in which [the atom] is changing it must be either in AB or in BC or partly in one and partly in the other; for this, as we saw [234b10-20], is true of everything that is changing. Now it cannot be partly in each of the two; for then it would be divisible into parts. Nor again can it be in BC; for then it will have changed, whereas the assumption is that it is changing. It remains, then, that in the time in which it is changing, it is in AB. That being so, it will be at rest. (*Phys.* 240b24-30)

Furley suggests that Epicurus' two-tiered atomism is a surgical response to this objection. On the one hand, as Simplicius informs us, Epicurus rejects Aristotle's assumption that change or motion means that something *is* changing or moving, in the present tense, which Aristotle understands as a kind of actualization of an incomplete or uncompletable potentiality. Epicurus affirms that motion, magnitude and time are indeed all constituted of jumps or "having-moveds," and implies that the

kinêsis-kinêmata distinction is artificial (Furley 1967, 114). But Epicurus also affirms that, although physically uncuttable, atoms are not *partless*, being themselves constituted of minima of magnitude (*Ep. Hdt.* 59).

So on one level, Epicurus bites Aristotle's bullet: yes, motion does occur by jumps, because surd infinite divisibility of a magnitude is inconceivable. But discontinuity is not as incomprehensible as Aristotle thinks, because if time, space and motion are all equally quantized it's not possible to set discontinuous motion in the context of temporal continuity (or vice versa). The absurdities that Aristotle claims are attendant upon atomism (e.g., "it has moved without moving" [Furley 1967, 128]) depend on an interpretation of motion (kinêsis) as a species of surd, or incomplete potentiality, structurally identical to the conception of infinite divisibility (apeiron kata diairesin) that is not immune from criticism. In a nutshell, Epicurus exposes Aristotle's dismissal of atomism as involving a *petitio principii*: Aristotle argues that finite divisibility (atomism) is impossible on the basis of a conception of motion that involves a recourse to infinite divisibility (potential infinity). On another level, Epicurus rejects Aristotle's assumption (derived from Democritus) that atoms are identifiable with spatial minima. Aristotle says: imagine a minimum spatial magnitude crossing a null spatial magnitude, a line or spatial limit, and you have a problem. Epicurus responds by implying that there is no problem imagining an atom traversing a line because atoms can be conceptually (if not physically) divided into minimal parts, and an atom's crossing a line can occur in increments of these subatomic parts. It may seem odd to say that time, magnitude, and motion have a quantum character, but there's nothing inconsistent about it.

But if Aristotle's objection to Democritean atomism fails, Epicurus' response to Aristotle looks like overkill. Epicurus does not need both of these "tiers" of argument. If Epicurus' response to Aristotle exposes the latter's assumptions about the nature of motion, and maintains that motion occurs in units of one minimum of extension per one minimum of time, he could just as well identify these minima of extension with atoms and not their parts (Furley 1967, 114, 129). Why does he thinks he needs a two-tiered atomism rather than Democritus' one-tiered version? One response to this conundrum (Konstan 1979) is to argue that minima are different in kind from atoms, as minima by definition lack *per se* existence and are *essentially* parts inseparable from their atoms (which explains why Epicurus denies an atom can be made up of only one minimal part [*Ep. Hdt.* 59; compare Lucretius, DRN 1. 628-34]). This account is no doubt descriptively sound but it fails to explain Epicurus' motivations for invoking such a difference in kind.

To explain why Epicurus retains the distinction between minima and atoms we should follow up on one of Furley's suggestions. Furley thinks that Epicurus was convinced by "Aristotle's careful analysis of the geometry of motion [which] made it clear that the distance traversed by a moving body must be composed of individual minima, if there are indivisible magnitudes at all" (1967, 129). In other words, geometrical considerations are the motivating factor. I think the interpretive key to Epicurean minima lies in the implied distinction between such minima and limit-entities like points or the line (qua "spatial limit") across which Aristotle imagines minima travelling. By limit-entities I mean the *n*-1 dimensional entities that stand as the "extremities" (*akra*) of *n*-dimensional magnitudes (e.g., the zero-dimensional point is the limit of the 1-D line, the line is the limit of the 2-D plane, the plane is the limit of the 3-D body). Evidently, Epicurus thinks that minima and limits are in some crucial way distinct, because (as even Zeno knew) a sum of limits cannot constitute an *n*-dimensional entity (for example, a line can't be a sum of points, since points have no linear magnitude [*Phys.* 231a25-6]), but a sum of minima *can* (White 1992, 203-5). The distinction between minima and limit-entities is in the foreground when Epicurus argues:

Since the finite thing has an extreme [*akron*] which can be distinguished even if it cannot be conceived as existing by itself, it is impossible not to think of the next thing in succession [*to hexês*] to [the extreme] as being of the same character and that by moving forward thus from one thing in succession to the next it turns out that one will in this fashion reach infinity conceptually. (*Ep. Hdt.* 57)

White interprets this passage as a dialectical argument working with Aristotelian premises, which is plausible given that the argument appears immediately after an argument against the infinite divisibility of magnitude (White 1992, 204-5). Aristotle's theory of magnitude requires hypothesizing a difference in kind between limit-entities and the constituent entities of a continuous magnitude (e.g., the difference between an endpoint of a line and the continuous points within a line), to the extent that a continuum has limit-entities within it only "potentially." Such a continuum can be infinitely divided, thus actualizing certain endpoints with each division, but without ever actualizing *all* of them. But Epicurus wants to show that this distinction between endpoints and continuous points does not hold up to scrutiny. He begins by arguing that any finite thing has an actualized limit, that is, a true limit with null measure or null extension in at least one dimension. White thinks this is something an Aristotelian would accept; such limit-entities are actual features of the physical world. Then Epicurus tries to trap the hypothetical Aristotelian by asking, "do we not first think of the *actual* surface or extremity, and then of the internal spatial

constitution of the body in terms of a unit 'of the same sort' (*toiouton*) *next in succession* to the actual surface, another such unit next to it, etc., until we fill up the internal spatial volume of the object?" (White 1992, 207) The term "in succession" (*hexês/ephexês*) which Epicurus invokes in this argument has an Aristotelian provenance. It refers to an organization of entities that are neither continuous (*sunekhê*) nor contiguous (*haptomena*). Things are continuous, Aristotle says, if their limits are one and the same, contiguous if their limits are together, and "in succession" if there is nothing of their kind in between them (*Phys.* 231a21-4). While Aristotle denied that indivisibles could be arranged continuously or contiguously, he left a "loophole" in not ruling out that minima could be arranged in succession (White 1992, 203; Sorabji 1983, 367-75).⁸ If Epicurus' hypothetical Aristotelian interlocutor accepts that a finite magnitude can be "filled up" with dimensionless limits, he will then have accepted, Epicurus thinks, that a finite *n*-dimensional magnitude is constituted from an infinite sum of *n*-1 dimensional limits, and consequently be impaled on one of the horns of Zeno's paradox of measure (White 1992, 207).

White thinks that for Epicurus the upshot of his argument is that Democritus had a point, that the infinite divisibility of magnitudes in the Aristotelian sense leads down a slippery slope toward their actually being divided (White 1992, 207; compare *GC* 316b22). Aristotle attempts to show the flaw in Democritus' reasoning (that divisibility *anywhere* entails divisibility *everywhere*) by claiming it relies on the assumption that all the points in a given magnitude are in succession with one another:

Hence [a magnitude] is not simultaneously 'wholly divisible' [i.e., divisible simultaneously *everywhere*]. For if it were, then, if it be divisible at its centre, it will be divisible also at a point 'immediately-next' [*exomenê*] to its centre. But it is not so divisible: for position is not 'immediately-next' to position. (GC 317a9-11)

For Epicurus, however, there is nothing to justify this restriction, since on the Aristotelian's own assumptions it is not impossible for indivisibles to be arranged in succession. If Epicurus' argument succeeds against Aristotle, then in some sense Democritus is vindicated, and Aristotle's infinite divisibility is shown to entail the dissolution of a magnitude "into non-being."

Even if Epicurus' argument, as Furley, Sorabji and White reconstruct it, does not succeed,

⁸ Compare Furley on *Ep. Hdt.* 58: Epicurus claims that minima are arranged "in succession" with an "echo of [Aristotle's] own words" (1967, 115). I'm unconvinced, however, that this loophole is as big as Epicurus needs it to be. Although Aristotle doesn't rule out the constitution of continua from indivisibles arranged *ephexês* at the same time as he rules out their constitution by continuous or contiguous indivisibles (*Phys.* 231a25-29), he does nevertheless appear to rule it out a bit later (*Phys.* 231b6-9). Whether or not Epicurus' argument succeeds against Aristotle, it is important to the extent it implies a geometrical origin of Epicurus' reasoning about minima.

it introduces an important consideration, and a conceptual key to understanding Epicurean minima. Epicurus imagines a scenario in which a magnitude is understood as an infinite sum of its limitentities (a conception of magnitude that Greek mathematics lacked the resources to do justice to [White 1992, 208]), implying that this infinite sum of limits is a problem for Aristotle since it exposes him to Zeno's dilemma. But we should recall Democritus' atomic hypothesis (*n*-dimensional magnitudes are not composed of infinite sums of *n*-1 dimensional entities, but of *finite* sums of minimal *n*-dimensional entities). Epicurus accepts this view as much as Democritus does. What his argument against Aristotle shows, then, is that if one accepts the atomic hypothesis, minima or indivisibles can't be identified with true limit-entities. Yet that's precisely what Aristotle does; the majority of his arguments against the constitution of magnitudes by indivisibles assume that such indivisibles have the properties of limits.⁹

Epicurus suggests, on the contrary, that such an assumption is unnecessary. In fact, we should read him as pointing out the impossibility of maintaining simultaneously [1] that magnitudes are constituted by the same sort of entities as their limits, and [2] that such entities retain the characteristics of true limit entities (i.e., having zero-measure in at least one dimension) (White 1992, 213). While Aristotle accepts [2] and rejects [1], Epicurus accepts [1] and rejects [2]. In other words, Epicurus advocates giving up *not only* the view he (probably wrongly) takes Aristotle's theory to reduce to—that magnitudes are constituted of (infinite) sums of limit-entities—*but also* the view that such limit-entities exist at all. All bodies, including atoms, are therefore constituted by (finite) sums of minimal, indivisible quanta. Even the limits of bodies, Epicurus says, are made of minima. As David Konstan puts it, Epicurean limits are not true limits as they are for Aristotle; they are "inconceivably small but nevertheless finite quantit[ies]" (Konstan 1979, 404).¹⁰

Even though minima manifestly lack the properties of true limits, Epicurus claims "we must believe that the minimal and indivisible parts are limits [*perata*]" (*Ep. Hdt.* 59). In other words, Epicurus' minima are meant to operate as limits that are not limit-entities. They are non-dimensionless limits, or indivisible infinitesimals (White 1992, 229). This is the paradoxical

⁹ Aristotle claims, for instance, that "time is not composed of nows, just as a line is not composed of points, and motion is not composed of jumps [$kin \hat{e}mat \hat{o}n$]; for this theory [sc. of indivisibles] simply makes motion consist of indivisibles in exactly the same way as time is made to consist of nows or a length of points." (*Phys.* 241a4-5)

¹⁰ Compare Simplicius, *In Phys.* 925. 10-23, and Furley: "Aristotle has shown that a continuous magnitude cannot be composed of indivisible units *which have no size at all*; but he has not shown that indivisible units *must* have no size" (1967, 116).

infinitesimal status of minima in Epicurus; they have minimal magnitude in all dimensions but are identified explicitly with (what one naturally takes to be dimensionless) limits.

EPICURUS AND ANCIENT GREEK GEOMETRY

The Epicurean introduction of infinitesimals in the form of minima is often understood as devastating for the foundations of geometry, insofar as infinitesimals conflict with the accepted Euclidian definition of limit-entities. Epicureans had the reputation of being both averse to and ignorant of geometry (White 1992, 225). Epicurean physical doctrines and widely accepted geometrical principles were seen to be mutually exclusive. Cicero, for example, remarks:

It is certainly unworthy of a physicist to believe in minima. And [Epicurus] surely would never have believed it if he had chosen to learn geometry from his own colleague Polyaenus rather than make Polyaenus unlearn geometry. (*De fin.* 1.20; compare *Acad.* 2. 106 and *Nat. deo.* 2. 47-8)

According to Sedley (1976), Epicurus' relation to the contemporary state of the art in Greek geometry can be characterized as a turn away from the mathematization of cosmology effected by the school of Eudoxus toward speculative physics. The *Letter to Herodotus* offers evidence that Epicurus thought the turn was ethically justified. Epicurus defines physics as understanding the "causes of the most important things," for example knowing that meteorological phenomena have nothing to do with the will of the gods (*Ep. Hdt.* 78), and claims that such an understanding of causes conduces to tranquility (*ataraxia*) and the absence of pain associated with pious fear (*Ep. Hdt.* 83). Epicurus contrasts physics (in his sense) with mathematical cosmology, which he calls "the investigation into settings and risings and turnings, and eclipses and matters related to these." He claims that astronomers specializing in such things have a kind of descriptive knowledge but not a knowledge of causes. Thus they "have fears just the same as if they did not have this special knowledge—and perhaps even more fears" (*Ep. Hdt.* 79).

Even though Epicurus' justification for mounting a challenge to conventional Eudoxan geometry seems largely ethical, I am less interested in that argument than in the renovation of geometrical thought achieved (or perhaps only implicit) in Epicurus' criticisms of Aristotle, especially the criticisms of the notion of potential motion and Aristotle's surd conception of infinity. Are Epicurean infinitesimal minima really so geometrically devastating? They provide a powerful lever for undermining not only Aristotelian assumptions but the geometrical conventions to which they are related. Sedley remarks that "Epicurus and his disciple Polyaenus had used their theory of a mathematically smallest magnitude to reject conventional geometry as misconceived" (2009, 35). There is no reason to reject out of hand the possibility that Epicurus and Polyaenus think conventional geometry was not just ethically but also mathematically "misconceived."

White thinks that the reason the Epicurean theory of indivisible quanta of magnitude, motion and time was "generally at odds" (1992, 219) with the standard geometry of the fourth century BCE is that this geometry was implicitly Aristotelian in character. Aristotle adopts and formalizes key assumptions of ancient Greek geometry, for instance that limit-entities are truly dimensionless and that magnitudes are not sums of limit-entities but continua in which limitentities exist only potentially until actualized by an act of division:

My strong suspicion ... is that the *geometrical* conception of continuous magnitude and the Aristotelian metaphysics supporting that conception (particularly the Aristotelian elucidation of infinite divisibility in terms of potentiality) were considered, in the Hellenistic period, to be inseparable. (White 1992, 192)

While Aristotle maintains that a continuous magnitude cannot be constituted of indivisibles (which he understands to be dimensionless limit-entities) (*Phys.* 231b10-15), and that geometry, as the study of magnitude, cannot be pursued if indivisibles are assumed, Epicurus outmaneuvers Aristotle by arguing that magnitudes are composed of *non*-dimensionless indivisibles, which is to say *infinitesimals*, arranged in succession (*ephexês*), neither continuously nor in contact with one another. This "successive" arrangement of minima explains why magnitudes must be understood as quantized or *dis*continuous in nature. Vlastos memorably calls physical discontinuity an Epicurean "law of nature" (1965, 138). If this reconstruction is correct, then Epicurus' practice of getting his followers to "unlearn geometry" means getting them to unlearn the assumptions or *endoxa* that predispose them toward Aristotelian metaphysics.¹¹

In order to save Epicurus from having to stand behind the devastating geometrical consequences of Epicurean atomism, commentators have focused on the question of whether Epicurus thinks his minima *have* boundaries (genuine limits with zero-measure in at least one dimension), or that minima *are* boundaries (are supposed to replace or do the same work as true limits), the latter option being apparently required by *Ep. Hdt.* 59. Furley, for instance, thought that Epicurus made a "mistake" in failing to perceive that minima are not incompatible with true limits. Minima can have limits while remaining "partless" because limits are by Aristotelian definition

¹¹ White repeatedly makes the point that a mathematically respectable theory of the composition of magnitudes as sums of indivisibles (albeit indivisible limit-entities), or in other words a true alternative to Aristotelian possibilism, was not available until Cantor's or Dedekind's formalizations of continuity in the 19th century (1992, 141, 182, 197, 281), and notes that even today a geometry premised on indivisible infinitesimals is hard to imagine (229). See Vlastos 1965 and Mau 1973 for attempts to outline a specifically Epicurean geometry.

essentially not parts (i.e., you can't assemble limits into a body) (Furley 1967, 116). If limits and minima are compatible, the hope is that Epicurean atomism is not irredeemably at odds with Greek geometry, and can ultimately be reconciled with it by means of some kind of finitist axiom-set (Vlastos 1965, 127).¹² If limits and minima are *not* compatible, however, then the Epicureans likely adopted a "stonewall" strategy toward geometry in general: the Epicurean does not feel obliged to respond to questions (either geometrical or philosophical) that bear witness to the questioner's dedication to an abandoned geometrical worldview that persists in conceiving of quanta as embedded in an infinitely divisible, continuous, more or less Aristotelian magnitude where dubious potentialities and conceptions of infinity lurk.¹³

The problem with replacing limit-entities with minimal quanta is that it is deeply destructive of Greek math.¹⁴ For instance, a constituent axiom of Greek geometry, the so-called "Axiom of Archimedes," is most likely a formal attempt to rule out infinitesimal magnitudes (White 1992, 148-9). Archimedes articulates the axiom twice (both times attributing it to someone else). In the preface to the *Quadratura parabolae* he writes: "The following lemma is assumed: that the excess by which the greater of (two) unequal areas exceeds the less can, by being added to itself, be made to exceed any given finite area" (*QP*, pref.). Elsewhere, he postulates that "of unequal lines, unequal surfaces, and unequal solids, the greater exceeds the less by such a magnitude as, when added to itself, can be made to exceed any assigned magnitude among those which are comparable with [it and with] one another" (*De Sphaero*, post. 5).

The point of such an axiom appears to be to rule out infinitesimal differences in magnitude. The point can be rephrased in a way that echoes Zeno's "paradox of measure." Assume an infinitesimal difference *i* between two magnitudes. If you add *i* to itself in the way Archimedes describes and the sum eventually exceeds not only the two given magnitudes but any magnitude, then it was not really an infinitesimal to begin with; it was not infinitely small, just very finitely small. If, on the other hand, adding *i* to itself infinitely many times does not exceed any finite

¹² The Epicurean Zeno of Sidon (2nd-1st century BCE) may have attempted such a reconciliation when he claimed that Euclid's construction of an equilateral triangle (*Elements* 1, prop. 1) requires an additional assumption, perhaps to make it compatible with Epicurean physics (Proclus, *In Eucl.* 199-200, 213-14). Vlastos reads Zeno of Sidon thus because he thinks that the Epicureans must have believed that a law of nature like minimal discontinuity would have to be compatible with any coherent set of mathematical axioms, including Euclid's (1965, 147). Sedley (1976) and White (1992), contrariwise, suspect that Zeno was underscoring the bankruptcy of Euclid's axioms by showing they require an unstated, false presupposition (perhaps that true limit-entities exist).

¹³ White 1992, 231. The strategy is inferred also by Sedley (1976, 24), Konstan (1979, 405), and Sorabji (1983, 372).

¹⁴ A fact Aristotle was already aware of (*De Caelo*. 271b10-12).

quantity, then it wasn't an infinitesimal to begin with, just a limit-entity without positive value in the relevant dimension of magnitude. The argument purports to show that infinitesimal quantities are untenable. There's every reason to think this axiom had widespread acceptance. Archimedes attributes the lemma to "earlier geometers" (*QP*, pref.), most likely referring to Aristotle's contemporary Eudoxus (*De Sphaero*, pref.). The early pedigree of the principle probably explains why Archimedes' Axiom is paraphrased at least twice by Aristotle (*Phys.* 266b2-4; *De Sensu.* 445b27-8), who lived about a century before the Syracusan.

Archimedes' (or Eudoxus') Axiom and the repudiation of indivisibles occupies a prominent position at the node of contact between Greek geometry and Aristotelian metaphysics. Although not particularly interested in the question of influence (did Eudoxus influence Aristotle, or Aristotle Euclid?), White conjectures that the views of Aristotle and the geometers reinforce and amplify one another. He argues that a "converse" version of the axiom is at work in Aristotle's understanding of infinite divisibility (1992, 135, 148).¹⁵ Compare Euclid:

Two unequal magnitudes being set out, if from the greater there be subtracted a magnitude greater than its half, and from that which is left a magnitude greater than its half, and if this process is repeated continually, there will be left some magnitude less than the lesser magnitude set out. (*Elements* 10, prop. 1)

If the point of Archimedes' Axiom in its normal (non-converse) expression is that adding some positive value to a fraction of itself enough times results in a value in excess of any finite value, then the upshot of the converse axiom is that *subtracting* a fraction of some positive value from itself enough times produces a value smaller than any finite value. For instance, assuming Euclid's version of the converse axiom, subtracting two thirds of a value (say, 1) will give you 1/3 of the original value. Subtracting 2/3 of 1/3 will in turn give you a smaller value still (1/9 of the original value), and this process can be continued *ad libitum* (1/27, 1/81, 1/243, etc.). Aristotle recognizes that the two versions of the axiom are related to one another: "by continual addition to a finite magnitude I must arrive at a magnitude that exceeds any assigned limit, and in the same way by continual subtraction I must arrive at one that falls short of any assigned limit" (*Phys.* 266b2-4). Although Aristotle doesn't accept that there could be any *physical* instance of an infinitely large being, such as Archimedes' Axiom could be taken to imply the possibility of (*Phys.* 206a15-18),

¹⁵ "Converse" is not a technical but a fuzzy, intuitive term here (White 1992, 149). White formalizes a number of versions of the converse Archimedes' Axiom, but I won't replicate the details. A converse of the way the axiom is articulated in the *Quadratura parabolae* ought to look something like this: "the *defect* by which the *lesser* of two unequal magnitudes is *less* than the *greater* can, by being *subtracted* from the original magnitude, be made *smaller* than any given finite magnitude."

nevertheless the converse (Euclidean) version of the axiom neatly describes what Aristotle calls the infinite by division (*apeiron kata diairesin*): "Euclid's lemma require[s] the infinite divisibility of magnitude in the Aristotelian sense of a process of division that can always be taken a step further" (White 1992, 151). A version of the geometrical axiom whose purpose is to repudiate indivisible magnitudes underwrites Aristotle's potential infinity.

The application of Archimedes' Axiom can be taken further. White points out that a (converse) version of the axiom is involved in Archimedes' application of the so-called method of exhaustion to prove that the area of a parabola (bounded by a chord parallel to the tangent of the parabola's vertex) is four-thirds the area of an inscribed triangle (*QP*, props. 18-24; White 1992, 150). The "method of exhaustion" whereby Archimedes accomplishes this proof is badly named, since it invokes a basically Aristotelian or Euclidean "conception of the inexhaustibility of the infinite" (Dijksterhuis 1987, 130), infinity in the (possibilist) sense that for any finite value, however small, there is always a smaller value. Archimedes proves that the area of a parabola is 4/3 the area of the inscribed triangle thus:

[1] by constructing two triangles on the sides of the inscribed triangle in the discrepant area in between the parabola and the original triangle, and then repeating this process:

[2] constructing four triangles in the remaining discrepant area on the sides of the two triangles constructed in the first step;

[3] constructing eight triangles on the sides of the four triangles constructed in the second step, etc.

This method of "exhausting" the area by which the parabola exceeds the inscribed triangle (by filling it with other triangles) succeeds because at every step Archimedes proves that the area of the triangles constructed (two triangles in step [1], four triangles in step [2], etc.) is equal to 1/4 the area of the larger triangle on whose sides they are constructed (and which, in most cases, had been constructed in the immediately previous step of the demonstration) (*QP*, prop. 22). The climactic proposition 23 of *Quadratura parabolae* presents the argument in a nutshell as a thought experiment involving a series of areas. Imagine a square, Archimedes says, and let it be divided into quarters, *A*, *B*, *C* and *D*. Area *A* I keep, and areas *B* and *C* I give away. Then I divide again the remaining area (*D*). If I were to divide it into thirds and keep one third, then at this point I would have exactly 1/3 of the entire original square (arithmetically, 1/4 + 1/12 = 1/3). However, I don't divide the remaining area into thirds, but again into quarters (call them *E*, *F*, *G* and *H*) and then repeat the previous operation, keeping *E* for myself, and giving *F* and *G* away. If I were to divide *H*

into thirds and keep one third for myself then, once again, I would have exactly 1/3 of the original square (1/4 + 1/16 + 1/48 = 1/3). But, again, instead of dividing *H* into thirds I quarter it, and this process continues indefinitely. The longer the process goes, Archimedes implies, the closer I get to having exactly 1/3 of the original square. This illustration explains the manner by which Archimedes arrived at the proof that the difference between the area of the parabola and the inscribed triangle is 1/3. The third in question here among the squares is, of course, the third by which the area of the parabola exceeds the area of the original triangle inscribed within it.

Despite the modern temptation to regard Archimedes's proof as the discovery of the concept of the sum of an infinite series (as if 1/3 were the sum of the infinite series $1/4 + 1/4^2 + 1/4^3 \dots + 1/4^n$), this cannot be how Archimedes understood the proof. Rather, the proof by exhaustion relies on an Aristotelian conception of an infinite process as inexhaustible, impossible to regard as completed. As White puts it, the Greek geometrical context in which Archimedes is writing is hostile to a conception of limit as an infinite sum (although it clearly does possess the notion of limit in an "intuitive sense" [1992, 141]): "for both Aristotle and Archimedes, adding or summing is a finite process that involves a finite number of addenda, although of course it is a process that is always *extendable*" (White 1992, 142). In fact, for Archimedes, identifying the discrepant area during the quadrature of a parabola with an infinite sum would amount to an appeal to "unscientific" assumptions, just as much as the appeal to indivisibles (1992, 142).

Nevertheless, Archimedes elsewhere deploys such unscientific assumptions. He appeals to indivisibles in order to describe the method by which he arrived at this very proof in *Quadratura parabolae*. Archimedes' work, *The Method of Mechanical Theorems* is, so to speak, a meta-geometrical work in which he shows how the "pure geometrical" proofs he has demonstrated elsewhere are worked out by means of concepts derived from mechanics (*Method*, pref.). While the proof of the quadrature of the parabola in *Quadratura parabolae* is "purely geometrical," the *Method* accomplishes the same proof in an alternative style by means of mechanical concepts like "fulcrum," "centre of gravity," etc.

To accomplish his second proof (*Method*, prop.1) Archimedes inscribes both the parabola and triangle taken from *Quadratura* inside an even larger triangle, four times the area of the original inscribed triangle, then uses a line-segment functioning as a lever to "balance" the parabola on the larger triangle (using the so-called "barycentric method"). Constructing this elaborate imaginary mechanical system enables Archimedes to apply his "lever principle" (from *De planorum aequilibriis*, prop. 6): "commensurable magnitudes are in equilibrium at distances inversely proportional to their weights (or areas, in the case of plane figures)" (White 1992, 210). Knowing the distance at which the triangle and the parabola are in equilibrium, Archimedes can determine the area of the parabola, which turns out to be 1/3 that of the larger triangle. Since the smaller triangle is 1/4 the area of the larger, he thus shows that the parabola must be 4/3 the area of the triangle inscribed within it. Crucially, however, Archimedes can only pin the parabola to the balancing system by conceiving of its area as constituted by (an infinity of) parallel lines that are extended out to constitute the larger triangle he has constructed.

Archimedes is apparently somewhat embarrassed by this "unscientific" assumption, whereby limit-entities (lines) act as indivisible parts of a plane magnitude. He explains that the parabola being 4/3 the area of the inscribed triangle "is not actually demonstrated by the argument used; but that argument has given a sort of indication that the conclusion is true" (*Method*, prop.1). Archimedes' intimation of a deficiency in his pseudo-proof in the *Method* is most likely "a consequence of the use of indivisibles" (Dijksterhuis 1987, 319). While in the *Quadratura* Archimedes demonstrates a kind of "intuitive" understanding of mathematical limits, distinct from the modern construal of limits as sums of infinite series, in the *Method*, on the contrary, he evinces a *differential* rather than an *integral* intuition—an intuitive sense in which magnitudes are constituted of indivisible parts. Despite his embarrassment, the fact that Archimedes deploys unscientific assumptions suggests their geometrical usefulness. Archimedes is in a "psychologically awkward position" (White 1992, 212): treating *n*-dimensional magnitudes as composed of *n*-1 dimensional entities is *useful*—in fact, it enables Archimedes to produce one of the most admired ancient geometrical proofs—but as far as the consensus among ancient geometers goes it must be wrong.

Epicurus' theory of minima should be read as an attempt to accept what Archimedes feels he cannot—the idea that an *n*-dimensional magnitude (e.g. a triangle of dimension 2) is constituted of magnitudes of *n*-1 dimensions (lines of dimension 1), which nevertheless behave as minimal quantities of *n* dimensions. Epicurus attempts this geometrical provocation by identifying limits (*perata*) with minimal parts (*Ep. Hdt.* 59), and arguing that such indivisibles provide intrinsic measures of the magnitude of bodies, including atomic ones (*Ep. Hdt.* 58). Archimedes provides evidence that, beyond the ethical appeal of eliminating fear and promoting tranquility, there is also a "sort of *mathematical* appeal … to taking the plunge advocated by Epicurus: conceiving (supposedly continuous) magnitudes as internally constituted of the same sort of units as their boundaries or superficies" (White 1992, 212-13). I have dwelt on these matters in detail because I

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think the provocative mathematical aspect of Epicureanism is part of what Deleuze appeals to when he calls Epicurean atomism a "problematic idea." Insofar as Epicurean atomism is also a "minimism" that presents a lofty challenge for conventional geometry, it constitutes one of the "barbaric or pre-scientific" (DR 170) conceptualizations of the calculus (specifically, the infinitesimal calculus of inconceivably small magnitudes), which are important to Deleuze's argument in *Difference and Repetition*. When in *Difference and Repetition* Deleuze builds a positive theory of difference in itself on the basis of the concept of a "differential," he builds upon work inaugurated by Epicurus.

ATOMISM AS A PROBLEMATIC IDEA

If Deleuze considers the Epicurean version of the atomic hypothesis to contain a "problematic idea" (DR 184), it is because of the Epicurean insistence on infinitesimals, the heterodox, paradoxical elements of Epicurean physics. To flesh out this claim, I focus on roughly the first half of the fourth chapter of *Difference and Repetition*, in which Deleuze develops a theory of what he calls differentiation (with a "t"), a term he borrows from the operation of finding the derivative of a function in calculus (Salanskis 2006, 52).¹⁶ He defines differentiation as the determination of the virtual contents of a problem or "problematic Idea" (DR 207). The object of the theory of differentiation is reality insofar as it is not actual, or as Deleuze puts it, the reality of "structure" (DR 209).

Problems, Deleuze says, are crucial to the alternative image of thought he is seeking to define in opposition to the classical image. They are supposed to have an objective existence (DR 169) not merely relative to a subjective determination (DR 63, 180). In other words, problems should not be understood as the correlates of a deficiency of knowledge, or *a fortiori* the negative correlates of propositions (as Aristotle thought, DR 157-8). For Deleuze, problems are spurs to thinking. Thinking begins with problems, since only problems *force* thinking to occur, as an event or an "encounter" (DR 138-9). The galvanizing trait of an encounter with a problem is that its solutions are not already given, waiting to be discovered, but require creating; thinking through problems is emphatically *not* the rote recital of temporarily hidden solutions, like those already

¹⁶ For a general discussion of the difference, and complementarity, between differen*t*iation and differen*c*iation (with a "*c*") in *Difference and Repetition*, see Salanskis 2006, 50-1: "[Deleuze] starts with the 'problematic idea' ... which generates a proper space of the problem, an internal topology of the virtual, through a process which Deleuze called *differentiation*. But this process cannot avoid simultaneously being the process of the concrete formation of real individuals ... such an effective and actual process Deleuze calls *differenciaion*." Differenciation means individuation, differentiation means its conditions.

known to one's teacher (DR 180). In sum, Deleuze advocates inverting the way the term *problem* is conventionally understood; problems aren't imperfections or lacunae in a primordial plenum of solutions: "solubility must follow from the form of the problem" and not the other way around (DR 180).

The inversion of the relationship between problems and solutions requires that the value of problems be determined as positive rather than negative; problems aren't just whatever remains *un*-solved. Deleuze stipulates that the word "positivity" be reserved for the state of the problematic Idea (DR 203). Problems are positive because they possess a power and play an active role both ontologically and epistemologically. The chief drawback, Deleuze thinks, of evaluating problems as negative is underestimating their productive power.

Deleuze's emphasis on problems derives from Kant, whom he credits with appreciating the "objective value" of problems: "problems *qua* problems are the real object of Ideas" (DR 169). In Kant's construction of the relations among the faculties of reason and understanding, problems do not arise from contextual elements outside thinking, but as a consequence of the operation of thought itself. He argues that transcendental Ideas, "given by the nature of Reason itself," remain "problem[s] without any solution" to the extent that they admit of no demonstration in terms of the phenomena of the understanding (CPR A327-8/B384). As one commentator puts it, in Kant "the object of the idea, since it lies outside of experience, can neither be given nor known, but must be represented in a *problematic* form, without being determined" (Smith 2006, 147). Nevertheless, Deleuze criticizes Kant's conception of problems for remaining committed to the classical hierarchy in which problems are subordinated to solutions. The "radical reversal in the problem-solution relation," Deleuze thinks, amounts to a "more considerable revolution than the Copernican [i.e. Kantian]" (DR 180).

Deleuze credits mathematicians and geometers with accomplishing the conceptual revolution and reversing this hierarchy. He refers to "old so-called barbaric or pre-scientific interpretations of the differential calculus" (DR 170), which provide a model for Deleuze's theory of differentiation in which problems are primary (Bowden 2011, 103). According to Deleuze, those practitioners of differential calculus who relied on intuitive, broadly geometrical conceptual tools before the invention of a rigorous, arithmetical, "strictly finite interpretation of the calculus" with which their barbarism was civilized, developed an interpretation of problems that goes "beyond

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Kantian '*extrinsicism*'" (DR 180).¹⁷ That is, Deleuze considers Kant to have understood problems in a purely "extrinsic" manner because the problem for Kant remains unrepresentable or undetermined. This is a "negative" evaluation of the problem, in the sense that it approaches problems in terms of conventional representations, rather than on their own terms. According to Deleuze, to the extent that what cannot be represented in Kant, for example the objects of Ideas, "remains undetermined—or is not determined as differential—representation, for its part, is not really overcome" (DR 178). Absent in Kant but present in calculus is the "extra-propositional or sub-representative element expressed in the Idea by the *differential*, precisely in the form of the problem" (DR 178). In other words, characterizing thought as differential is required to escape from the clutches of "representation," Deleuze's term for the set of assumptions that subordinate difference to identity. "Barbaric" interpretations of calculus characterize thought in this way, Deleuze says. So does Epicurus, as we shall see.

The underestimation of problems, and especially their productive power to galvanize thought, goes back a long way. In a text Deleuze cites at least three times (DR 163; LS 54; TP 554 n.21), the Neoplatonist Proclus refers to Euclid's distinction between two kinds of propositions derived from first-principles (or "axioms"): *theorêmata* and *problêmata* (Proclus, *In Eucl.* 77-81). While theorems refer to demonstrations concerning eternally existing essential properties of figures (e.g., the triangularity of a triangle), problems refer to the construction of figures with geometer's tools, and thus describe the coming-to-be of objects that are not eternal (77-8). Thinking deductively means something different in each context: "in theorematics, a deduction moves from axioms to the theorems that are derived from it, whereas in problematics a deduction moves from the problem to the ideal accidents and events that condition the problem and form the cases that resolve it" (Smith 2003, 415).

Take Apollonius' conic sections: the *problêma* here is the projection of a circle onto secant planes rotating with respect to the apex of a cone. Parabola, hyperbola and ellipse are understood as the "ideal accidents" deduced from Apollonius' problem ("ideal" because not actually physical).¹⁸ Apollonius' problem is thus solved in each particular "case" (parabola, hyperbola, etc.). Deleuze

¹⁷ See Smith 2003, 418-20 for a brief historical sketch of these developments, to which Deleuze refers in his seminars (e.g., 22 Feb. 1972). Smith singles out the contributions of Weierstrass, Dedekind and Cantor: "The assumptions of Weierstrass' discretization program—that only arithmetic is rigorous, and that geometric notions are unsuitable for secure foundations—are now largely identified with the 'orthodox' or 'major' view in the history of mathematics as a progression toward ever more 'well-founded' positions" (Smith 2003, 419).

¹⁸ Smith 2003, 415. The "ideality" of conic sections is similar to the status of plane figures in Archimedes' application of the barycentric method to a proof of area; such plane figures are *heavy* ($\beta \alpha \rho v \beta$) only "ideally."

offers another example of problematics in ancient geometry. While Euclid defines the straight line as "lying evenly with the points on itself" (*Elements* 1. Def. 4), this theorematic definition in terms of an essential property, Deleuze says, cannot have been the primitive definition of "the straight." Rather, straightness was originally a case of solution ("the shortest distance between two points") for a problem of curvilinearity, minimum deviation:

The mathematician Houël remarked that the shortest distance was not a Euclidean notion at all, but an Archimedean one, more physical than mathematical; that it was inseparable from a method of exhaustion; and that it served less to determine the straight line than to determine the length of a curve by means of a straight line. (DR 174)

That is, instead of being understood statically as the instantiation of a theorematically deduced essence, the straight line is defined dynamically as a limiting case of a curve (Smith 2003, 416).

The historical tendency has been to subordinate problems to theorems by construing the former negatively, as *non*-eternal, *un*-rigorous *non*-beings. According to this view, "problems concern only events and affects which show evidence of a deterioration or a projection of essences in the imagination" (DR 160). Thus Proclus claims that "because theory is the predominant element in geometry, as making is in mechanics, every problem has also some theory in it; but the reverse is not true ... not all theorems require the assistance of problems" (*In Eucl.* 79). Proclus' remark "not all theorems require the assistance of problems" succinctly states the traditional view: problems and theorems are related asymmetrically, the former being understood as the negative projections of the latter in the imagination or in mechanical comings-to-be. Against this assumption—a fantasy of pure reason as having no need of being galvanized into life by a hitherto inconceivable problem—Deleuze refers to philosopher of mathematics Albert Lautman, who argues that the existence of problems without solutions proves that problems and solutions are different in kind, and not merely negative and positive flavors of the same type of thing. Deleuze derives from Lautman the thesis that:

A problem has three aspects: its difference in kind from solutions; its transcendence in relation to the solutions that it engenders on the basis of its own determinant conditions; and its immanence in the solutions which cover it, the problem being the better resolved the more it is determined. (DR 178-9, modified)

In Lautman's meta-mathematical theory, problems (which Lautman, like Kant, calls "Ideas") exist prior to (transcend) the solutions in which they are manifest, and are also (immanently) present in the production of cases of solution. Lautman calls the tension between these two aspects of problematic ideas "dialectical" (2011, 203-06). Deleuze adapts Lautman's conception of dialectical

Ideas (DR 179) and opposes it to Kant's.¹⁹ Rather than treat problems as undetermined, Lautman's conception of the dialectical problem is "positive," in that it spurs thinking and generates cases of solution, and aligns with the determination of problems as differential.

Deleuze generalizes Lautman's mathematical conception of dialectical ideas. "*Problems*," he says, "*are always dialectical*: the dialectic has no other sense, nor do problems have any other sense. What is mathematical (or physical, biological, psychical or sociological) are the solutions" (DR 179). Problems, dialectically conceived, thus superintend a variety of disciplines—perhaps *any* discipline that is animated by real thinking (galvanized by an encounter), and is not just the rearrangement of the components of representation (*doxa* or opinions [DR 134]). If Deleuze thinks of himself as a dialectician (as I suggested in Chapter 1), it is because his method of approaching other disciplines (e.g., mathematics) consists "[not] so much in finding a classical metaphysical problem within an mathematical theory, as grasping the overall structure of a theory in order to extract the logical [or dialectical] problem which is at once defined and resolved by the very existence of this theory" (Bowman 2011, 111).²⁰ When challenged in his dissertation defense about his appropriation of mathematical concepts, Deleuze invoked Lautman's theory of dialectical ideas, in which the theory of the calculus participates (DI 107).²¹

Within the history of mathematics, Deleuze claims, there has been a consistent productive tension between "problematic" and "theorematic" (or "axiomatic") conceptions of the subject matter. This tension is itself evidence, he thinks, of the priority of the dialectical/problematic Idea to the disciplines it oversees. In *A Thousand Plateaus*, Deleuze and Guattari assimilate problematic and theorematic approaches to math to two different tendencies in the epistemology of science, which they call "royal" or "State" science (theorematic) and "minor" or "nomad" science

¹⁹ Bowden (2011, 111), Smith (2003, 428), and Duffy (2006a, 142) all argue as much.

²⁰ Deleuze refers, without providing a reference, to an Aristotelian definition of "dialectics": "Aristotle assigned the dialectic its real task, its only effective task: the art of problems and questions. Whereas Analytics gives us the means to solve a problem already given, or to respond to a question, Dialectics shows how to pose a question legitimately" (DR 160). The reference seems to be to *Topics* 10-11, where Aristotle treats dialectics as the theory of problems. But what Aristotle means by "dialectics" is far from what Deleuze means; for Aristotle, "reasoning ... is 'dialectical' if it reasons from opinions that are generally accepted" (*Top.* 100a30-1). Deleuzian dialectics is not reasoning on the basis of correct-sounding *endoxa*, but rather involves a critique of the doxastic image of thought.

²¹ This Platonic language of "participation" is no accident. Lautman identifies this work as a kind of renewed Platonism: "We only wish here to indicate the Platonic conclusion that these researches seem to us to impose: the reality inherent to mathematical theories comes to them from their participation in an ideal reality that is dominating with respect to mathematics, but which is only knowable through it" (Lautman 2011, 30). Lautman is aware, however, that his conception of ideas is distinct from a stereotypically Platonic one to the extent that dialectical ideas do not stand as models to be copied by mathematical theories (2011, 199), but as subject to a kind of genesis (206) in the logical forms of the solutions. See Cassou-Noguès 2010.

(problematic) (TP 362; Smith 2003, 412). Archimedean geometry, especially the apologetically mechanical approach of the *Method* and occasional tolerance for infinitesimals, is an archetypically "minor" science, precisely because it implies what theorematic math denies, that problems are not merely adjuncts or subalterns to theorems. Despite the fact that theorematic State science accepts nomad science only on its own terms, either by imposing theorematic "modes of formalization" on the latter, or by suppressing elements of it entirely, Deleuze and Guattari argue that there are fertile interactions between the two. Problematics force theorematics to think (or think differently), and theorematics tries to "appropriate" elements of problematics (TP 362).

The Archimedean application of the "method of exhaustion" to determine the quadrature of the parabola is a good example of what Deleuze and Guattari are talking about (TP 361). Although Archimedes' official, purely geometrical proof in *Quadratura parabolae* presupposes a perfectly conventional conception of infinitely divisible magnitude, the Method implies that the results obtained were "hinted at" by an obscure intuition that magnitude is constituted by indivisibles, something explicitly forbidden by the theorematic math of Archimedes' day and its philosophical counterpart, Aristotelian physics. As Deleuze and Guattari remark, "Minor science is continually enriching Major science, communicating its intuitions to it, its way of proceeding, its itinerancy, its sense of and taste for matter, singularity, variation" (TP 485). They are not merely saying that science proper is continually enriched by extra-scientific or non-scientific attitudes: "Major science has a perpetual need for the inspiration of the minor; but the minor would be nothing if it did not confront and conform to the highest scientific requirements" (TP 486). The major contribution of minor science lies in the presentation of problems (TP 374), that is, I take it, articulating wellformed problems in the appropriate scientific idiom. For this reason, Deleuze and Guattari also say that problematics is often (but not necessarily) linked to "ambulant" or applied sciences like metallurgy, ballistics, and geography (TP 372), which have pragmatic social dimensions. The alliance between problematics and the ambulant sciences puts the lie to the illusion that (major) science can pursue an autonomous development independent of its social context; science is not "destined to take on an autonomous power," a fantasy linked to that of a pure "thought without problems" (TP 373).

Archimedes' work is not the only example of problematic science in action. If it is true that "State" science was continually appropriating elements of Archimedes' nomad science (in this case, an appropriation effected by Archimedes himself), "it is also true of the differential calculus. For a long time it had only a parascientific status and was labeled a 'Gothic hypothesis'; royal

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science only accorded it the value of a convenient convention or a well-founded fiction" (TP 363). Deleuze and Guattari recognize in the supposedly unrigorous intuitions of pre-Weierstrassian calculus a similarly nomadic epistemology at work.

In *Difference and Repetition* Deleuze contrasts the problematic aspect of calculus and the differential conception of Ideas to Kant's extrinsic conception of Ideas. Deleuze calls the problematic kernel of "barbaric or pre-scientific" interpretations of the calculus the "treasure" buried within it (DR 170). "Just as we oppose difference in itself to negativity, so we oppose dx to not-A, the symbol of difference ... to that of contradiction" (DR 170). As long as its appropriation by theorematics remains incomplete, the differential calculus bears witness to the problematic idea that dialectically motivates it (namely, the idea of an infinitesimal quantity which is also a limit entity), and it remains possible to perceive the "truth" of the problem, its generative quality. Similarly, the differential dx (as opposed to symbol of negation) allows us to characterize the elements of the problematic idea (e.g., the values of the differential) as differences that aren't mediated by the identity of concepts or judgments. To the extent that the mathematical idea of the differential participates in the dialectical problematic idea, it enables thinking about problems to occur in terms of "difference in itself."

Deleuze's claim that *dx* is the "symbol of difference" derives from a reading of the post-Kantian mathematician and philosopher Wronski (DR 170; cf. Kerslake 2009), according to whom "the differential calculus constitute[s] a *primitive algorithm* governing the *generation* of quantities, rather than the laws of quantities *already formed*" (Boyer 1959, 262; cf. DR 175). To ensure that differential problematic Ideas are not mistaken for Kantian problematic Ideas, which underestimate their productive power, Deleuze breaks down precisely what aspects of the "barbaric" theories of differential calculus (e.g., Wronski's) allow them to avoid a Kantian fate. To be really problematic in the full sense (not the sense hijacked by negativity) it's not enough that *dx* remain undetermined. The differential needs to substitute for its negative value relative to the domain dominated by representative understanding the positive value of an intrinsic determination.

What does that mean? While Kant's problems/ideas go beyond our understanding and cannot be represented, thus remaining negative (*un*determined) from that point of view, according to the "barbaric" calculus problems are not *un*determined, but determined differentially. As Carl Boyer explains (1959, 11-13), originally the idea of the "differential" in calculus was basically just the idea of the infinitesimal: a minimal quantity or interval, like a mathematical atom, although infinitely small. This notion, if it could've been made rigorous, would've helped to define the

derivative (the mathematical device used to represent properties of a function at a point) as a quotient of two such differentials (e.g., the "instantaneous velocity" of a point as a ratio of a differential of distance over a differential of time), as well as to define the integral as an infinite sum of differentials. However, no definition of the differential as infinitesimal was satisfactory. All attempts ran afoul of updated versions of Zeno's paradox of measure. But since the differential is a useful idea, it was put to use anyway, and was defined in a more inoffensive way that can be made rigorous. Modern calculus since Cauchy in the early nineteenth century, or perhaps even D'Alembert (Boyer 1959, 274), has construed the differential not as a mysterious infinitesimal but in relation to the derivative itself. This construal is preferable since the latter can be defined satisfactorily (as the limit of an infinite sequence, once the difference between the value of the difference quotient being examined—e.g., change of distance over change of time in the case of instantaneous velocity—and the value of the limit—e.g., 0—becomes arbitrarily small). This definition of the differential has a unique consequence. When we attempt to find the derivative of two differentials so defined (interpreting the derivative as the quotient of differentials, a relation represented in Leibnizian notation as dy/dx, then the definition begins to bear fruit. This relation can be made precise qualitatively rather than quantitatively. As Boyer puts it, while dx is treated as an independent variable, "the differential dy of a function y = f(x) is defined as that variable the values of which are so determined that for any given value of the variable dx the ratio dy/dx shall be equal to the value of the derivative at the point in question" (1959, 12). The key point is just that the values of dy and dx are linked reciprocally in relation to the value of the derivative.

Deleuze recognizes that differentials are not infinitesimals, noting that "it is a mistake to tie the value of the symbol dx to the existence of infinitesimals" and that the "principle of a general differential philosophy ... must in no way depend upon the infinitely small" (DR 170-71). He also recognizes that the modern interpretation of differentials introduces a "principle of reciprocal determination" (DR 171) between dx and dy. These differentials cannot be defined directly as infinitesimals without contradiction, but a relation between them, a ratio or quotient of differentials, can be given a sensible interpretation. Unsurprisingly, he gives the reciprocal determination of differentials, in the style of Wronski, a highly metaphysical interpretation; this determination has a creative power and presides over the genesis of magnitude (cf. Boyer 1959, 263). Such determination is the "differential determination" of problems that Deleuze contrasts to the Kantian merely negative determination. In the differential relation it is possible to see the selfdetermination of a problem at work because this relation of dx and dy is purely qualitative. Deleuze is impressed by the way that, rather than being a relation of infinitely small but determinate quantities, the differential relation (dy/dx) embodies a "vanishing relation" or a "pure relation" that subsists independently of the values of x and y.²² The relation is "pure" because, although it presides over the "annihilation" of quantity (as *dx* is "strictly nothing" in relation to *x*: x + dx = x) the differential relation can still be determined *qualitatively* (DR 171-2).

What Deleuze calls the "differential relation" is more commonly simply called the derivative: dy/dx is a derivative of y with respect to x. It is strange to call it a "relation," which sounds like a correlation of numbers, a relationship between quantities or already generated magnitudes. This is certainly not what Deleuze wants to imply, since he considers the greatness of barbaric interpretations of the calculus to be the way they treat the derivative as presiding over the genesis of magnitude. Possibly Deleuze's thought is obscured by the translation of his phrase "*rapport différentiel*" which can also be rendered "differential ratio." The Leibniz text that Deleuze draws on in his seminar characterizes dy/dx as a ratio of infinitesimal quantities. The triumph of the respectable, modern, scientific interpretation of the derivative, in contrast, is to define it not as a ratio but a symbol for a single function of x, since the notion of a ratio of infinitesimals is either contradictory or reduces arithmetically to zero (0/0).

The interpretation of the differential relation as a "vanishing" ratio is one way of characterizing Deleuze's claim that the differential in the calculus is a kind of "Idea." In this case, it is like a Platonic Idea, a kind of qualitative universal independent of individuals, such as particular values of *x* and *y*. This "Platonic" interpretation of the differential is derived from a reading of Jean Baptiste Bordas-Demoulin, a nineteenth-century mathematician who thought that differentials could help to represent mathematical universals as they are in themselves (DR 171-2). Bordas-Demoulin criticized Descartes for failing to represent mathematical universals, such as the concept of the circumference of a circle (expressed in coordinate geometry as $x^2 + y^2 - R^2 = 0$), in a genuinely universal way. He thought the procedure of making algebraic variables stand for quantities in general is not sufficient to represent the universal that the equation presumes to represent. Any particular values of *x*, *y*, and *R* generate some particular circle, not the universal

²² Deleuze uses the phrases "vanishing relation" and "pure relation" in his seminar (17 Feb. 1981) and they have passed into the critical literature: Duffy 2006a, 120-21, and 2006b 299; Smith 2005a, 137-9. Deleuze's seminars indicate that he attributes this interpretation of the differential relation, in terms of the purely reciprocal determination of the values of dx and dy, to Leibniz, especially the text *Nova methodus pro maximis et minimis* (1684). In this he is not alone; Boyer notes that it has been common, if not entirely accurate, to state that Leibniz here anticipates the D'Alembert-Cauchy interpretation of the differential (1959, 210).

circle. Everything changes when we seek the differentials, however. The insufficiency of an algebraic procedure for expressing mathematical ideas is dispelled when we differentiate: the equation $x^2 + y^2 - R^2 = 0$ becomes ydy + xdx = 0. Somers-Hall explains: "Because this function is constituted in terms of dy and dx, which cannot be assigned a value (they are strictly 0 in regard to y and x), we no longer have a function that can be understood simply in terms of possible values of variables" and consequently the equation more clearly epitomizes the universal (Somers-Hall 2013, 135). The key insight that Deleuze wants to derive from the reciprocal determination of the derivative, and this "Platonic" interpretation of it, is that the differential is inexpressible in terms of finite quantity. Deleuze's reading of Bordas-Demoulin implies that there is an important, ineradicable distinction to be marked between infinitesimal and finite magnitudes. Deleuze refers to Wronski because Wronski maps this distinction onto the difference between Kant's faculties of *reason* and *understanding*.

In the *Critique of Pure Reason*, Kant notes that his use of "Idea" is distinct from Plato's (A313-4/ B370-1). He agrees with Plato that Ideas represent what can never be experienced, but rejects Plato's dogmatic metaphysical view that these are extra-mental entities responsible for the being and intelligibility of the sensible world. Kant says that he adopts Plato's word because he understands what Plato meant better than Plato did himself. Deleuze does the same thing to Kant as Kant does to Plato. He adopts the word "Idea" but claims that the conceptual resources of the "barbaric" calculus reveal how the differential interpretation of the problematic Idea, which involves a theory of the determination of quantities, is superior to Kant's own interpretation of the Idea as undetermined. According to Deleuze, just as there have been different but complimentary interpretations of the Idea, there have been different but complimentary interpretation of the differential. Deleuze associates the Platonic Idea, or universal, with the interpretation of the derivative in Bordas-Demoulin, the "Plato of the calculus," and says that Wronski's interpretation of the calculus is "Kantian" (DR 170-71).

In 1810 before the Parisian Académie des Sciences, Wronski presented a "Supreme Law of Mathematics," or supreme algorithm, which he associated with a metaphysical "Law of Creation" (Kerslake 2009, 177, 179). Wronski's algorithm takes the form: $Fx = A_0 \Omega_0 + A_1 \Omega_0 + A_2 \Omega_2 + A_3 \Omega_3$, ..., where Ω_0 , Ω_1 , Ω_2 , etc., are any functions of the variable *x*. He claimed to the Académie that all modern mathematics is based on this "supreme law," a kind of infinite series, whose truth is not mathematically derived but discovered by transcendental philosophy—namely, Kant's (Boyer 1959, 261). The Académie acknowledged that the law applied to all known series expansions

(including Taylor series, which are the representations of functions as infinite sums of derivatives taken at a single point), but stopped short of granting it the generality Wronski claimed (Kerslake 2009, 179). What does it mean that the truth of Wronski's algorithm is discovered by transcendental philosophy? According to Wronski, Kant was right about the behaviour of what he called Reason, that is, our intellectual tendency to seek out more and more general conditions for what exists, and ultimately the "unconditioned" Ideas beyond possible experience (A322/B379). Yet Kant lacked (or rejected) the intellectual tools and methods of differential calculus (DR 170), and so he only imperfectly understood his own discovery. Wronski thought that conceptual tools like the reciprocal determination of dy/dx, which he called the "horizontal" determination of functions, and the "vertical" differentiation of power series (like Taylor series), make it possible for Reason to assume its proper form (Kerslake 2009, 175).

To say that Wronski presents a "Kantian interpretation of the calculus" (DR 170) means that he treats differentials as the objects of Ideas of reason, rather than concepts of the understanding. Joseph Louis Lagrange, to whom Wronski famously reacted, thought otherwise (DR 175, Boyer 1959, 261-2). Lagrange gave an entirely algebraic interpretation of the calculus, which would rid it of dubious intuitive notions and contradictory concepts like infinitesimals and replace them with algebraic indefinite variables. His method was influential and Boyer represents it as anticipating later arithmetical formulations of the concept of derivative in Bolzano, Cauchy and Weierstrass (Boyer 1959, 252, 272, 282). What is at stake here? If Lagrange's method were successful, then there would be no need for a metaphysical explanation of differentials and no need to acknowledge a difference in kind between differentials (along with problematic Ideas) and finite magnitudes (with the concepts of the understanding corresponding to them) (Somers-Hall 2013, 139). In a word, Lagrange attempts to "civilize" the barbarous aspects of the calculus. Wronski responds by vindicating them. Wronski criticized Lagrange's 1797 work Théorie des fonctions analytiques, arguing that Lagrange had not gotten rid of the need for differentials by replacing them with algebraic indefinite quantities. In fact, the indefinite cannot be understood without the infinitesimal. Lagrange's algebraic functions "assume a signification only by virtue of the differential functions which compose them" (DR 175). Deleuze refers directly to Wronski's response to Lagrange.

The major consequence of this criticism of Lagrange is that the difference between finite and infinitesimal magnitudes cannot be collapsed or reduced. Since, for Wronski, it is the difference between the generation of magnitudes and magnitudes already generated, it could only

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be reduced on pain of giving up any metaphysical account of the generation of quantity (which some mathematicians were quite happy to do). Wronski summarizes: "Finite quantities bear upon the objects of our knowledge, and infinitesimal quantities on the very generation of this knowledge; such that each of these two classes of knowledge must have laws proper [to them], and it is in the distinction between these laws that the major thesis of the metaphysics of infinitesimal calculus is to be found."²³

If the calculus is going to have a metaphysics, Wronski thinks, then it must begin with the insight that differentials are objects of Ideas. This is a "Kantian" interpretation of the calculus in that differentials are "problematic" or beyond possible experience. But, according to Wronski, it is essential to Ideas and reason understood this way that they are productive. Studying differentials, for Wronski, means studying the genesis of magnitude and the genesis of knowledge, rather than already constituted magnitudes or already conventional knowledge. We have already seen one way in which he thought Ideas can be productive or genetic, by means of the reciprocal determination of the derivative in the cancellation of particular values of x and y (the "Platonic" aspect of differential Ideas, according to Deleuze). Another sense in which the calculus represents the creative power of Ideas is in terms of infinite series (of which Wronski's algorithm is supposedly the archetype), for example Taylor series. Representing functions as sums of their derivatives (as in a Taylor series) enables you to approximate the primitive function by means of taking a finite number of successive derivatives. When graphed, this finite number of derivatives (or Taylor polynomial) approximates the primitive function within a certain range of values. The direct proportionality between the number of derivatives taken and the values of the primitive function is called the "convergence" of the power series. To Wronski's way of thinking, in this way the derivatives (or differential ratios) generate the primitive function. Deleuze refers, extremely obliquely, to the productivity of power series (Taylor series in particular) in his discussion of Wronski (DR 175), and a number of commentators have (correctly, I think) inferred the importance to Deleuze of Wronski's metaphysical interpretation of the summing of power series. For example, Bowden:

By reciprocal determination ... Deleuze means not only that dx and dy exist absolutely only in relation to each other at a point on a curve ... but also that the successive derivatives taken at this point are determinable only in relation to each other, and that the reciprocal relation or synthesis of these derivatives thereby characterizes a part of the curve or generates the primitive function. (2011, 105; compare Kerslake 2009, 188 n.44, Somers-

²³ Józef-Maria Hoëne Wronski, *Philosophie de l'infini: contenant des contre-refléxions sur la métaphysique du calcul infinitésimal* (1814), 35; quoted by Kerslake 2009, 180.

Hall 2013, 139-40, Duffy 2006a, 134)

Understood differentially, using the resources of the calculus, problems are Kantian in the sense that they are different in kind from solutions. In other words, problematic Ideas show that there is a difference in kind between finite and infinitesimal quantities (which Lagrange denied, but Wronski vindicated) which corresponds to Kant's distinction between understanding and reason. Yet the differential interpretation of problematic Ideas goes beyond Kant in that such Ideas are not just undetermined but determinable. This determination is specifically represented in the calculus by the differential ratio. Deleuze is critical of Kant's own construal of problematic Ideas as being merely undetermined, not a mechanism of determination, and hence not genetic. So, for Deleuze, Wronski's interpretation of the calculus is "Kantian" only up to a certain point. In fact, Deleuze's criticisms of Kant are derived, in part, from Wronski's. I turn to these criticisms in the next section.

Although Deleuze develops his conception of problematic Ideas primarily in terms derived from calculus, we should not conclude that calculus enjoys a special privilege beyond a certain heuristic usefulness. Deleuze thinks the history of the calculus is one domain where you can watch the problem in action, but problems are not *per se* geometrical. Problems are always "dialectical," and the different means by which problems are solved, their cases of solution, belong to various domains (DR 179). *A Thousand Plateaus* generalizes the scheme: problematic Ideas evince of the influence of minor or ambulant science on major science. Archimedean mechanics contains problems of this kind, and so does the barbaric calculus, its conceptual heir. Epicurean atomism also, I claim, involves the dialectical problem, as we shall see in more detail below. Deleuze thinks it anticipates the post-Kantian approach to problematic Ideas in Wronski (for example): the reciprocal determination of the differential relation in the Epicurean concept of the swerve, and the summation of a power series in the Epicurean concept of nature as an infinite sum. Perhaps the connection Deleuze wants to make here is facilitated by the ambiguity involved in the translation of "rapport." It's not clear there are ratios in Epicurean atomism, but there are relations, for example, between atoms and between minima (infinitesimals).

FROM EXTRINSICISM TO INTRINSICISM

Deleuze thinks that the above "intrinsic" account of problems as productive differential relations reciprocally determined stands in sharp relief with Kant's problematic Ideas, which are *merely* undetermined or indeterminable. Deleuze's criticism of Kant's Ideas corresponds with his complaint that Kant's account of experience is of merely "possible" and not "real" experience. That

is, experience, in Kant, that is subjected to categories of the understanding claims to stand for a totality without remainder (all or the whole of experience), as if everything experienced conformed to the categories of the understanding. In contrast, Deleuze thinks we must recognize a more direct, immediate experience of Ideas insofar as they are encountered as problems.

In the "Transcendental Dialectic" of the *Critique of Pure Reason*, Kant distinguishes what he calls "Ideas," from other kinds of concept. Kant's Ideas are "concepts of pure reason" (A310-11/B367), rather than concepts of the understanding. Of the latter there are two varieties: empirical concepts and *a priori* or "pure" concepts. An empirical concept is an actual act of conceptualization, or a concept applicable to particular sensible intuitions—for example, "that red apple." The concepts involved in such a judgment (red and apple) have only a limited applicability, Kant argues, since not everything we experience is red or an apple. *A priori* concepts, on the other hand, are what Kant has spent the first large division of the *Critique* (the Transcendental Analytic) explaining and justifying; they are concepts applicable to *all possible* experience. *A priori* concepts are constitutive of experience as such; you can't have any experience that hasn't already been structured by such concepts. In fact, Kant specifies that the range of application of such concepts, which Kant following Aristotle also calls "categories," are concepts like cause, necessity, existence, and unity (A80/ B106).

Ideas, on the other hand, are concepts that go "beyond the possibility of experience" (A320/B377), whose objects are not the sort of thing that can be given in any possible experience. These Ideas generally have the form of unconditioned totalities. For example, Kant singles out three: the Idea of the *Soul*, as the absolute unity of all the experiences of a thinking subject, the Idea of the *World*, as the totality of the series of appearances, and the Idea of *God*, the totality of conditions of objects thought. While the old dogmatic metaphysics tried to show how we have direct cognitive access to the objects of such Ideas, like the soul or God, Kant assigns to them the status of "transcendental illusions" (A295/B352). He claims that the very fact of our having these Ideas, as well as our belief in the, so to speak, direct cognitive access to their transcendent objects, is a natural and inevitable consequence of how our reason works. That's because the essence of the faculty of reason, for Kant, is to ascend to more and more universal explanations for what Kant calls "conditions" of empirical states of affairs. Reason thus discovers more and more general conditions for any given condition (e.g., this billiard ball struck the other and rebounded \rightarrow billiard balls conform to laws of motion described by Newton \rightarrow physical things in general conform to

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such laws, etc.). The limit of this expansion toward generality or universality is what Kant calls the "absolute" (A326/B382) or the "unconditioned" (A322/B379). Reason tends toward this limit.

What is Kant's rationale for introducing Ideas in the Transcendental Dialectic? And why does he bother with the corollary distinction between understanding (*Verstehen*) and reason (*Vernunft*)? Commentators have wondered whether the doctrine of the faculties stands up to scrutiny: is there a real distinction to be made between understanding and reason? Are there really two faculties at work, or is reason simply a "higher form" of understanding (Bennett 1974, 263)? Moreover, is Kant's distinction even a useful one, given that the paradigmatic objects of reason's Ideas are the metaphysical objects (Soul, World, God) of the old Leibnizian-Wolffian dogmatic metaphysics that Kant criticizes (Rohlf 2010)? Why should we worry about these Ideas at all?

One way of justifying Kant's introduction of Ideas in the Transcendental Dialectic is in terms of his distinction between the immanent and the transcendent use of concepts: "We will call the principles whose application stays wholly and completely within the limits of possible experience *immanent*, but those that would fly beyond those boundaries *transcendent* principles" (A295-6/B352). While the illegitimate transcendent application of most *a priori* concepts of the understanding (categories) can be checked by a judicious dose of criticism (A296/B352), the Ideas of Soul, World, and God are transcendental illusions resulting from the unchecked (and seemingly uncheckable) expansion of three categories: inherence (or substance), causality, and community, which Kant generically calls the categories of relation (A323/B379). The Idea of Soul is the illusion produced by the transcendent use of the category of inherence or substance (there must be a substance in which all experiences inhere); the Idea of World is the illusion produced by the transcendent use of the category of causality (the totality of all causes and effects); and the Idea of God is the illusion produced by the transcendent use of the category of community (reason wants to know the unconditioned condition of all conditions). While Kant generally argues for the purely immanent use of concepts, and against the immodest transcendent use (e.g., A246/B303), with respect to these three special cases (the Ideas) he thinks the transcendent use of the concept is a nearly unavoidable temptation.

So Kant thinks we should make the best of a bad situation. Although the transcendent illusions produced by the Ideas are inevitable, it is by no means inevitable that they should fool us into making dogmatic claims about the nature of the Soul, the World, and God, once we are critically aware of the way in which reason's insatiable quest for the absolute produces illusion (Grier 2001, 9-10). In fact, the inevitability of transcendental illusion has a silver lining. Ideas can

serve a normative or regulative function, providing guides or "focal points" (A 644/B 672) for the study of nature or for morality. In morality Kant even says that Ideas are "indispensible" (A 328/B 385). Using Ideas "regulatively" means employing them in a purely immanent way, that is, within the bounds of possible experience, instead of naively believing transcendent illusions and supposing that the objects of the Ideas exist and can be known (the illegitimate "constitutive" use of the Ideas). Part of this regulative use involves supposing a harmony or analogy between the supposed objects of the Ideas and possible experience. Using Ideas regulatively means we act "as if" the Ideas corresponded to actual beings, although we can never say if they really do (A684-6/B712-4).

Deleuze is ambivalent about Kant's doctrine of Ideas. He likes the way that Ideas remain problems without solution, and the way that the insistence of problems in experience is a function of the nature of reason itself and not an *ad hoc* or arbitrary inconvenience (A327-8/B383-5). But he doesn't like the way that Kant's Ideas (and by extension problems) are subordinated to the understanding and possible experience—experience that is governed and indeed defined as being organized by the categories of unity, existence, cause, etc. As Kant puts it:

Even if no object can be determined through [the Ideas], they can still, in a fundamental and unnoticed way, serve the understanding as a canon for its extended and self-consistent use, through which it cognizes no more objects than it would cognize through its concepts, yet in this cognition it will be guided better and further. (A329/B385)

This justification goes beyond the practical expedient of using Ideas immanently or regulatively (as Kant himself points out). According to Deleuze, Kant is saying that Ideas are meant to justify and to bolster the understanding's pretense to govern *all* experience. All experience is possible experience, subjected to the categories of the understanding. There is no experience that would be, for example, just a pure experience of reason. Given the finitude of the understanding, Kant thinks its ambition to stand for the condition of all possible experience can only be guaranteed by Ideas of *un*conditioned extensions, sums or totalities of all substance, all causality, all community, which come to its aid. As Deleuze puts it: "in order to find a middle term which makes possible the attribution of an *a priori* concept to *all* objects [of possible experience], reason can no longer look to another concept (even an *a priori* one) but must form *Ideas* which go beyond the possibility of experience" (K 19). Reason's Ideas are the reason possible experience is supposed to be a totality. Although Deleuze likes the Kantian doctrine according to which, within the mostly seamless fabric of our experience of the world, the very manner in which we think introduces us to problems whose solution isn't easily accomplished by conventional modes of thought, he doesn't like Kant's

claim that reason's ambition to think the absolute can be harnessed to explain how the understanding and possible experience stand for the *whole of experience*.

When Deleuze criticizes "Kantian extrinsicism," he criticizes this system in which Ideas are not only "transcendent" in the sense of going beyond possible experience, but in which the very going-beyond of Ideas is used to shore up the claim of the understanding and its categories to structure all experience. Deleuze recognizes that in Kant problems are not yet connected to a principle or concept of difference, but remain tied to a principle of identity—*any* and *every* possible experience, in Kant, must conform to the categories of unity, causality, existence, etc.; every experience is of *some one self-same thing* (DR 178). This is precisely what Deleuze challenges. In a nutshell, he adopts Kant's conception of the Ideas, not as a lamentably inevitable transcendent misapplication of the categories of relation, but as something that Kant has failed to reconcile with his own position that experience is not immanent enough because it leaves Ideas themselves transcendent. Rather than accept Kant's characterization of Ideas, Deleuze substitutes a conception of immanent Ideas, albeit on an explicitly Kantian basis. Thus Deleuze formalizes the three aspects of a Kantian Idea (DR 169):

(1) The object of an Idea lies beyond possible experience; it is therefore undetermined with respect to its object. As Kant says, an Idea is a "problem," different in kind from its solutions.

(2) The object of an Idea is nonetheless determinable. In Kant, its content is determined indirectly, or by analogy, with respect to objects of experience (this is the regulative application of the Idea; one acts "as if" the Ideas referred to existent objects, a regulative use that is "never harmful" and "always useful" [A687/B715]).

(3) The Idea bears the ideal of infinite determination. In Kant, this means that the ambition of Ideas to have the absolute and unconditioned as their object underwrites the application of the understanding to all possible experience ("serv[ing] the understanding as canon for its extended and self-consistent use").

Deleuze thinks that Kant's own use of problematic Ideas doesn't measure up to the way he himself has implicitly defined them. In Kant "two of the three moments [i.e. (2) and (3)] remain as *extrinsic* characteristics" of the Idea (DR 170, my emphasis).

The determinability of the problem (2) is an "extrinsic" characteristic of it, in Kant, because he does not permit the Idea to determine itself but requires it to be determined with respect

to objects of possible experience (specifically, by analogy with experience, and always in terms of its unified, self-same, existent objects). Similarly, the infinite determination of the Idea (3) is "extrinsic" because it is appropriated by the concepts of the understanding (e.g., unity and causality), becoming their ideal by extending and enhancing the field governed by possible experience. These criticisms are broadly in line with Wronski's critical views on Kant. Wronski thought Kant "had allowed the power of Reason to be obscured by procedures more appropriate to the Understanding" (Kerslake 2009, 175). As Wronski himself puts it: Kant "still considers knowledge *on the model of being [il considère toujours le savoir* à l'instar de l'être], in ascribing it conditions or forms which make us misrecognize its sublime character of spontaneity or *unconditionality*."²⁴ That is, Kant considers Ideas ultimately on the model of what is already generated ("beings"), rather than as giving an account of generation, like Wronski wants to provide.

Since Kant winds up evaluating Ideas in terms extrinsic to them, by subordinating Ideas to possible experience, Deleuze says that in Kant the content of Ideas is merely negative *in*determinate or *un*conditioned. What Deleuze calls "extrinsicism" describes the way that in Kant the behaviour of Ideas is subordinated to the needs of the understanding. Kant's allegiance is unwaveringly pledged to possible experience, which causes him to evaluate Ideas in terms of something alien to them, which he does by subordinating Ideas to possible experience, as its regulators. The problem with this extrinsic evaluation is that it forces Ideas to conform (at best indirectly) with the system of conventional identities encoded in the categories, and worse, that it denies Ideas the genetic power of determining themselves and their own application. Deleuze thinks Ideas, as problems, really do possess this power, and that other approaches to thinking about multiplicity, such as the reciprocal determination of differentials in the calculus, allow it to flourish.

So Deleuze says he wants to break with "possible experience," the condition in which the elements of a multiplicity are governed by principles of identity, and to describe the conditions of "real experience," liberated by a principle of difference (DR 68-9). If Kant failed to do this to the extent that he subordinated Ideas to the needs of the understanding (at least in the *Critique of Pure Reason*), another way of understanding Deleuze's anti-Kantian theory of Ideas is to say, not that we don't experience the objects of Ideas, but that we do experience them *qua* problems. *Real* experience contains Ideas, that is to say, problems. Crucially, however, for Deleuze experience

²⁴ L'oeuvre philosophique de Hoëne Wronski, 3 tomes, ed. François Warrain (Paris: Vega, 1933), vol. 1, p.
60. Deleuze refers explicitly to this work (DR 324 n.8)

contains problems not as actualities but as *virtualities*, which are nonetheless real, a distinction I shall explicate below.

Describing the conditions of real experience, Deleuze implies, means arriving at a kind of intrinsicism, where Ideas are not stretched on the Procrustean bed of the stipulated conformity of their contents with the contents of possible experience. When Deleuze complains about possible experience, and says his concern is with *real* experience, he is objecting to the way that Kant domesticates the wildest parts of his theory—problems—making his problems ancillary regulators of conventional experience, the ordinary habits of making the world intelligible which Kant thinks are inevitable. Of course, Kant thought possible experience was real experience too. What, from Deleuze's point of view, he overlooks is the direct experience of Ideas. I don't meant this in a dogmatic sense—Deleuze is not looking to vindicate pre-critical metaphysics—but in the sense in which our experience really is characterized by encounters with problems without conceivable solutions, which galvanize our thinking. These problems have the power to shape and alter our modes of thought; they don't simply provide the means for our current modes of thought to be indefinitely generalized.

To say that ideas are merely indeterminate is to try to define them without saying anything about their intrinsic character, only negatively in terms extrinsic to them. To give problematic Ideas a positive value and to do justice to their power, Deleuze says, one must think of them not simply as indeterminate but also simultaneously as determinable by some internal mechanism, and ultimately completely so determinable (DR 171). This is what "barbaric" interpretations of calculus do: the differential relation (dy/dx) describes just such an internal mechanism for the determination of the problematic Idea—what in this case Deleuze calls the "reciprocal determination" of a qualitative "pure relation." In fact, since calculus enjoys no special privilege among problematic ideas, all problematic (as opposed to theorematic) approaches to Ideas, be they mathematical, scientific or otherwise, treat Ideas as intrinsically determinable.

Kantian extrinsicism relies explicitly on the premise that Ideas are not just unconditioned but unconditioned unities or totalities (K 19; A326/B382 cf. A409/B435-6). Deleuze does not accept this premise. Rather, he characterizes Ideas in terms borrowed from nineteenth-century mathematician Bernhard Riemann:

Ideas are multiplicities. ... In this Riemannian usage of the word ... multiplicity must not designate a combination of the many and the one, but rather an organization that belongs to the many as such. (DR 182)

The "multiplicity" of an Idea means not only that the Idea embraces a numerical multitude of
elements, but more importantly, that the elements are not organized by an extrinsic plan or metric, and instead by some intrinsic means. Riemannian differential geometry models an anti-Kantian theory of problematic Ideas because it regards the contents of Ideas as subject to an intrinsic, internal organization without reference to extrinsic or transcendent terms which unify them. According to Robin Durie:

The main advance in [Riemann's] differential geometry consisted in the proposal that a surface can be conceived as a space in itself, rather than being embedded within a higherdimensional space ... the geometry of a surface conceived as a space in itself will be 'intrinsic' to the surface. (Durie 2006, 177)

The conceptual innovation of a Riemannian "*Mannigfaltigkeit*" (multiplicity or manifold) lies in generalizing the notion of an intrinsically organized differential system, characterizing any *n*-dimensional space as a "multiplicity of *n*-dimensions" (Durie 2006, 177). Deleuze introduces Riemann's vocabulary in order to join his immanent conception of the problematic Idea to an "appropriate mathematical expression … one which requires no supplementary dimension" (Bowden 2011, 114-15; compare Plotinsky 2006). In doing so, he is simply making explicit what had been implicit in the concept of a problematic idea: it must be internally organized, not compelled into conformity with an external set of expectations or an extrinsic supplementary dimension.

I think the comparison with Riemann's self-governing multiplicities suggests that we can think of Deleuze's anti-Kantian theory of Ideas in the following way. To the extent that Ideas are problems, different in kind from solutions and presenting a productive challenge for thought, they possess a kind of intrinsic power in their very difference from solutions. This power, however, has been suppressed. Kant, for instance, did not allow his problematic Ideas to determine their own natures, meaning that he interpreted problems only as the unchecked application of the categories of the understanding. Although Ideas are "beyond the possibility of experience" they are put to work by possible experience as the "canons for its extended use." Deleuze thinks of this gesture as a means of preemptively inhibiting what problems could potentially mean to us, show us, or force us to think. If I can use a kind of political rhetoric, Deleuze thinks problematic Ideas have a right to self-determination, so to speak, that a philosophy of difference should strive to respect and cultivate. Ideas determine themselves when they are not forced into conformity with a set of extrinsic requirements (usually requiring the unification or totalizing of the Idea's elements).

At any rate, Deleuze thinks, problematic Ideas just will determine themselves intrinsically in the absence of any unifying constraint. There's plenty of evidence. Such intrinsic determination asserts itself whenever scientific epistemology switches into the problematic mode. The barbaric calculus uses the differential relation to articulate the way in which functions determine themselves qualitatively, independently of an external, quantitative metric. In Riemann's differential geometry the imposition of supposedly independent external metrics (in, for instance, Euclidean geometry) is a special case of a more general topology of spatial multiplicities measuring out their own values. When Deleuze says that Epicurean atomism is also a problematic idea, he means, I think, that the same sort of assertion of the Idea's right to self-determination occurs in the context of Epicurus.

It may be thought that this interpretation of Epicurus is wrong, or at least selfcontradictory, since Deleuze also says that "it is a mistake to tie the value of the symbol dx to the existence of infinitesimals" (DR 170-71), but that's just what the link between the Epicureans and the metaphysicians of the calculus seems to do. Perhaps the Epicureans have something like the idea of the differential, but they interpret it vaguely as an infinitesimal, and so don't advance to a rigorous understanding of the productive power of the problem's self-determination like you find in the differential relation (dy/dx). Yet it is certainly Deleuze's view that the Epicureans are on to something similar. Deleuze's objection to the "infinitesimal" or the infinitely small stems from the way that infinitesimals were historically bound up in the unproductive controversy over "whether infinitesimals are real or fictive" (DR 176; compare TP 363). The principle of a differential philosophy, Deleuze thinks, does not hinge on this question. If it were worth answering, one way of doing so would be to adopt a quasi-Stoic strategy of saying that infinitesimals are non-beings that exist "in a sense." Without recourse to parametrizing being, though, the question "do infinitesimals exist?" is like a modern version of Zeno's paradox of measure, designed to give differential notions a purely dispensable or placeholder interpretation: if infinitesimals are real, then absurdities follow and they should be got rid of; if they are fictional, then they should be replaced with a more discrete conceptualization. According to Deleuze, Epicurus is not primarily interested in this existential, or ontological question. Whether or not infinitesimals exist is not as important for Epicurus as the question of how, by what mechanism, they are related. In this relation between infinitesimals in Epicureanism, Deleuze thinks, you have something like a "pure relation" presiding over the generation of magnitude. What is this relation? Deleuze finds it in the doctrine of the swerve ("parengklisis" in Greek, "clinamen" in Lucretius' Latin). He identifies the swerve as the Epicurean equivalent of the mechanism of determination embodied in the calculus by the differential relation (DR 184).

When Epicurus claims that limits are not true limit-entities but indivisible, infinitesimal

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minima, he presents a physical thesis that looks like a non-starter from the perspective of conventional Greek geometry, but which is perversely useful. Insofar as the idea of minima is officially rejected but subterraneanly inspiring or productive Epicurean physics is problematic in Deleuze and Guattari's sense. Epicurean minimism was rejected out of hand (the Epicureans were called ignorant of geometry), and perhaps the Epicureans were genuinely hostile to geometry for anti-Aristotelian reasons. Nevertheless, it is possible that the working out and formalizing of the problematic idea of a self-consistent minimism from an intrinsic rather than extrinsic point of view occupied scientifically-minded Epicureans. Sedley notes that although Epicurus' physics was downplayed in the Greek-speaking context in the last couple of centuries BCE in favour of his ethical doctrines, in the Latin-speaking world a "native Italian Epicurean movement" which had not completely lost sight of physics nor the implications of Epicurean physics for mathematics existed alongside Greek-speaking Epicureans like Philodemus (Sedley 2009, 36, 39-40).²⁵ The evidence for such a formalization of problematics remains slim, however, unless we take into account the atomic swerve. Deleuze thinks this doctrine more clearly evinces the Epicurean attempt to articulate the intrinsic determination of the problematic Idea independently of external constraints.

PROBLEMS AND EVENTS

Before I defend this identification of the swerve with the immanent determination of the problematic Idea, I will say something briefly about the relation between what Deleuze calls "problems" and what he calls "events," in order to set the stage for the what I take to be his fully worked out reading of Epicurus.

In a preliminary discussion of problems, Deleuze refers to Plato: "Plato defined the dialectic as proceeding by 'problems'" (DR 63). Problems thus play an "essential role" in the Platonic dialectic, similar to, but distinct from, the role that the negative and contradiction play in the Hegelian dialectic (DR 63).²⁶ That is, problems are like the "motor" of thinking in Plato, just as the negative or contradiction is the motor of thinking in Hegel. The *Sophist*, for example, is in

²⁵ Sedley mentions Amafinius, Rabirius and Catius Insuber (2009, 39), all of whom Cicero denounces on partly geometrical grounds (*Acad.* 1.5-6), and speculates that Latin Epicureanism may have influenced Lucretius also (41). If this is the case, it strengthens Michel Serres's geometrical reading of DRN 2. 219-20 ("*Paulum, tantum quod momen mutatum dicere possis*") and 2. 244 ("*nec plus quam minimum*") as descriptions of infinitesimal minimal intervals of movement (1977, 4).

²⁶ For Deleuze's interpretation of Hegel's negative dialectic, see DR 48-50. For commentary, Baugh 1992, Smith 2000, and Widder 2003.

general about distinguishing philosophy from its unscrupulous doubles (such as sophistrty), but the motivating problem in that dialogue is how to speak truly about false speech (or a false speaker). In Chapter 2 I said that Deleuze admires Plato's procedure in the *Sophist* because the progress thought makes there in its conceptual divisions is wild and unregulated. Plato's definitions are "unmiddled," in other words not subjected to the requirements of (Aristotelian) specific difference. The differentiations that Plato's interlocutors produce as solutions to their problem are not criticized for failing to conform with some predifferentiated representations (like the identities of genera). Deleuze continues in a way that helps to clarify the relationship between problems and events:

It is precisely *not* the negative which plays this role [of motor] in Plato—so much so that we must consider whether or not the celebrated thesis of the *Sophist*, despite certain ambiguities, should be understood as follows: 'non' in the expression 'non-being' expresses *something other than the negative*. (DR 63)

Deleuze is, of course, referring to the "celebrated thesis" later adopted by the Stoics that *non-being in a sense is.* As we have seen in the last two chapters, for Deleuze the "sense" in which non-being "is" is as difference, an original, primitive difference that is not subordinated to identity (as it is in Aristotle). The paradoxical quality of this thesis (as I discussed in my first chapter on Stoicism), makes it problematic, or, as Deleuze puts it, relates being and the problem:

More profoundly still, Being (what Plato calls the Idea) 'corresponds' to the essence of the problem or the question as such. It is as though there were an 'opening', a 'gap', an ontological 'fold' which relates being and the question to one another. In this relation, being is difference itself. Being is also non-being, *but non-being is not the being of the negative*; rather it is the being of the problematic. ... For this reason non-being should rather be written (non)-being or, better still, ?-being. ... Beyond contradiction, difference and beyond *non*-being, (non)-being; beyond the negative, problems. (DR 64)

Deleuze is obviously being pretty playful, but he is making a general point about the discovery of non-being which is in a sense as difference that illuminates much of his oeuvre. *The Logic of Sense* argues that the Stoics were inspired by the *Sophist* to identify "non-being that in a sense is" with the subsistence of incorporeal events. The passage quoted here from *Difference and Repetition* suggests that problems have the same kind of non-being ("?-being") as events: the "being of the problematic" is "non-being-that-is-in-a-sense as difference." That's plausible because Deleuze treats events, like problems, as "all positive." Moreover, Deleuze also says that "the mode of the event is the problematic" and that "the event by itself is problematic and problematizing" (LS 54). It is not too reductive to relate the two books in the following way: *Difference and Repetition* is about problems and the ways they determine themselves independently of theorems, i.e., non-

negatively, while *The Logic of Sense* is about events and their "silent relations of compatibility and incompatibility," distinct from conceptual or propositional contradiction (LS 170).

Still the relation between "event" and "problem" remains to be made precise. Although the event is called problematic, and both events and problems are seemingly identified with non-beingthat-is-in-a-sense, they are not identical to one another: "One must not say that there are problematic events" (LS 54). Deleuze expresses the connection between events and problems in a couple of ways. He suggests that problems "proceed from" or "emanate from" events, which they express (DR 197), and also that events "define the conditions" of problems (LS 54). An event isn't *itself* a problem, but contributes to the manner in which the conditions of a given problem are defined. I think the best way to understand these formulations is as expressing the view that events are the (transcendental) conditions of problems, and that's the sense in which problems "emanate" from them. If (according to the Stoic stemma) events are ontologically distinct from determinate physical relations among bodies, then I think Deleuze's position is that what makes problems *self*determining is the fact that events are their transcendental conditions. If the conditions of problems were just actually existing conditions (relations among beings, in the Stoic picture), problems would not be intrinsically but extrinsically determined. They would not possess the quality of "truth" or productivity Deleuze is interested in, since they would just resemble actually existing conditions, and "produce" only resemblances rather than genuine novelty.

Deleuze's position that events are the transcendental conditions of problems differs from the old notion that multiplicities are unified by a transcendent One. The fact that an event is, for Deleuze, a transcendental condition of a problem does not mean that the event operates as a unifier, guaranteeing the identity of what occurs. We can see how through a contrast with Kant again. In the Transcendental Analytic, the categories (substance, causality, and so on) are identified as the conditions of possible experience and Kant offers a transcendental argument to justify the necessity of categories like substance and unity (A 94/B 126). Anything that can be experienced conforms to these categories since they supposedly determine the *a priori* conditions of experience. Deleuze argues that in the Transcendental Dialectic Kant likewise makes "Ideas" another kind of transcendental condition for possible experience (since Ideas work to bolster possible experience's exclusive ambition to stand for all experience or experience full stop), although this interpretation of Kant is novel and not universally accepted.²⁷ To Kant's transcendental idealism, and its

²⁷ See Walker (2006) for a more deflationary interpretation according to which Kant's transcendental arguments about the Ideas, unlike the arguments about the categories, "do[] not seek to show that the world actually contains" what the arguments prove, just "that we are justified in proceeding as if" they did (247).

allegiance to possible experience governed by categories, Deleuze prefers a "superior" or "transcendental empiricism" (DR 57-8, 143). Deleuze calls it "empiricism" since its allegiance is to experience, what he calls "real experience" in contrast to possible experience (but which I will just call "experience," since I believe it is meant to be an acceptable starting-point for a kind of transcendental argument). Deleuze thinks that, far from being conditions of unity and existence (categories) and conditions of totality (Ideas), the transcendental conditions of experience (which is characterized by encounters with problems) are events, which make experience genuinely unpredictable. Events guarantee that multiplicities are not organized by a transcendental unity to the extent that events are ontologically distinct from states of affairs. Deleuze's big wager is that if there is a difference between what you might call the "ontological status" of a condition and of what it conditions (such as a difference between being and non-being-that-is-in-a-sense), then this conditioning will not be sterile but productive. Such an account of transcendental conditions will make it possible for us to understand that problems are self-determining or that determination in general is accomplished by difference. Deleuze picks out these ontological differences in a variety of ways-non-being-that-is-in-a-sense, event, "being of the problematic"-but he expresses the thought most famously and consistently in terms of the contrast between "actual" and "virtual" reality, which I discuss below.

For now, a few words about Deleuze's argumentation. Despite the fact that Kant used transcendental arguments to reinforce the primacy of possible experience, this style of argument remains important for Deleuze. I singled out one of his transcendental arguments in my first chapter on Stoicism: sense, which is also called "event" to the extent that it borrows the unpredictable, inexplicable character of paradox or nonsense, is a necessary condition for both denotation and signification (LS 19, 95). Deleuze's arguments that events are the necessary conditions of problems and that events are the necessary conditions of real (as opposed to possible) experience (LS 54) are the cousins of that argument.²⁸ The most famous and possibly most important of Deleuze's transcendental arguments, however, memorably runs as follows: "Difference is not diversity. Diversity is given, but difference is that by which the given is given as diverse" (DR 222). This crucial passage specifies the starting point of Deleuze's transcendental-empirical argument. He starts with experience (real, of course),

²⁸ Deleuze's transcendental arguments are many. Compare Chase and Reynolds (2010), who discuss Deleuze's transcendental arguments about time (DR 70-91): the experience of repetition implies more than just bare repetition of the same, because "the unknown future serves as a condition for explaining genetic change/difference" (2010, 44).

and calls it *given*. In my view, Deleuze, like Epicurus (*Ep. Hdt.* 40), begins with the sensible givenness of change, and takes it as the minor premise of his transcendental argument. On this basis, we can construct a generalized Deleuzian transcendental argument:

1. The experience of difference (diversity) requires real difference in itself (or, in other words, the experience of problems requires the occurrence of events that are not reducible to identifiable states of affairs).

2. There is the experience of diversity. (Or, there are problems that we encounter.)

3. Therefore, difference in itself must be real. (Or, events must actually occur, and their para-ontological status, as "non-being that is in a sense," which Deleuze also calls "virtuality," must be a species of reality).

It may seem advisable to strive for clarity and ask the simple question, what is an event? However, Deleuze says that events are "pure becomings" rather than beings (LS 1-2), so the question of what an event *is* is off to a rocky start. An event *is* nothing, to the extent that whatever *is* has to be a being possessed by definition of unity and self-identity. This is why Deleuze identifies events with non-being that *is* only "in a sense," and in *The Logic of Sense*, traces this characterization of events through Parmenides, Plato and the Stoics.

Since events are becomings, it is possible to construe Deleuzian events in Nicholas Rescher's terms, as "processes." Rescher contrasts "processes," movements, changes, "items better indicated by verbs than nouns" (1996, 29), with "substances," defined as anything whose basic identity endures accidental changes (30). Rescher usefully distinguishes between two types of process, "owned" and "unowned" (42). Owned processes occur relative to a substance, and can be said to "belong to" that substance. For example, I decide to stand up and go for a walk. The word "owned" has to do with the way we attribute processes (e.g., walking) to substances (e.g., me). Going for a walk was something that a substance undertook, which failed to alter it to such an extent that it underwent a substantial change. "Unowned" processes, on the contrary, belong to no substance. They are ambient, impersonal, and consequently more thoroughly processual. Nothing survives unowned processes in the way that a substance survives an owned process. Deleuze's "events" are these unowned, pure processes (pure becoming or pure difference as determination).

The term "event" is also meant to imply the self-determination of becoming. Nobody makes an event occur (it is not an *act* relative to an *actor*). Deleuze's generalized transcendental argument can thus be reframed: owned processes are given, but unowned process is the necessary condition of this given. Calling an event "transcendental," in the context of Deleuze, doesn't imply

that it unifies a multiplicity (e.g., of beings or states of affairs), but indicates instead that the diversity of unified beings (substances and owned processes) depends on the occurrence of events that are not given as unified in the same way. Such events or processes are not made to occur by some owner, or more generally speaking, they are not determined relative to something else. Such events are not done by something, but *do themselves*, so to speak.

The auto-determination of problems (the fact that they are not indeterminate but determined by events) is, as I have said, what chiefly distinguishes a problematic Idea from a "representation," a distinction that Deleuze recognizes as the "true opposition" at the heart of his theory (DR 191). Introducing terminology that will be important later, Deleuze claims that while problematic ideas can be intrinsically or immanently determined to the extent they are conditioned by events, representation largely deals with "possibilities" (DR 191). What Deleuze means by "possibility" here is style of thinking in metaphysics that does not recognize the importance of the difference in "ontological status" that Deleuze emphasizes. The thought is that if a possibility is treated as a transcendental condition of a reality then the merely modal distinction between condition and conditioned is not sufficient to make this conditioning productive in the way Deleuze wants because "possibilities" are molded on, that is, already have the form of or resemble, the real things they anticipate. Since these real things already possess existence and unity, so much the worse for such possibilities. According to Deleuze, Kant thinks in this style. Kant's transcendental conditions (Ideas) are already too similar to what they condition (possible experience). That's why it's so easy to put them to work regulatively. It's appropriate, then, that the totality of experience governed by the categories of the understanding is called "possible" experience. The representation of such "possibilities" is unfortunate, as it blocks the productive potential of Ideas that interests Deleuze. In contrast, Deleuze's problematic idea "makes a virtue of quite different characteristics." Deleuze says that problematic Ideas are "virtual," and the "virtuality of the Idea has nothing to do with possibility" (DR 191). Whatever "virtual" means (I will return to it below), I think it's clear that the problem is said to be virtual to the extent that it sloughs off the extrinsic metric that would condition it (or determine it negatively as unconditioned) in favor of an intrinsic means of conditioning.

So "extrinsicism" relies on the "possibility" of conditions in relation to what's conditioned, while "intrinsicism" makes conditions "virtual." Can we make this more precise? Deleuze thinks we are certainly capable of formalizing intrinsicism. He often refers to a passage in Husserl's *Ideas* that portrays "descriptive natural science" as studying the "essentially and not accidentally

inexact," whose objects of study are "vague" not because they are poorly understood but because it is their nature to be vague.²⁹ Deleuze and Guattari criticize Husserl for relegating such a discipline to the status of an insufficiently pure science (TP 367), and argue that there is no reason why the study of the "anexact," whose vagueness is a positive rather than negative feature, cannot still be rigorous. In fact, the study of the "anexact yet rigorous" is a refrain in Deleuze and Guattari (TP 367, 407, 483; WP 143; N 29). They adopt this reference from Michel Serres's book on *De Rerum Natura* (TP 555 n.32), which argues that Greek geometers, from Democritus to Archimedes, frequently reasoned about the "anexact yet rigorous" in a style that influenced Latin Epicureans like Lucretius (Serres 1977, 19).³⁰ Deleuze thinks not only that an intrinsicism, or a theory of "problematics" where problems determine themselves immanently, *can* be formalized, but that in fact philosophical attempts to formalize problematics have already occurred, for our purposes at least twice: among the Stoics and Epicureans. Deleuze's late work, I will argue below, is another such formalization.

WHAT'S FASTER THAN ATOMIC SPEED?

Right before Deleuze identifies the swerve as the Epicurean equivalent of the differential relation, he says that Epicurean atomism is an attempt to formalize problematics, or what I have called intrinsicism, because Epicurus explicitly conceived of ideas as multiplicities, in this case, "multiplicities of atoms, atoms being the objective elements of thought" (DR 184). This is simply the observation that for Epicurus thoughts or ideas are identified with compounds of atoms. Deleuze's subsequent reference to "sensible compounds" (DR 184) indicates that he is relying on Epicurus' theory of "images" or *eidôla (simulacra* in Lucretius), so his claims about Epicurean multiplicities and the role of the swerve cannot be properly understood without the interpretation of Epicurean *eidôla* that he assumes but does not provide.

Epicurus contends that there is a kind of continuity between perception and conception. Having established that atoms are the principles of all things, Epicurus describes the constancy of atomic movement. Atoms are always moving (*Ep. Hdt.* 46), and they must all move at a constant speed (*Ep. Hdt.* 61), since the void can't vary the speed of atoms by offering any differential

²⁹ Husserl 1983, §74 (pp. 138-9, in translation 166-7).

³⁰ David Sedley likewise speculates that physically orthodox Epicureans may have continued to practice geometry, in the absence of the exact mathematical rigor associated with limit-entities and the Aristotelian inexhaustibility of magnitude, as an "inexact but serviceable discipline" (1976, 26).

resistance whatsoever.³¹ Epicurus also claims that any attempt to describe the edges or boundaries of compounds, far from being able to fall back on relatively permanent mathematical limit-entities, must account for the outlines of compounds which are *not* zero-dimensional nor even minima (since minima lack *per se* existence) but atomic, just "much finer than the objects of which they are the outlines."³² The constituent atoms of these outlines, like all atoms, must be constantly moving and have a certain speed. Epicurus describes them as *tupoi* ("types," sometimes translatable as "stamps" or "impressions") having the same *skhêma* (shape or form) as the original compounds. A couple of lines later, Epicurus calls such homoschematic types *eidôla*, or "images" (*Ep. Hdt.* 46).

The conventional way of conceiving of *eidôla* is as films of very fine atoms that maintain for a relatively long time (*Ep. Hdt.* 48) the schematic outline of whatever compound they were the edge of. Epicurus' appears to be thinking thus: while in bodily compounds atoms bang into one another and are prevented from attaining the greatest speed they are capable of, at the edges of bodies the jumble of resisting atoms suddenly gives way and the component atoms of the *eidôla* attain their maximal natural speed; "since their movement through the void occurs with no conflict from [atoms which] could resist them, it can cover any comprehensively graspable distance in an inconceivably [short] time" (*Ep. Hdt.* 46).³³ Thus the persevering flow (*rheusis sunekhês*) of *eidôla*-films moves extremely quickly, as Epicurus puts it "as fast as thought [*hama noêmati*]" (*Ep. Hdt.* 48). Deleuze quotes this description of the movement of *eidôla* ("fast as thought") to support his contention that atoms are "elements of thought," or that Epicurean ideas are "multiplicities of atoms" (DR 184). He would be citing opportunistically if Epicurus were simply comparing the speed of *eidôla* to something that also seems to occur incredibly quickly (at least sometimes), namely, having an idea. In this vein, Lucretius compares the speed of images to the speed of light (DRN 4.185, 206-8). But Deleuze's comparison is not incidental: the identification of *eidôla* with

³¹ Of course, Epicurus admits that atoms do slow down as a function of their being offered resistance by other atoms. The speed of compounds of atoms can vary, due to the internal non-uniformity of atoms' movement, which includes contrary motions, vibrations, etc., that slow the motion of the whole compound (*Ep. Hdt.* 62; compare Lucretius, DRN 2.152-66).

³² *Ep. Hdt.* 46. The Greek is " λ επτότησιν ἀπέχοντες μακρὰν τῶν φαινομένων," which could be translated 'much finer than what we perceive', but that expression is ambiguous in a decisive way, as we shall see.

³³ Lucretius, disanalogously, attributes the speed of images to their unsurpassed fineness (DRN 4.196-8), so even when the images are not moving through a perfect vacuum, they can still travel extremely fast, and "as it were pass through [*quasi permanare*]" intervening compounds, like neutrinos. Epicurus' and Lucretius' accounts of the movement of *eidôla* can be reconciled, since of course the *eidôla* that we perceive on earth don't move through a vacuum but through air made up of atmospheric atoms. The thought must be that, since the constituent air and *eidôla* are both very fine compounds of fine atoms, much finer than most other bodies, the resistance they offer one another is practically nil, or maybe infinitesimal, so that the effects of this resistance are only evident at a very great distance. Compare Sextus Empiricus (*M*. 7.206-9), quoted below.

thought (or Deleuze's "ideas," terminology alien to Epicurus) is an essential part of Epicurean epistemology. Epicurus claims that both perceiving and thinking occur by means of the action of *eidôla* upon percipient beings: "it is when something from the external objects [i.e. an image] enters into us that we *see and think about* [*horan kai dianoeisthai*] their shapes" (*Ep. Hdt.* 49, my emphasis). There is a continuity between perception and conception in Epicurus to the extent that both are derived from the action of *eidôla*.

The notion that conception and perception are both effects of *eidôla* is another widely derided Epicurean doctrine. It is often condensed into the lapidary formula "all perceptions are true," a proposition that induces Cicero, for example, to call Epicurus a "gullible man" (*Acad.* 2.82). Nevertheless, the doctrine that all perceptions are true is apparently crucial for Epicurus, since without it he thinks there can be no productive reasoning, just an unintelligible morass of opinions and perceptual judgments.³⁴ Stephen Everson's (1990) sympathetic reading emphasizes the dependence of the doctrine on the distinctive qualities of *eidôla*. "All perceptions are true" means that perceptions just are (or are reducible to) the action of *eidôla* on our senses. Perceived in the proper way, and prolonged into thoughts or ideas, all *eidôla* are "true," even when (as sometimes happens) an *eidôlon*'s homoschematic relationship to its original is "distorted" (*Ep. Hdt.* 48). In fact, the occasional distortion of *eidôla* explains why we occasionally think and dream about non-existent creatures like Centaurs (DRN 4.722-76). Sextus Empiricus, paraphrasing an Epicurean, confirms this interpretation:

I would not say that the vision is deceived just because from a great distance it sees the tower as small and round but from near to it as larger and square. Rather I would say it is telling the truth. Because when the sense-object appears to it small and of that shape it really is small and of that shape, the edges of the *eidôla* getting eroded as a result of their travel through the air. (S.E. *M*. 7. 206-9)

The Epicurean truth of a perception or conception is reducible to its being the action of *eidôla* of a certain kind. *Eidôla* may no longer entirely do justice to their original, but there is no deception in the way they act upon us.

Epicurus is reported to have claimed not just that each sense has its own proper object, a certain kind of atom, say, but also that different senses cannot refute one another "because they are not discriminatory of the same things" (D.L. 10.32; compare DRN 4.486-9). Auditory hallucinations, for instance, are not caused by pungent atoms, and so on. Epicureanism wants to

³⁴ Cicero attributes this view to Epicurus twice (*Acad.* 2.101; *Nat. deo.* 1.70). Compare Lucretius: "our conception of truth is derived ultimately from the senses and ... their evidence is unimpugnable" (DRN 4.478-9), and "unless [the senses] are true, all reason will also be false" (4.485).

explain why it is that different senses do not refute or even conflict with one another by accounting for sensation as the action of *eidôla*. This sort of a basis for the truth of perceptions is only a "disappointing result," Everson points out, from the point of view of "post-Pyrrhonian" expectations (1990, 179-81). "Post-Pyrrhonian" here refers to a Hellenistic intellectual climate influenced by ancient skepticism, and characterized by the deeply un-Epicurean assumption that senses conflict. Such conflict was taken as given by almost all subsequent Hellenistic epistemologies, leading them to speak about perception in quite a different way, in terms of how, in light of perceptual conflict, we can say anything true (that is, perception-independent) about objects perceived.

When Deleuze says that ideas are problematic in Epicurus, he taps into this rich vein: Epicurus' association of perception and *eidôla* is not only provocative in the ancient context, but also widely misunderstood. *Eidôla*-ideas are problematic, for Epicurus, in part because they ground claims about what actually exists without the kind of specifically Epicurean truth they convey being identifiable with such claims. Herein lies the significance of the Epicurean distinction between perception/conception on the one hand, and opinion on the other. While perceptions and ideas are always "true" or epistemologically primary, claims about what's really out there, the sources of the potentially distorted images, can be false. In fact, *only* such claims can be false: "Falsehood [*pseudos*] or going-astray [*diêmartêmenon*] always comes from an added opinion [*en tô prosdoxazomenô*]" (*Ep. Hdt.* 50).³⁵

For Epicurus, "added opinions" have a strictly negative sense. At best they report while adding nothing to perception, at worst they introduce falsity into the perceptual-ideational loop. Yet in a remarkable reversal of philosophical discourse, what Epicurus calls truth comes to have a negative meaning already by the time of Cicero, in the sense that the subsequent Hellenistic tradition generally wants to be able to say something true about the world independent of perception, and refuses to connect the truth-conditions of propositions to the activity of mysterious *eidôla*. For the subsequent tradition, the doctrine of *eidôla* tells us nothing about the truth we are

³⁵ Compare S.E. *M.* 7.209: "it is left to distorted opinion to suppose that the object of perception seen from near and the one seen from far off are one and the same." That is, an opinion about the enduring identity of, say, a tower one perceives from a distance and then up close, would be *strictly speaking false*, since what one *sees* is not the tower itself but the tower-schematic *eidôlon*. Nevertheless, despite the fact that one directly perceives *eidôla*, one is not directly aware of them (DRN 4.256-8). Something like this distinction between perception and awareness may be implied by Epicurus' use of the term "*ta phainomena*" to denote the compounds of which *eidôla* are outlines—the phenomena are the things we are *aware of perceiving*.

now interested in, and just looks like a physical postulate.³⁶ Everson reminds us that the sort of epistemological claims which Epicurus relegated to opinion (claims about enduring objects in an objective, intersubjective world) eventually became the primary interest of mainstream epistemology. What Epicurus called the objects of opinion became the definienda of the post-Pyrrhonian conception of truth. In other words, after Epicurus (and perhaps as a consequence of Stoic propositional logic), the primary bearer of truth-value became a *doxa*, what modern thought identifies as a belief, opinion, proposition, representation or judgment. For Epicurus, on the contrary, the *eidôlon* is the primary truth-value bearer, and such a thing cannot be false, although it is susceptible to incorrect beliefs, opinions or judgments by hasty non-Epicureans.

This is why the characterization of ideas as multiplicities of atoms alone is not enough for Deleuze. He derives it from the Epicurean doctrine of *eidôla*, and this doctrine already has a negative status in the epistemological tradition (meaning not only that it tends to be scoffed at but that it tells us nothing about what distinguishes true from false). To say that ideas are multiplicities of atoms cannot help but sound like a negative claim about the indeterminacy of ideas from the point of view of what Epicurus called opinion, but what Cicero thinks of as knowledge. Since Epicurean and post-Pyrrhonian conceptions of the relation between truth and opinion are talking past one another, understanding one conception (the Epicurean) from the point of view of the other (post-Pyrrhonian) requires evaluating the former according to the extrinsic requirements of the latter. And that's an unhappy result.

Happily, however, Deleuze thinks the Epicurean theory has more at its disposal. Epicurus does not just recognize that some multiplicities of atoms are *eidôla*, the Epicurean equivalents of problematic ideas, the supposed truth-value of which is hard to assess (indeterminate) from the point of view of an extrinsic, post-Pyrrhonian framework. Epicurus also claims that his problematic ideas possess an immanent mechanism of self-determination, which Deleuze considers similar to the "reciprocal determination" of the derivative in the calculus. Since Epicurean Ideas are multiplicities of atoms, the problematicity of Epicurean Ideas depends on the existence of a theory of immanent atomic self-determination. Deleuze argues that the Epicurean swerve plays precisely this role:

It is indeed essential that atoms be related to other atoms at the heart of structures that are

³⁶ Everson contrasts his reading of Epicurus' doctrine with others that are, in his view, permeated by post-Pyrrhonian expectations. For instance, Long (1971c) and Striker (1977) both attempt to save Epicurus' otherwise desperate position by claiming that Epicurus means that "all perceptions are *real*" rather than "all perceptions are true," since he must understand that perceptions are not the right sort of thing to bear a truthvalue (only propositions, judgments, *doxai* are), unless he makes a serious philosophical error.

actualized in sensible composites. In this regard, the *clinamen* is by no means a change of direction in the movement of an atom, *much less an indetermination* testifying to the existence of a physical freedom. It is the *original determination* of the direction of movement, the synthesis of movement and its direction which relates one atom to another. (DR 184, my emphases)

No text attributed to Epicurus referring to the swerve survives, but reliable reports imply there was such a text.³⁷ Although both Diogenes of Oinoanda and Cicero suggest that Epicurus introduced the swerve to avoid the necessitarian implications of Democritus' atomism, Deleuze does not discuss the swerve in the context of a reconstruction of ancient Greek theories of fate. This is one way in which his readings of the Stoics and the Epicureans diverge. In fact, Deleuze thinks that the essential thing about the swerve is not the *indeterminacy* it introduces into the Epicurean universe, either as a discovery of free will or as the justification of the irreducibility of mental with respect to physical states, but rather the intrinsic *determination* it introduces into the relation between atoms.³⁸ Since ideas are multiplicities of atoms, the intrinsic determination of atomic compounds should provide a theory of the immanent operation of problematic ideas—the treasure hidden in Epicurean atomism.

In Lucretius, there are two principal arguments for the swerve, one cosmological (DRN 2. 216-24) and one libertarian (2. 251-93). Deleuze's appropriation of the swerve depends on the first one:

When these bodies [atoms] are being drawn downwards by their own weight straight through the void, at totally uncertain times and in uncertain places [*incerto tempore* ... *incertisque locis*] they turn aside [*depellere*] a little in space, just so much that you could call their motion changed [*tantum quod momen mutatum dicere possis*]. Because if they were not accustomed to swerve [*declinare*], everything would fall downwards through the deep void, like drops of rain, no collisions would occur and no blows be effected among the atoms: nature would not have created anything. (DRN 2.217-24, my translation)

If this argument is taken, as it is sometimes, to show the necessity of a first creative swerve at the origin of the universe then it is actually at odds with what both Epicurus and Lucretius say elsewhere: the universe is temporally infinite, has no beginning and that its motion is perpetual (*Ep. Hdt.* 43, DRN 2.569-80). A better way to understand the swerve is not as an explanation of how collisions began, but of why there are generative collisions at all (O'Keefe 1996, 314). Epicurus is probably responding, as usual, to Aristotle's criticisms of Democritus. Democritus said that all motion is "forced" or occurs through collisions among atoms, and that the atoms themselves have

³⁷ E.g. Diogenes of Oinoanda fr. 54 (Smith); Cicero, Nat. Deo. 1.69,73; De Fat. 22-3; De Fin. 1.19, 28.

³⁸ On free will, see Bobzien (2000), who is critical of this reading but offers an excellent summary of the arguments for it. On the irreducibility of the mental, see Sedley 1983 and 1988.

no "natural motions" (*Phys.* 215a1-13; Furley 1989, 101). Consequently, Aristotle complains that Democritus provides no *arkhê* or principle for atomic collisions (*Phys.* 252a32-b2)—not a temporal *arkhê* (literally, a beginning), but *arkhê* in the sense of a governing inner principle or "nature" (cf. *Phys.* 192b32-4)—and without this *arkhê* Democritus doesn't explain motion at all, since natural motion is prior to forced (cf. *De Cael.* 300b 8-11).

Aristotle's complaint may seem question-begging. Why should Democritus adopt Aristotle's theories about natural motion? But Tim O'Keefe has argued that if Epicurus' swerve is a response to Aristotle, then it is evidence of a shared intuition that motion (which both philosophers think is real and self-evident) requires a sufficient reason to explain why it occurs (2005, 122). I don't think we need go even this far. It suffices that both Aristotle and Epicurus accept that arguments about necessary conditions are persuasive. Aristotle asks: why are atoms the sort of thing that collide? An appropriate answer will be a statement of necessary conditions for collisions. Epicurus responds to Aristotle by improving on Democritus in two ways. First, he attributes weight to atoms as a natural motion, that is, the tendency to move, if unimpeded by other atoms, at an extremely fast speed through the void ("as fast as thought") (Furley 1989, 101-2). Second, Epicurus attributes to atoms the swerve, the tendency to collide (Lucretius says the atoms *declinare solerent*, "have a tendency to swerve") even though you'd think atoms moving along parallel trajectories would persist in parallel, laminar movement. These are the necessary conditions of collisions among atoms and, by extension, the creativity of nature.

This reading of the swerve corroborates Deleuze's claim that its purpose is to explain, or provide a figure for, the reciprocal determination or self-determination of atoms: "the clinamen is the reciprocal determination which is produced in a 'time smaller than the minimum continuous time thinkable'" (DR 184). Deleuze makes a similar remark in "Lucretius and the Simulacrum," where he calls self-determination "synthesis":

We must conceive of an originary direction for each atom, as a synthesis which would give to the movement of the atom its initial direction, without which there would be no collision. This synthesis is necessarily accomplished in a time smaller than the minimum of continuous time. This is the *clinamen*. (LS 269)

So far, Deleuze's reading is quite orthodox: the *clinamen* is supposed to respond to Aristotle by explaining the relation of atoms with one another in terms of a necessary precondition for atoms colliding and generating aggregates. However, the introduction of these considerations about the *speed* at which the determination of a relation among atoms (the swerve) takes place, despite being the most original part of Deleuze's reading of Epicurus, presents interpretive difficulties.

We must chase down Deleuze's allusions. The phrase in inverted commas that appears in *Difference and Repetition*, "time smaller than the minimum of continuous time thinkable," appears to be a quotation (although it is not). In "Lucretius and the Simulacrum," a footnote refers us to *Ep. Hdt.* 61-2. This first part of the passage referred to is all about the movement of atoms in the void. Epicurus claims all atoms move at an equal speed through the void because the void offers no resistance. Furley calls this motion at "atomic speed" (1967, 124), and Epicurus says that it occurs "as fast as thought." *Ep. Hdt.* 62, in contrast, is about the (so to speak) statistical or molar movement of atoms in compounds. Epicurus is trying to reconcile how it could simultaneously be the case that some compounds move faster than others and that atoms in these compounds are all moving equally fast. Epicurus presents a tricky passage where he seems either to rely on or to define *two* units of time, neither of which corresponds to Deleuze's "minimum of continuous time thinkable." Compounds manifestly move at different speeds, but atoms all move equally fast because:

Atoms in compounds are moving in one direction in a minimum of continuous time [*kata ton elakhiston sunekhê kronon*] and not in one [direction] in times distinguishable by reason [*kata tous logo theôrêtous kronous*], but they frequently collide until the continuity of their motion becomes perceptible. (*Ep. Hdt.* 62, my translation)

In other words, Epicurus mentions a *minimum of continuous time* and what seems to be a *minimum of thinkable time* but not a "minimum of continuous thinkable time." Deleuze has evidently conflated the two times in Epicurus and their corresponding speeds. This conflation is not fatal to his argument about the swerve (which Epicurus is not talking about here anyway) but it does present a challenge to grasping Deleuze's point.

Epicurus' second unit of time is easier to deal with. The speed of atoms in "times distinguishable by reason" appears to be equivalent to motion "as fast as thought," for example the "atomic speed" of the laminar movement of atoms through the void, or the speed at which atomic *eidôla* fly through space to affect us with perceptions. The other unit is trickier. A "minimum of continuous time" seems like it should be equivalent to a minimal quantum of time, since Epicurus uses the same word (*elakhiston*) to denote this time and the minimum of magnitude (*Ep. Hdt.* 58). But that can't be correct. It doesn't make sense to say that a temporal minimum is defined by the *slowed down* movement of atoms in compounds, because it remains possible to conceive of a smaller time, or a quicker motion, namely, that of the unimpeded atom. The true minimum of time, the smallest conceivable, can only be formally defined as how long it takes an unimpeded atom to travel one spatial minimum. Indeed, so great an authority as Furley denies that Epicurus could be

referring to a true minimum when he says "minimum of continuous time." Rather, Furley thinks, what Epicurus calls "times discernible by reason" refer to true minima of time: "the times which are distinguishable only in thought are indivisible units of time—*periods* of time, of course, not instants or limits—within which an atom 'has moved' (for you can never say 'it *is* moving') over an indivisible unit of space" (1967, 124).

Furley's reference to the Aristotelian distinction between "is moving" and "has moved," between *kinêsis* and *kinêma*, hints at how we should resolve Deleuze's confusion: what Epicurus calls an "*elakhiston* of continuous time" is not the same as an "*elakhiston* of time" full stop. Epicurean time, like motion and magnitude, is intrinsically *dis*continuous. A minimum of continuous time must be, Furley says, a multiple of true minima (1967, 114), since being a true minimum implies discontinuity. If this is so, then what immediately follows the tricky passage in question makes sense: "For the added opinion about the imperceptible—that the time which can be distinguished by reason will allow for continuous time (or movement) can produce discontinuous time (or movement). In fact, the opposite is true: at the level of perceptible bodies there *seems* to be continuity (just as there *seems* to be stasis [DRN 2.310-11]), but the discontinuous movements and times accessible to reason refute such continuities.

Sadly, Deleuze has transferred the word "continuous" into his discussions of Epicurean atomic motion where it does not belong. It is not the case for Epicurus, as Deleuze claims, that the "minimum of continuous time refers to the apprehension of thought" (LS 269). But it would be fair to say that the *true* minimum of *dis*continuous time refers to the apprehension of thought; that is, it can *only* be thought, and *has* to be thought to explain the apparent continuity of molar movement. Luckily, Deleuze's error is not fatal to his claims about the swerve or the existence of genuinely problematic Ideas in Epicureanism, because it merely misses an Epicurean distinction that is not central to Deleuze's argument: there are not two speeds of atoms in Epicureanism, as Deleuze thinks (the continuous speed of thought and the faster speed of the swerve), there are three (the continuous speed of *opinion*, the discontinuous speed of thought, and the even faster speed of the swerve). What Deleuze *explicitly* says is true but trivial, that the swerve, as a determination of the relation between atoms is accomplished faster than a minimum (or pseudo-minimum, if you like) of continuous time (LS 269), since for Epicurus the continuous time of opinion is slower than even the time of thought. But what Deleuze *wants* to say is far from trivial. The determination of a relation among atoms is accomplished even faster than the smallest time determinable by reason:

faster than the true minimum of time, not just faster than opinion but "faster than thought" (DR 184). Deleuze thus claims that the swerve stands for a "third speed of the image" (Cooper 2002, 47), faster than both the image of opinion (continuity) and the *eidôla* of thought (discontinuity).

"Lucretius and the Simulacrum" expands on the idea that the swerve accomplishes an originary synthesis of atomic motion, or an intrinsic reciprocal determination of atoms in a time smaller than the temporal minimum, by introducing the related claim that Epicurean atomism entails distinguishing true from false infinity:

What is essential to physics is to be found in the theory of the infinite, and of the spatial and temporal minima [and] this fundamental object of physics: *to determine what is really infinite and what is not*, and to distinguish the true from the false infinite (LS 272).

According to Deleuze, the implicit Epicurean doctrine of infinities is connected with the theory of minima (or infinitesimals) and their relation to the swerve. He remarks, "it is not surprising that Epicurus makes use here [*Ep. Hdt.* 62; the reference is to the indivisible *elakhiston*] of the vocabulary of exhaustion: there is something analogous in the *clinamen* to a relation between the differentials of atoms in movement" (DR 184). I take the phrase "differentials of atoms" to be approximately equivalent to *elakhista* or minima. Thus Deleuze implies that the theory of swerve as the relation between minima answers a question about how they are related.

So how does the Epicurean theory of infinitesimals relate to the distinction between true and false infinity? Deleuze's attitude toward interpretations of calculus provides an instructive parallel. He thinks that the relation dy/dx (differentiation) is an example of a "pure relation" that determines itself immanently, and that consequently it qualitatively generates the function from which it is supposed to be derived. If the swerve is the necessary condition for the creativity of nature (as Epicurus believes), and the swerve is a relationship between infinitesimals that is supposed to be similar to the "pure relation" of differentiation (as Deleuze believes), then the nature that it helps to create will be (something like) a sum of infinitesimal motions. Nature itself would be a kind of *integration*, again in a "barbarian" sense, an operation typically understood as early as the seventeenth century as a "process of summation in the form of a series" (Duffy 2006a, 126). The idea of summing infinitesimals is unattractive for a number of reasons (on the one hand, it runs into the Zenonian paradox of measure, on the other, the summation of indeterminate entities like dx to generate a determinate function looks question-begging). Nevertheless, as late as 1981 Deleuze expresses admiration for the idea of summing infinitesimals in order to generate functions from the differential relation. He considers this "barbaric" sense of integration to involve a novel formulation of infinity (novel in the sense of distinct from the inexhaustible infinity of classical

geometry): "something finite consists of an infinity under a certain relation." Under the influence of this novel infinity, Deleuze says, the metaphysics of the calculus attains an "equilibrium point, for seventeenth-century thought, between the finite and the infinite, by means of a new theory of relations."³⁹ This new theory is what Deleuze is looking to extract from different contexts and fields of inquiry. It is, for instance, the "treasure" hidden in the barbaric calculus and again in the Epicurean swerve.

Deleuze sees a similarly novel "theory of relations" in Epicurean atomism, along with an allied novel concept of infinity. While the differential aspect of the new theory of relations is embodied in the figure of the swerve, the integral aspect appears in a notion of the infinite sum of differentials. Thus Deleuze says that for Epicurus:

Nature must be thought of as the principle of the diverse and its production. ... Nature as the production of the diverse can only be an infinite sum, that is, a sum that does not totalize its own elements. Nature is not collective things exist *one by one*, without any possibility of their being gathered together *all at once*. (LS 266-7)

Epicurus does not quite say what Deleuze has him say, but he comes close. Although Epicurus does not call nature an "infinite sum," he does identify the universe with an infinite number: "in terms of the number of atoms and the magnitude of the void, the universe is infinite [apeiron esti to *pan*]" (*Ep. Hdt.* 41). For Deleuze, this fits with the reading of Epicureanism as presenting a theory of the self-determination of problems because totality is something that could only be applied to nature (understood this way, as an infinite sum) on the assumption of an extrinsic metric. Deleuze thinks the intrinsic self-determination of the problematic idea implies or requires this infinite sum without unity or totality. In this regard, it contrasts with the Kantian conception of nature as a "systematic unity" which aligns with Kant's extrinsic interpretation of problematic Ideas. The extrinsic determination of the problematic Idea implies or requires the presupposition of a "systematic unity of Nature," the World, which is even, in the case of Kant, conceived of as an *infinite* limit: "an *infinite determination* in relation to the concepts of the understanding" (K 20-21). Likewise, Deleuze thinks the approved, regulative use of Kant's Ideas ensures that possible experience (governed by the categories) is treated as a *totality* of all experience. These are the resonances when Deleuze characterizes Epicurean nature as an infinite sum *without* totality. Epicurus' "true infinity" means the infinite sum of relations among infinitesimals (swerves) in nature that does not amount to a totality or systematic unity. Such infinity without totality presupposes the swerve as a kind of *positive* indeterminacy, a vagueness that isn't a function of

³⁹ Deleuze's seminar, 17 Feb. 1981.

limited understanding, rather than the negative indeterminacy of unconditioned totalities from the perspective of our ordinary possible experience. Nature is truly infinite when the swerve ensures the unthinkability of "Nature as a whole."

What then would be Epicurus' "false infinity"? It is the infinity sometimes wrongly attributed to compounds of atoms. Epicurus thinks we should not regard as infinite "every worldly or intra-worldly combination" (LS 272). This goes for everything, even the compound of atoms we call the cosmos: "one must believe that the cosmoi, and every finite compound which is similar in form to those which are frequently seen, have come into being from the infinite ... and that all are dissolved again" (*Ep. Hdt.* 73). For example, it may be thought that the soul is infinite in some sense (perhaps temporally), but the soul is just a compound of atoms in the world, finite, having "come into being from the infinite" and thus subject to disaggregation (*Ep. Hdt.* 64-5). Deleuze points out how for Epicurus illusions predicated on falsely attributing infinity to a merely intraworldly combination produce suffering and disturbance (*taraxia*) among humans (LS 273). For instance, the illusion of the infinite duration of the soul and the no less illusory possibility of an infinitely long punishment after death (DRN 1.110; 3.1018-23) are of this kind. Epicurean physics has the moral purpose of divesting people of such mystifications by destroying the false infinity they presuppose.

According to Deleuze's innovative reading, the illusions of false infinity are consequences of the extreme speed at which *eidôla* are propagated. Like Kantian transcendental illusions, Epicurean false infinities are produced by the very conditions of perception-cognition itself. *Eidôla* impact the senses in a "time discernible to reason alone" and thus at a speed faster than a "minimum continuous time" (*Ep. Hdt.* 62; DRN 4.794-98). Deleuze equates the latter with a "minimum of *sensible* time." Since *eidôla* are not perceivable as *eidôla* (they are too fast), one is only aware of perceiving permanent external objects. But the permanence of such objects is a function of opinion: we *think* we see permanent objects or continuous motion, but we see constantly changing, discontinuous *eidôla*. Because of the way perception, cognition and opinion divide their labour, Deleuze says, it is common for the illusions of false infinity to arise: "In virtue of their speed, which causes them to be and to act below the sensible minimum, *simulacra produce the mirage of a false infinite in the images they form*" (LS 277). When one sees something (say, in a dream) that looks like a divine being (DRN 5.1161-82) or a human-animal hybrid (DRN 4.732-48), although it is a product of the motion of imperceptibly fast images and not a real, abiding object, opinion steps into its habitual role and ascribes existence and permanence to the simulacral

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object.

Deleuze's contrast between true and false infinities, and the treatment of Epicurean nature as an infinite sum without totality, enhances his discussion of problematic ideas. Epicurean false infinity hinges on the fact that *simulacra* move "as fast as thought" and no faster. False Epicurean infinity therefore represents an incomplete appreciation of the positive role of the swerve in generating collisions, changes and so on. False infinity remains with minima, *elakhista*, infinitesimals (the Epicurean equivalents of the undetermined dx) without advancing to an understanding of the positive role of the *clinamen* (equivalent to the differential relation dy/dx), descriptive of the intrinsic determination of problems. Thus, as far as Deleuze is concerned, the false infinite in Epicurus is similar to the infinite determination of the Kantian Ideas (as unconditioned totalities buttressing the ambition of experience governed by the categories to stand for experience as a whole). What Epicurus denounces as false infinity is the ancient Greek counterpart of what Deleuze rejects as "extrinsicism," in which problematic ideas are understood from the point of view of something external to them—in the case of Kant, possible experience; in the case of Epicurus, "added opinion."

THE VIRTUAL AND THE CRITIQUE OF POSSIBILITY

Given the parallels between Deleuze's readings of Epicurus and problems in *Difference and Repetition* and Epicurus and infinity in "Lucretius and the Simulacrum," we should expect Deleuze to distinguish between good and bad infinities, and to advocate the former, on behalf of his own theory of problems. This is just what he and Guattari do in *What is Philosophy?* (1991), a book that makes Deleuze's debt to Epicurus clearer and also indicates the Stoic-Epicurean rapprochement to which Deleuze's theory of problems and events amounts.

The theoretical point of departure in *What is Philosophy*? is a relationship between thought and infinity. As Deleuze and Guattari put it: "Thought demands 'only' movement that can be carried to infinity. What thought claims by right, what it selects, is infinite movement or movement of the infinite. It is this that constitutes the image of thought" (WP 37). They mean an alternative to the so-called dogmatic image, which is theorematic, extrinsicist and often inspired by negativity. *What is Philosophy*? contains the formalization of an alternative image, which conceives of ideas as problematic, intrinsically self-determining, not negative. To the extent that thought is related to infinity in terms of speed, this image of thought has an explicitly Epicurean inspiration: "From Epicurus to Spinoza ... the problem of thought is infinite speed" (WP 36). While Spinoza is discussed elsewhere a number of times in *What is Philosophy*?, Epicurus is not. The derivation of the book's theses from Epicurus remains implicit. My purpose here is to make it explicit.

The notion of infinite speed is the crux of *What is Philosophy*? Deleuze and Guattari identify infinite speed with chaos: "Chaos is defined not so much by its disorder as by its infinite speed with which every form taking shape in it vanishes" (WP 118). They continue: "[chaos] is a void that is not a nothingness but a *virtual* ... Chaos is the infinite speed of birth and disappearance" (WP 118). The "infinite speed" that Deleuze and Guattari accept and affirm is a *virtual infinity*. What does this mean? In this section I will explain Deleuze's use of the term "virtual," and in the next section, the term "speed."

The virtual is an important concept for Deleuze from early on. Simply put, the term "virtual" denotes the non-actual aspect of reality. That means it expresses the fact that what is actual—what actually exists—does not exhaust what is or what could be. Thus it stands for the capacity reality has to generate genuinely new forms. Such a non-actual dimension of reality is something Deleuze thinks he needs in order to tell the genetic story he wants to tell. We might approach talking about the virtual either negatively or positively. Deleuze adapts the positive way of talking about the virtual (in terms of what it *is*) from Simondon, and the negative way of talking about it (in terms of what it is *not*) from Henri Bergson.

Negatively, talking about the virtual involves an implicit critique of talk about "the possible" and "possibility" (e.g. DR 211-12). We might think that the occurrence of an event means its going from being merely possible to being real, or the evolution of an organism as the realization of possibilities inherent in its ancestors. Following Bergson, Deleuze thinks this is the wrong way to approach such topics. Recall that Deleuze is interested in the "truth" of problems, the quality they have to rouse thinking from its conventional complacency. The idea of possibility raises questions, but not ones that bear witness to any genuine productivity of this idea. Deleuze takes from Bergson the view that possibility yields *false* problems, which preserve rather than challenge thought's complacency.

Bergson's essay "The Possible and the Real" argues that many classic metaphysical problems are badly stated, and that, when appropriately reformulated, they evaporate (Bergson 1946, 77). For example, the metaphysical chestnut "Why is there something rather than nothing?" evinces a pseudo-problem. The question arises, Bergson thinks, from first positing a "nothing" which precedes "something" and then inferring that there being "something" is an *addition* to nothingness. Bergson also thinks that the question of why reality is organized in forms such that we

can understand it is a pseudo-problem: "How is it that our thought recognizes itself in things?" Why is the universe "ordered" so that we can think it? Is it not conceivable that the universe be totally disorganized and that we understand or know nothing about it? (Bergson suspects that modern epistemological skepticism arises from this line of reasoning.) The implication here is, similarly, that "disorder" precedes "order" and that order adds something to disorder (78-80; cf. Bergson 1911, 220-24, 272-98).

Both of these implications are quite wrong. These conceptions of disorder and nothingness arise from a confusion of "the more" and "the less":

They consist in believing that there is *less* in the idea of the empty than in the idea of the full, *less* in the concept of disorder than in that of order. In reality, there is more intellectual content in the ideas of disorder and nothingness when they represent something than in those of order and existence. (1946, 80-81)

In fact, Bergson thinks it says more about us than about reality that we consistently confuse the more and the less in this way. "Nothing" and "disorder" are words that have meaning primarily in relation to our expectations. When our intelligence has an interest in finding something, and fails to find it, we say there is "nothing" there. When we look for one kind of order and we don't find it, we say there is "disorder" (78, 80). Deleuze explains: "In the idea of disorder there is already the idea of order, plus its negation, plus the motive for that negation (when we encounter an order that is not the one we expected)" (B 17). The trouble with formulating the problems of "nothingness" and "disorder" in this way is that it assumes a certain standpoint, that of "fabrication," as Bergson puts it, rather than genuine "creation" (Bergson 1946, 77). Fabrication means the arrangement and rearrangement of already existent, stable, unchanging formed elements, like puzzle pieces. In other words, it is an account of the combination of beings rather than an account of their becoming what they are. Creation, in contrast, means the progressive invention of unforeseeable new forms: making your own puzzle pieces. Shifting our perspective so that creation is more fundamental than fabrication reveals the confusion of the more and the less on which these traditional metaphysical and epistemological questions rely.

According to Bergson, the questions raised by the discourse on possibility are likewise pseudo-problems.

Underlying the doctrines which disregard the radical novelty of each moment of evolution there are many misunderstandings, many errors. But there is especially the idea that the possible is *less* than the real, and that, for this reason, the possibility of things precedes their existence. They would thus be capable of representation beforehand; they could be thought of before being realized. But it is the reverse that is true. (1946, 81)

Exactly the same confusion of "the more and the less" occurs when one asks about the future in terms of what is "possible," as if being real *added* something to being possible, or as if the possible were just the real minus existence. Suppose one asks about the sea battle that will take place tomorrow. If it will take place tomorrow, is it correct to say it is "possible" today? Is it equally "possible" that it will not occur? Bergson says this talk about possibility should be dropped, since it "disregards the radical novelty of each moment of evolution." Talk about possibilities usually involves the illusion that future events are stored up in "some cupboard reserved for possibles," as if possibilities like this reduces the passage of time to the mere rearrangement of components that are already given, available for "representation beforehand."

Bergson's preferred way of expressing this is in terms of time or "duration": the realization of possibility, in the traditional metaphysical sense, is indifferent to the passage of time. If, as Bergson thinks, time is just identical to the creation of unpredictable forms ("Time is invention or it is nothing at all" [1911, 341]), then time is incompatible with the traditional conception of possibility. In fact, putting possibility in what Bergson considers its proper place means assigning it a peculiar retrograde grammatical tense: the future anterior. You simply can't say that an event "is possible" before it happens without denying the novelty of time passing. You can only say that the event "will have been" possible once it happens. His idea is that future contingents, like the sea battle, are *so* contingent that they are "not yet possible" (1946, 82). They only become possible after they are real, as their possibility is projected back into the past, as "the mirage of the present in the past" (82).

Deleuze picks up these criticisms of possibility from Bergson (DR 208, 212). Possibility is a "false" problem, according to Deleuze's construal of the "truth" of problems, because, as a problem, it lacks the quality of being really generative. Possibility doesn't follow elements actually coming to be, because they have already come to be—they already *are*, they "preexist"—before their "realization." In other words, the "realization" of possibles doesn't really mean becoming. It's just a reconfiguration of beings. Thus possibility doesn't give Deleuze the explanatory resources he's looking for to tell a genetic story. It's just another non-explanatory abstraction from the real.

I noted that in *The Logic of Sense* Deleuze remarks that "true" problems begin from conditions that remain indeterminate and then generate solutions as they are allowed to determine themselves (LS 121). We have since enriched this claim, through Deleuze's readings of Kant and Lautman: problems are undetermined (different in kind from their solutions), but determinable, and

ultimately completely so. Kant had this idea about problems, but he submitted the conditions of their finding solutions to "extrinsic" requirements. Deleuze also suggests that "false" problems are those whose conditions are "overdetermined" (LS 121). If possibility is a false problem then it is overdetermined with respect to its conditions. What does this mean? One of the conditions of possibility, as a pseudo-problem, is the illusion that there is *less* in the idea of the possible than in the idea of the real. That can only be the case if something is possible before it is real, and realization simply means the addition of reality to the possible, which already preexists in the sense that it already has a determined form or character. In other words, the "falsity" of possibility as a problem involves the illusion that there is something determinate (finite, bounded, circumscribed, "preexistent") among the problem's conditions. *Any* determination among the conditions of a problem is "overdetermination," since allowing the problematic idea to determine itself requires indeterminacy as a first stage. Another way Deleuze says this: in the case of the pseudo-problem possibility, it is as if the condition *resembled* that of which it is the condition. The real *resembles* the possibility it realizes.

Deleuze makes this point in his book on Bergson by claiming that the false problems I have been talking about, "nonexistent" problems like "disorder" and "nothingness," are equally well understood as "badly stated" problems (B 20). Problems are badly stated when they ignore differences in kind and lump such differences together as if they were merely differences of degree. That is, they ignore what Aristotle called "otherness," inter-generic difference, by collapsing it into differences "of the more and the less," which retain a reference to a genus or shared concept in relation to which they differ, like Aristotelian species. This means possibility, as a false problem, ignores a difference in kind and treats it as if it were a difference of degree. In this case, the difference in kind is between conditions and what they condition; the difference in kind between what conditions an event and the event itself is ignored. It is presumed that possibles preexist in some way similar to the way that real things exist, and just differ by degree, as if possibilities were simply "less real." Compare Deleuze's claim (influenced by Kant and Lautman) that the indeterminacy of problems is identical to their "difference in kind from solutions" (DR 178). I said in the first chapter that this difference in kind between problems and solutions is preserved when the condition for the occurrence of events is paradoxically identified as the "uncondition" (as in Structuralism and Stoicism). Here, Deleuze argues that the difference in kind is preserved when the conditions are treated as virtual, rather than possible. That is because he thinks that the virtual does not *resemble* the actual the way the possible supposedly resembles the real. The relevant difference

in kind between them is respected, along with indeterminacy as the first characteristic of their relationship. I think Deleuze marks the "non-resemblance" of the virtual and the actual, throughout his oeuvre, in terms of an ontological difference between condition and conditioned. Deleuze is quite consistent on this position, which is basically a permutation of the Stoic ontological stemma or the theory of difference in the *Sophist*; it is another way of talking about the difference between being and non-being-that-is-in-a-sense. Calling a condition "virtual" means assigning to it an "ontological status" different in kind from that of the conditioned in the way Deleuze thinks is necessary for the conditioning to be genuinely productive.

Bergson's critique of possibility is, in part, a critique of Leibniz. Leibniz's conception of possibility is connected to his view that there must be a sufficient reason for the world, that the question "Why is there something instead of nothing?" should have an answer. He thinks that nothing finite, nothing "in the world," can supply this sufficient reason for the world itself.⁴⁰ Consequently, if the finite succession of temporal states of the world gives no reason for itself, its reason must be sought in something "not of the world," extramundane, infinite and eternal.

To flesh out this picture, Leibniz defines modalities. He distinguishes two kinds of necessity: physical (or hypothetical) and metaphysical (or absolute). States of the actual, physical world are only physically (hypothetically) necessary in relation to other, prior states. *Given* that a certain event has occurred (say, a ball is thrown in the air), which is not itself inevitable, then another event necessarily follows (say, the ball falls to the ground), in the first sense of physical or hypothetical necessity. The *reason* for the world, its ultimate ground, is not like this. It will be necessary in a different way.

What is it to be metaphysically necessary? As Leibniz explains, it means for a thing's essence to include existence. By existence Leibniz means actuality, or actual reality. Essence means something like reality in general, which includes *possible* reality.⁴¹ Not everything has an essence that includes existence (perhaps only God does), and what has essence but not existence is a merely *possible* reality. A corollary of this view is that not every possible thing is actual, or actualized. Leibniz also says that possible things (*possibilia*) contain different proportions of essence or reality. This quantitative conception of essence motivates his view that possibles "strain for existence" (*se tendere ad existentiam*), and that the strength of their straining is in proportion to

⁴⁰ "On the Ultimate Origination of Things" (PE 149); Monadology §37.

⁴¹ "On the Ultimate Origination of Things" (PE 150): "possibilitate vel essentia ... essentiam vel realitatem possibilem."

the quantity of essence they contain.⁴² Leibniz prides himself on a turn away from Descartes and a return to Aristotle, especially with the notion of substantial forms in physics.⁴³ In the discussion of possibility, he is also being very Aristotelian. Aristotle, recall from Chapter 2, thought that matter (possibility) yearns for form (actuality).

Given the view that possibles contain a certain quantity of reality, and the distinction between possibility and actuality, Leibniz explains the mechanism of the actualization of possibles. God creates the world by optimizing, doing the most with the least, getting the most perfection (quantity of essence) into the world that its finitude can sustain. The actual world is the one where the most possibilities are realized (maximum compossibility). To illustrate this divine economy, Leibniz appeals to teleological behaviours in physics, prefiguring the principle of least action that he originates: it is "like the case of a liquid placed in another of a different kind [density], which forms itself into the most capacious shape, namely that of a sphere."⁴⁴ A difference in an intensive property like density between liquids (say, oil and water) presents a problem to be solved. The solution involves an optimization. The spherical shape of the less dense liquid (oil) encompasses a maximum volume within a minimum surface area.

Leibniz considers an objection to his view. Is it not a faulty comparison to compare the motion of bodies (e.g., liquids of different densities) conforming to a principle of least action, with God's creation of possibles? In the first case, the things involved in the optimization (oil and water) really exist, but in the second, the possibilities or essences that do not yet have existence, don't.⁴⁵ Leibniz wonders whether these possibles are just imaginary or fictional. In the terms most relevant to my thesis, Leibniz is asking himself whether existence is equivocal. He answers: not exactly. Although there is a distinction between actual and possible to the extent that what actually exists must be in principle observable to us, given that what exists in one world is connected with everything else that exists in that world, whereas possibles need not be, Leibniz vigorously denies that possibles don't "really exist." They exist, or maybe "subsist," in the mind of God, a "certain realm of ideas, so to speak [*in quadam ut sic dicam regione idearum*] in God himself, the source of every essence and of the existence of the rest."⁴⁶ That is, Leibniz makes his defense against this objection reduce to his first argument, that the sufficient reason for actual things must be sought in

⁴² "On the Ultimate Origination of Things" (PE 150).

⁴³ "A New System of Nature" (PE 139); "On Nature Itself" (PE 164-5); "On Body and Force, Against the Cartesians" (PE 250, 256)

⁴⁴ "On the Ultimate Origination of Things" (PE 151).

⁴⁵ "On the Ultimate Origination of Things" (PE 151-3).

⁴⁶ "On the Ultimate Origination of Things" (PE 150-1).

extramundane metaphysical necessities. If so, then there is no reason to think that possibles are ontologically different from actuals. That's because possibilities are (roughly) essences, and essences derive from God. Both actual things and possibles exist "through" something metaphysically necessary and extramundane.

In the absence of such a theological guarantee, however, the objection looks more plausible. I think Bergson's criticism of "possibility" can be thought of as a version of this objection that Leibniz already presented to himself. Bergson says we tend to think of possibilities (wrongly) as existing before their realization, when in fact their pre-existence is only a kind of retrospective illusion buttressed by the use of the retrograde grammatical tense, the future anterior. Thinking of events as "possible," when that means preexisting their existence, like essences, leads to many confusions, but the main confusion, most compellingly stated, is that there is something like a "cupboard of possibles" that stores them prior to realization.

Deleuze agrees with Bergson that this way of thinking about coming-to-be has serious drawbacks—namely, that it fails to countenance the idea that the actual is meaningfully different from what precedes it, and that it consistently assumes that what comes to exist "resembles" what it comes from or presupposes. You might think that it is appropriate to talk about the genesis of organisms or the occurrence of events in terms of the realization of possibilities, but that strategy is inadequate. It doesn't really explain their genesis, but defers an account of becoming and banks on a non-explanatory factor, the "possible," abstracted from the real after the fact. The possible purports to explain the genesis of the real, but only by means of a model of similitude, sameness, or identity. The notion of the possible manifests what Deleuze thinks of as the oldest of metaphysical prejudices, the underestimation of difference, making difference secondary, or consigning it to a "maledictory state" (DR 29).

What about "the virtual"? Deleuze thinks the virtual avoids this drawback, since, negatively speaking, it doesn't resemble, or prefigure, the actual that it conditions by definition. Deleuze introduces this terminology: a possibility is realized, but the virtual is "actualized" (B 96). The possible is actual without being real (it is the retrospective mirage of an actual state or event with the predicate "is real" withheld), and the virtual is correspondingly "real without being actual" (B 96, DR 208, WP 22). "Realization," as I said, is not a synonym of becoming, but "actualization" is.

It might be thought that the virtual is supposed to *replace* the possible, to do the same work as the latter only better. I think that's wrong. In fact, the virtual and the possible *do not do the*

same work; the possible operates in more restricted domains. Bergson himself was satisfied to say that possibility—with its implication of preexistence or preformation—is good for talking about certain kinds of systems, namely closed or isolated ones (1946, 81, 84), whose energy and mass obey a conservation law. A certain system state (e.g., minimum potential energy) can be said to be possible, in the sense that it "preexists" any changes within the system, if it corresponds to the conservation law of the system. "Virtuality" is the corresponding way to talk about open systems, where energy continuously flows in and out, and the conservation of energy is not observed. The virtual can help to account for evolution, the happening of events, and so on, in a way that the possible cannot, precisely because these are open systems rather than isolated ones.

So far, I have described the virtual only negatively. Positively, Deleuze's "reality of the virtual" is the thesis, adapted from Simondon, that reality is "out of phase" with itself (DI 86-7; Bogue 1989, 62). Being, or reality, is a metastable system, like a supersaturated solution. In soda water, more CO₂ is dissolved in water at higher pressure than at lower pressure. This can serve as an expression of the relations between actual, possible and virtual. The real is the actually existing solution—the soda water I'm drinking. The possible is the quantity of CO₂ that could be dissolved at the current actual pressure. The virtual is the quantity dissolved in it, which is greater than would be possible in ambient atmospheric pressure. Actualization is like the coming out of solution of a compound in a supersaturation, for example CO_2 in carbonated water, or (in an example Deleuze loves to use, again adopting it from Simondon) the crystallization of (e.g.) glucose crystals in a supersaturate like honey (LS 103, TP 49-50, 60; N 66; AV 150; DI 88, 92; Simondon 2009, 6). The metastable chemical system *produces* or *generates* something by virtue of the fact that it contains implicitly, and brings together, two thresholds or quantities of solute: the amount of a compound that can be dissolved at a lower pressure and the amount that actually has been dissolved at a higher pressure. Simondon talks about this bringing together as involving two heterogeneous "orders of magnitude" (2009, 7) or "different orders of potential energy" (Simondon 2005, 71-77). Deleuze talks about two "scales of reality" (DR 246).

The realization of a possibility, in contrast, would be the idea that a stable system could produce or generate the same result, even though it doesn't bring together these two orders of magnitude. Realization is an illusory productive relationship involving (according to our illustration) only the quantity of CO_2 and "normal" pressure (say, atmospheric pressure at sea level). Thinking in terms of possibility means supposing that the quantity of CO_2 that can be dissolved in water is determinate or inevitable, as if the quantity of CO_2 (possibility) preexists its dissolution. But that's a kind of illusion. Of course the quantity that dissolves in water isn't given, doesn't "preexist," because different quantities can be dissolved depending on pressure. The analysis in terms of possibility involved in realization ignores these intensive differences, for example of pressure and temperature.

The models of metastable systems persuade Simondon to say that reality itself has a duality of heterogeneous orders: he calls them "orders of magnitude" by analogy with the quantities involved implicitly in metastable systems, like a supersaturation for example—the quantity that is *potentially* dissolvable (at normal atmospheric pressure) and the quantity that really has been dissolved at a higher pressure and that subsists, once pressure is "normalized," as a kind of productive excess, a potential for change, within the system as it opens. Deleuze calls these orders of magnitude the virtual and the actual. Generalizing to the ontological, the "reality of the virtual" thesis means that more becoming is "dissolved" in being than would be possible under "normal" circumstances (if, for instance, being were an isolated system).

Bergson himself was perfectly willing to say that the problems of disorder, nothingness and possibility might appropriately arise (and would not create pseudo-problems) in the case of closed systems (1946, 81, 84), where there's no genuine creation, just the rearrangement of preformed, preexistent elements. But nature is not a closed system, and it's productive of metaphysical confusions to suggest it is. Putting Bergson's point in Simondon's terms, closed systems can be "stable" systems, but in nature "metastable" systems are the norm.

Deleuze says the principal difference between the realization of possibilities and the actualization of the virtual is that realization takes resemblance for granted:

The real is supposed to be in the image of the possible that it realizes. (It simply has existence or reality added to it, which is translated by saying that, from the point of view of the concept, there is no difference between the possible and the real.) (B 97)

This conclusion about realization explains why possibility is a "false" problem. The resemblance of possible and real implies the preexistence or preformation of elements whose genesis is at issue inhibits the problem's quality of genuine productivity. Actualization is opposed to realization on just this point:

While the real is in the image and likeness of the possible that it realizes, the actual, on the other hand, does *not* resemble the virtuality that it embodies. It is difference that is primary in the process of actualization—the difference between the virtual from which we began and the actuals at which we arrive, and also the difference between the complementary lines according to which actualization takes place. (B 97)

The genuine generation characteristic of a "true" problem requires the non-resemblance between the thing generated and its conditions (if they resemble one another, as in the case of the realization of a possible, then this explanation is not really genetic—it's just the rearrangement of things already generated obscurely, somehow). That's why the transcendental condition of a problem is an event, which Deleuze calls "virtual." In order to be a precondition of genuine novelty, there must be no resemblance. Virtuality is this non-resembling precondition.

Why does Deleuze need the concept of the virtual? What work does he expect it to do? The virtual is a transcendental field or structure. It is, I think, a *minimalist* transcendental field. Its sole purpose is to be the precondition or force appealed to in transcendental arguments about what must necessarily precondition diversity. Its purpose is not to predetermine, prefigure or resemble what it conditions. If difference, change, and becoming are to be real and metaphysically primary, as Deleuze (and Bergson) would like, then there must be this transcendental condition, a principle of emergence or creation that does not prefigure or predetermine the action that it conditions and generates (Shaviro 2005, 35).

What actually exists is evidently diverse and complex. If the virtual does not resemble the actual, then it is neither of those things. Deleuze says it is "simple" and "pure" (B 96). In *Bergsonism*, Deleuze also describes the virtual as a totality, or even a unity, a "One-All" (B 93). Describing the virtual this way is simply a way of emphasizing that, unlike the actual, it is not already individualized or diversified. The virtual totality is "simple" or "pure" in the sense that it is not *pre*differentiated. It is more like a force than a reservoir of determinations to draw on. Since the virtual is simple, its way of generating diversity (actualization) is always a "dividing up" of what has no parts, no natural or predetermined articulations. Deleuze says actualization occurs through divergence and creation (B 97). What the virtual generates (which Deleuze calls divergent "lines") will be "different in kind" (different in the sense that Aristotle meant when he said "other," like the difference between genera in the absence of a supergenus). The divergent lines the virtual generates are different in kind both *from the virtual* (which is simple and non-actual) and *from one another*, because the virtual has nothing (so to speak) that it could pass on to both divergent lines in common.

There are two principal characterizations of "the virtual" in Deleuze: as "One-All" and as "infinite speed." In *Bergsonism* Deleuze calls the virtual a "One-All," and much later in *What is Philosophy?* he uses the same phrase to describe the "plane of immanence." In that book he also characterizes the virtual as "infinite speed." My purpose here is not to defend Deleuze's concept of

the virtual but more modestly to suggest an explanation why he adopts these two characterizations, especially why he describes the virtual as "infinite speed." The answer must be sought in his reading of the Epicureans. On the one hand, the "One-All," simple and pure virtuality, which is necessarily actualized in divergent lines, is inspired by the conception of nature Deleuze derives from Epicurus: nature as an infinite sum that does not totalize its elements, whose purpose is "the production of the diverse" (LS 267). Call this the "integral virtual." On the other hand, there are the virtual potentials that continuously affect any actual entity, that continuously open every putatively closed system. Call this the "differential virtual." In "The Actual and the Virtual," a very late essay, Deleuze explains this differential conception of the virtual in a way that signals its Epicurean origins.

Philosophy is the theory of multiplicities, each of which is composed of actual and virtual elements. Purely actual objects do not exist. Every actual surrounds itself with a cloud of virtual images. ... They are called virtual in so far as their emission and absorption, creation and destruction, occur in a period of time *shorter than the shortest continuous period imaginable*; it is this very brevity that keeps them subject to a principle of uncertainty or indetermination. (AV 148, my emphasis)

Deleuze invokes the virtual to explain how genuine creation occurs—real genesis, real becoming, not just moving around things that have already come to be—but he says the indeterminacy proper to the virtual is a consequence of its infinitely fast speed. Like the *clinamen*, the virtual affects actual bodies in a time shorter than the shortest time ("faster than thought"). I think both the integral and differential characterizations of the virtual are Epicurean in inspiration. The novelty of my reading of *What is Philosophy?* lies, I take it, in recognizing the second trajectory of Epicurean influence. Deleuze and Guattari's otherwise puzzling discussion of speed, and particularly the "infinite speed" to which they assign such importance, should be understood as derived, at least in part, from a reading of Epicurus.

CHAOS AS INFINITE SPEED

What, then, do Deleuze and Guattari mean by speed? In *What is Philosophy*? speed is a way of describing becoming. Many commentators attempt to describe Deleuze's (or Deleuze and Guattari's) philosophy as promoting the priority of "relation" over the terms or self-identical things related.⁴⁷ That is to say, roughly, a "thing" is just a local, relatively stable system of relations, and not the embodiment of an essence to which it owes its identity. Rather, a thing has had to *become*

⁴⁷ E.g. Duffy 2006a, 142; Durie 2006, 182-3; Bryant 2008, 59, 69.

identical, to become what it is, and is thus subject to a becoming, which is "first" with respect to its identity (compare DR 40). In *What is Philosophy*? Deleuze and Guattari prefer to speak of "speed" rather than relation. The virtue of this approach lies in the comparisons it enables. For example, you can say that the speed of a *being* is necessarily finite, since it is limited by being the movement of something that already is, but the speed of *becoming* is not. Becoming can only be said to occur at a calculable, finite rate if it is assumed that becoming is something that happens to beings already given, in terms of which becoming is measured and calculated. This conception is anathema to Deleuze, for whom events (i.e., becomings) are the transcendental conditions for the diversity of beings. If becoming is primary then so too is difference, for what is becoming but becoming different? Deleuze's difference is not the difference between two things, but the difference that *produces* things, whose self-identity is a relative not an absolute determination.

Deleuze and Guattari describe becoming as "infinite speed" because although becoming means movement, it is not the movement of some *thing* (in the sense of *some one thing*). Deleuze and Guattari's "infinite speed" does not mean an actual being accelerated to an unlimited velocity. Rather, speed means something like original motion, not the movement of a being but the movement by which beings become. Such motion is therefore infinite in the sense of not limited by a being that already is.

To put it in quasi-Epicurean terms, Deleuze and Guattari's "infinite speed" means faster than the minimum time conceivable (a time minimum), and *a fortiori* faster than the fastest physical movement. Infinite speed means "faster than atomic speed." Concretely, this entails that movement at infinite speed has always *already occurred* whenever we isolate what we believe to be a conceptual or physical minimum. The identifiable minimal things (possessing unity, identity, etc.) that we are able to isolate have *become* identifiable at an infinite speed. Deleuze and Guattari credit the Epicurean notion of swerve with discovering this kind of speed (so long as we understand the swerve not to mean just a relation between already self-identical atoms, but the fact that the motion of atoms is always tending to change, to become different, before it can be determined, assigned a calculable speed or direction). Finally, Deleuze and Guattari call infinite speed *virtual* because they want to claim it is something real, but not something that resembles any actual entities.

In *What is Philosophy*? Deleuze and Guattari memorably define philosophy as the creation of concepts (WP 5), but concepts are not understood, as they are in *Difference and Repetition*, as generic identities that determine extensions and suppress particular differences (DR 12, 19).

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Rather, their new conception of concepts is an application of their thought about infinite speed. Early Deleuze defines a concept in general as the manner in which the principle of identity is "deployed within representation" (DR 288). In other words, concepts are our ways of representing identities to ourselves. Imagine something repeated a number of times, say, the colour red: a red cup, a red pencil and so on. To treat these repeated instances as falling under a concept, or to treat the class of red instances as the extension of the concept *red*, means to relate them, or subordinate them, to a form of identity, to treat them as in some measure the same, similar, comparable, relevantly analogous. In this relation the distinctiveness or singularity of each instance is lost, or at least subordinated. A " concept" means this way of treating repetitions as if they were the same. In this way, repetition is defined such that it presupposes identity, e.g., the identity of the repeated colour (DR 288). Part of Deleuze's argument in *Difference and Repetition* is that repetition is not best understood in terms of conceptual identities, but as "difference without a concept" (DR 13).

This view of concepts as identities is meant, I think, to capture an ordinary, prephilosophical understanding. Nevertheless, it is a very traditional, implicitly Aristotelian view (DR 32). It is like the "abstractionist" view of concepts that Frege rejected (Ricketts 2010, 154). According to this view, concepts are more general the more abstract they are, the less particular content they contain. For example, the concept *animal* is more general than the concept *human* (in the sense that it has a greater extension, more objects falling under it), and also correspondingly less comprehensive. This way of thinking of concepts as "intensions" or "comprehensions" goes back at least to the Port-Royal *Logic* (of 1662), which distinguishes between the content of ideas, the sum of the characteristics that analysis finds "in" them, and their extensions, the entities or subjects to which the ideas apply, and is more likely even older (Kremer 2010, 222). Porphyry's Isagogê or introduction to Aristotle's Categories (a text Deleuze knows well: DR 308) depicts a hierarchy of nested genera and species, but Porphyry treats this topic explicitly as a matter of logic, the implications or intensions of different ideas, rather than committing to any metaphysical position on the existence of the genera in question (Isagoge 1-2). "Intensions" are what concepts, on this view, "contain," in the way that the concept *human* can be said to "contain" the concept *animal*, in that it implies the latter: anything human is also an animal (but not vice versa). To say one concept is less comprehensive than another means that it has fewer intensions. Correlatively, each of these nested concepts has a different extension, a different range of application, in that different objects fall under it. Each one represents, then, a "form of identity" (in Deleuze's language) whose generality subsumes particulars and effaces their differences. When Deleuze

describes the (inadequate) difference between "possibility" and "real" in order to criticize it, he does so a number of times in terms of "concepts" understood in this sense: "from the point of view of the concept, there is no difference between the possible and the real" (B 97); "What difference can there be between the existent and the non-existent if the non-existent is already possible, already included in the concept and having all the characteristics that the concept confers upon it as a possibility? Existence is *the same as* but outside the concept" (DR 211).

However, Deleuze changes how he thinks about concepts late in his career. Deleuze and Guattari's new conception of concepts in *What is Philosophy?* is an application of their thought about infinite speed because they contend that the concepts that philosophers create emulate the infinite speed of becoming. Infinite speed, or chaos, is equally creative and destructive. Philosophers seek to harness, accentuate or prolong its creative movement.

Deleuze and Guattari say that a concept, in their new way of thinking, "speaks the event, not the essence of the thing—pure Event, a hecceity" (WP 21). The concept of a bird, for instance, does not refer to the specific or generic essence (e.g. of blue jay or of *corvidae*), but the "composition of its postures, colors, and songs: something indiscernible that is not so much synesthetic as syneidetic" (WP 20). They describe a concept as the "condensation" or gathering together of heterogeneous elements (postures, colours, etc.), into a kind of whole or totality, albeit a "fragmentary" one, whose elements the concept renders "inseparable" (WP 21). Being a "whole" here doesn't mean being a form of identity, in the sense Deleuze criticized in *Difference and Repetition*. Rather I think it evokes the characterization of concepts as the "inseparability" of elements or as "zones of indiscernibility" (WP 19-20). It suggests partlessness or simplicity. The idea is not that the concept *blue jay* simply *connotes* various colours, postures, and so on (or contains them hierarchically, as intensions), but that the concept *just is* the indiscernibility of these heterogeneous components in particular. For the concept (of blue jay) to connote others (being blue, having wings, etc.), these would have to remain distinct, as if their distinct characters were given independently of their being conceptualized. But being gathered in a concept, for Deleuze and Guattari, just means that these components are indistinct. The components gathered together in a concept neither remain separate nor become identical, but "something passes from one to the other" (WP 19). I think this passage between components is what is, in a concept, most like the genetic quality of chaos, or infinite speed. The components of a concept becoming one another is reminiscent of the becoming of entities out of chaos.

A number of Deleuze and Guattari's remarks suggest that this conception of concepts is

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derived from the thought about infinite speed. They say that a concept is defined as "the inseparability of a finite number of heterogeneous components traversed by a point of absolute survey at infinite speed" (WP 21). "Survey" here is a somewhat opaque metaphor. The use of the term ("*survol*") indicates at least that a concept is an incorporeal in the Stoic sense. When Deleuze says in *Dialogues* that an incorporeal "skims over" a state of affairs, he uses the same word: *survoler* (D 64). Deleuze and Guattari define, in turn, the speed of the "survey" as the "specific infinity" of the concept's state (WP 21).

I believe this characterization in terms of infinity suggests the close relationship between concepts and chaos (infinite speed). To create concepts means coming close to infinite speed, the coming to be of (for example) actual blue jays in their particular contexts and ecological niches. Creating concepts means becoming intimately acquainted with becoming and extracting from it some heterogeneous components (like the postures, colours and songs of the blue jay). The concept is still infinite (a "specific infinity") in the sense of unlimited—it's not determined before the fact by a given determined form of identity—yet it lends infinite speed a certain coherency. It is "specific" not in the sense that it refers to an essence, but in the sense that it is particularized by having a certain context-dependent intelligibility (Gasché 2014, 46). For this reason Deleuze and Guattari describe the operation of creating a concept as gathering together variations in order to "retain infinite speeds while gaining consistency, by giving the virtual a consistency specific to it" (WP 118). In other words, they want to formulate a concept of philosophy as a way of thinking that emulates virtual infinity but remains less "dissipative" than chaos (or infinite speed) itself (Cooper 2002, 50). Recall that chaos is defined as the infinite speed with which every form coming to be vanishes, and then later, the infinite speed with which forms are born and die (WP 118). Chaos is characterized, therefore, by these two activities: one generative and one dissipative. Emulating infinite speed by means of concepts means making the generative aspect triumph, however briefly, over the dissipative. It involves preserving as conceptual components (colours, postures, songs) elements in their coming to be that would otherwise vanish all too quickly. Philosophers do this, in part, by creating concepts that gather together heterogeneous variations (e.g. of colors, postures, etc.) into a whole (still "fragmentary" because it is not a finished totality that coheres through a form of identity). This procedure increases the intelligibility for us of the process of becoming itself without abandoning it altogether (that is, without giving an illusory account of the genesis of form, as in the "realization" of possibles). I think it is no accident that when Deleuze and Guattari describe this process of approximating the speed of chaos with concepts, they adopt Epicurean
language: as the creation of concepts, philosophy "selects infinite movements of thought and is filled with concepts formed like consistent particles going as fast as thought" (WP 118). The components of a concept move "as fast as thought," or at "atomic speed," while chaos is unlimitedly fast "swerve speed."

As philosophers, Deleuze and Guattari are themselves creating a concept of what they believe philosophy is or ought to be, and what, in many cases, they think it descriptively has been. They are attempting to formalize another image of thought, in contrast to the image of thought with which *Difference and Repetition* polemicizes, and an alternative concept of philosophy, joined to another concept of concept. They think philosophy is defined by the creation of concepts. But that's not all. Philosophy's creation of concepts is always accompanied by the correlative constitution of what they call a "plane of immanence" (WP 35). They use a geometrical metaphor and describe it as a "secant plane" of virtual infinity, or a plane-section of chaos (WP 202; cf. F 76). Certain things Deleuze and Guattari say likewise indicate that this conception of the plane of immanence is also influenced by a reading of Epicurus.

Generally speaking, the best way to understand the plane of immanence is as a way of making explicit what remained all too implicit in the discussion of problematic ideas in *Difference and Repetition*, which is that problematic Ideas determine themselves in an intrinsic way, rather than being determined by some external agency or evaluated by external requirements. Deleuze and Guattari criticize previous philosophers for interpreting concepts in a way that stifled the possible link between concepts and the self-determination of problematic Ideas:

Philosophers have not been sufficiently concerned with the nature of the concept as philosophical reality. They have preferred to think of it as a given knowledge or representation that can be explained by the faculties able to form it (abstraction or generalization) or employ it (judgment). (WP 11)

Deleuze is being self-critical. This condemnation of philosophers for not examining concepts thoroughly enough applies to Deleuze's earlier treatment of concepts as forms of identity "deployed in representation." The creation of concepts Deleuze and Guattari valorize, in contrast to the orthodox procedure they describe here, is not the operation of a faculty imposing forms of identity (e.g., judgments) on multiplicities outside it. Rather, the philosophical creation of concepts respects their "self-positing" or "autopoetic characteristic" (WP 11). The requirement that concepts have this character is equivalent to the requirement that theories of problematic ideas shift from extrinsicism to intrinsicism. Concepts follow problems in their self-determination.

Deleuze and Guattari treat philosophy as coextensive with the construction of a plane of

immanence: "there is philosophy wherever there is immanence" (WP 43). Certain pre-Socratics were true philosophers, they think, to the extent that they conceived of order as immanent to a "cosmic milieu" such as Anaximander's "unlimited" (*to apeiron*) rather than imposed by a transcendent paradigm (WP 43). In particular, Deleuze and Guattari admire the plane of immanence constructed by Epicurus. While concepts create zones of consistency or inseparability among discrete elements, which Deleuze and Guattari call "fragmentary wholes," the plane of immanence is identified with another sort of whole, "a powerful Whole that, while remaining open, is not fragmented: an unlimited One-All" (WP 35). I have already noted that this description recalls Deleuze's description of Epicurean "Nature" from thirty years earlier: a principle of the diverse, whose production has the character of an "infinite sum" that doesn't totalize its elements (LS 267). This suggestion that the concept of the plane of immanence is indebted to Epicurus' conception of nature is confirmed when Deleuze and Guattari allude to Epicurus directly, once again to atoms moving as fast as thought (WP 38).⁴⁸

Deleuze and Guattari refer to Epicurus in the context of describing the originary motion of "infinite speed" as being always a "double" motion, in the sense that it is both a motion of thought and an actual motion of being: "It is in this sense that thinking and being are said to be one and the same" (WP 38). They claim Epicurean inspiration; in Epicurus "the plane of immanence has two facets as Thought and as Nature, as Nous and as Physis" (WP 38). In Chapter 1, I referred to the Stoics' ambition to offer a genetic account of how the two "series" of being and thought are produced by one shared metaphysical "surface" (or ontological stemma), the boundary between bodies and incorporeals. To the extent that Deleuze and Guattari characterize the Epicurean plane of immanence, the virtual infinity of infinite speed, as both *nous* and *phusis* I think they're implying that it shares the Stoics' ambition. The Stoic "surface" (the interface between corporeal and incorporeal) is the plane of Epicurean nature. To say that the Epicurean plane of immanence is both Nature and Thought, means that the Epicureans, like the Stoics, attempted to give a holistic explanation of the advent of thinking and of the natural world, rather than "naturalistically" deriving the former from the latter, or "idealistically" the latter from the former. This ambition to explain the genesis of nature and thought simultaneously is, in Deleuze's view, a typical feature of Hellenistic philosophy.

⁴⁸ Rodolphe Gasché has recently suggested that in *What is Philosophy?* the philosophical plane of immanence should be identified with the "Earth" (along the lines suggested in *Anti-Oedipus*) rather than "Nature." But the texts do not support this exclusive terminological usage, and the texts Gasché cites (e.g. WP 88; Gasché 2014, 92) seem to me more naturally to link "nature" and philosophy, or at least to be ambivalent (as Gasché himself recognizes, 2014, 115).

Motion, change, or becoming occurs at an infinite speed on this Epicurean plane of immanence—faster than the fastest thinkable speed (which would be the discontinuous traversal of one minimum of magnitude in one minimum of time). Concepts approximate this infinite speed of becoming but gain consistency by gathering together heterogeneous components to which the motion at infinite speed gives birth. While the speed of a concept is the speed of thought, this remains an approximation of an *even faster* speed, associated with the autopoetic self-positing of problems, and described in Epicureanism in terms of a mechanism of relation or synthesis anterior to relata (which is Deleuze's interpretation of the *clinamen*). Deleuze suggests that such a vision of philosophy inaugurates a new theory of relations and a new image of thought (WP 37). This is the alternative to the dogmatic image that Deleuze sought to articulate throughout his career because of the stress it lays on problems which animate thinking. The theory of concepts in What is *Philosophy*? is just one part of a new image of thought as a new theory of problems: "All concepts are connected to problems without which they would have no meaning" (WP 16). The theory of concepts outlines philosophy's role, but there are, of course, other kinds of thought that I have not mentioned, namely scientific and artistic. According to Deleuze and Guattari, these also "confront chaos" creatively by constituting their own "planes" different from the plane of immanence of philosophy (WP 197). The entirety of What is Philosophy? is devoted to formalizing this problematic, neo-Epicurean image of thought, which starts with the relation between thought and infinite speed (or chaos), which is sectioned by three different planes (corresponding to philosophy, science and art). The philosophical plane of immanence attempts to render consistent, in other words intelligible, the virtuality of the infinite without distorting its productive power, which means doing justice to the tendency of problems to determine themselves in novel ways.

This is all to say that Epicurus is important to the development of Deleuze's thought in *What is Philosophy?* toward the end of his life. My purpose here is not to defend Deleuze's concept of the "virtual" or Deleuze and Guattari's concept of "concept," but to show how these concepts fit into Deleuze's lifelong engagement with Hellenistic mediators. The genetic story Deleuze wants to tell about the diversity of entities, which transcendentally requires difference either as "non-being-that-is-in-a-sense" or as "virtually infinite speed," involves a critical appreciation of Hellenistic philosophers. Deleuze lionizes their theories in comparison to the Aristotelian tradition he disparages. The importance of the Stoics to Deleuze remains constant until the end—e.g., for Deleuze and Guattari, the correct way to explain the disciplinary and methodological differences

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between science and philosophy is in terms of the Stoic distinction "between, on the one hand, states of affairs or mixtures of bodies in which the event is actualized and, on the other, incorporeal events" (WP 127)—but the formulations of concepts and infinite speed in terms of events and incorporeals suggest that Deleuze and Guattari are putting Stoic concepts together with Epicurean ones in a way they think will be complementary. Perhaps they even believe it is possible to effect a kind of rapprochement between the Stoics and Epicureans, in that they both resist the Aristotelian tendency to think of coming-to-be in terms of identities and subordinate, relative differences (for example, species within a genus, or the hierarchical intensions of a traditional concept). The particularity of Deleuze and Guattari's appropriation of Epicurus lies in the notions of infinity and speed. Infinite speed means a kind of originary movement, a thing's becoming what it is, rather than the movement of a thing that has already come to be. Picking up speed in this way is explicitly Epicurean. Deleuze and Guattari refer to the "atomic speed" of the concept and the "swerve speed" of chaos.

The Epicureans, however, are no more above criticism than the Stoics. In Difference and *Repetition* Deleuze complains that the Epicureans lack an appropriately strong distinction between events and states of affairs, so that the Epicurean understanding of the immanent determination of problems (the swerve) is liable to degenerate into a claim concerning physical motive force. Despite Epicurus' effort to communicate the immanent auto-determination of the Idea implied by the swerve, atomism is all too easily construed as a thesis concerning relations among actual entities, rather than about their coming to be. This interpretation of atomism is in part a consequence of the limitations of Epicureanism itself: "the Epicurean atom still retains too much independence, a shape and an actuality. Reciprocal determination [i.e., the intrinsic determination implied by *clinamen*] here still has too much of the aspect of a spatio-temporal relation" (DR 184). Compare the criticisms in *The Logic of Sense*: unlike the Stoics, the Epicureans fail to distinguish appropriately between bodies and events (LS 6, 270). The Epicureans use the swerve to "cleave" the causal relation in a dramatically un-Stoic way. Rather than make causes bodies and effects events, they make the swerve (an event) a cause of the impacts among bodies. Consequently, the swerve looks like a figure of spatio-temporal or negative indeterminacy (as in Cicero, *De Fat.* 22) rather than positive indeterminacy. It's simply "not being caused" acting as if it were a cause. In turn, this appearance leads to interpretations of the swerve in terms of free-will or non-reductive physicalist psychology, approaches that Deleuze would consider to be off on the wrong foot. Putting the Stoics and Epicureans together as Deleuze and Guattari do in *What is Philosophy?*

appears designed to mitigate these limitations of Epicureanism.

CONCLUSION

In this chapter I discussed Deleuze's engagement with Epicurean concepts over the course of thirty years, from 1961 to 1991. I argued that the Epicurean defense of minima or infinitesimals, which is at odds with the conceptual alliance between Aristotelian metaphysics and Greek geometry, explains in part Deleuze's claim that Epicurean atomism is a problematic Idea. Epicurean minimism articulates an intuition that is difficult to comprehend from the perspective of conventional geometry. It is not so much that the hypothesis of minima destroys mathematics, as Aristotle and Cicero imply. Rather, it presents a productive insight, which, although strictly unscientific, is accommodated or appropriated by mainstream science. This makes it "problematic" rather than "theorematic," according to Proclus's distinction. In this respect, Deleuze thinks Epicurean atomism is analogous to other problematic approaches in the sciences, such as the early "barbaric" interpretations of the calculus. To understand the concept of the problematic, it was necessary to explain Deleuze's discussions of the problematic *Idea* in contrast to Kant's Ideas. For Deleuze, problems are different in kind from solutions and are in a sense anterior to them, having a productive vagueness that is not negative but positive. I argued that a criterion for Deleuzian problematicity can be isolated in *intrinsicism*, in contrast to "Kantian extrinsicism." Intrinsicism means the requirement that problems be allowed to determine themselves intrinsically or immanently, lest they be deformed into mere questions with a right or wrong answer by being determined according to extrinsic constraints (typically by being characterized negatively as undetermined, as in Kant).

I argued that intrinsic determination is specifically manifest in Epicureanism in the figure of the swerve that relates differential parts (minima) faster than the speed of thought. Since Epicurean minima are something like infinitesimals, Deleuze reads the Epicurean swerve as a relation between differentials, and thus an anticipation of the concept of the differential relation (dy/dx) endemic to interpretations of the calculus. The swerve is the Epicurean interpretation of the self-determination of problems because Epicurean Ideas are multiplicities of atoms and these multiplicities are effected by swerves. Like a "pre-scientific" interpreter of the mathematics of the calculus, Deleuze gives such determination a strongly metaphysical interpretation. The selfdetermination of problems (as in the differential relation dy/dx) plays a fundamental role. For Wronski, the differential relation engenders (rather than just represents) magnitude; for Lucretius, the swerve ensures the creativity of nature.

The speed of the Epicurean swerve returns in the infinite speed of chaos, the key to Deleuze and Guattari's climactic formalization of problematics. Both Diogenes Laertius and Sextus Empiricus recount the story of how Epicurus turned to philosophy after being disappointed that his teachers could not explain to him the meaning of "Chaos" in Hesiod's *Theogony* (D. L. 10.2; S.E. *M.* 10. 18-9). If Deleuze and Guattari's invocation of speed in *What is Philosophy?* is, as I have suggested, derived from a reading of Epicurus and Lucretius, and is consonant with Deleuze's interpretation of the swerve in other texts, as a primordial relation or creative indeterminacy prior to determinate relata, then the identification of "infinite speed" with "chaos" is probably also no accident. Deleuze and Guattari define chaos as infinite speed," faster than what Epicurus calls the "speed of thought." I interpreted this speed as the original motion by which things come to be, "infinite" in the sense that it's not limited by being the motion of anything that has already come to be.

In *What is Philosophy?* Deleuze and Guattari are attempting to formalize an alternative image of thought where problems play the main productive role. What does this formalization look like? It begins with problems in their self-determination. Philosophy's role in this scheme is to create concepts. I interpreted this idea as an application of Deleuze and Guattari's views about infinite speed or chaos. What they mean by concepts are approximations or emulations of the infinite speed of becoming that prolong or accentuate its creative aspect (at the expense of its destructive aspect) in order to make becoming more intelligible without sacrificing its originality—that is, without begging the question by making becoming a function of already formed entities, the fault Bergson and Deleuze diagnose with thinking in terms of "possibility." If that is indeed what Deleuze and Guattari mean by "concept," then it is quite distinct from Deleuze's use of that term throughout the rest of his work, where it stands for a form of identity that suppresses what is singular or different within its extension.

One other aspect of Deleuze and Guattari's alternative image of thought, which may cause consternation, is the way it identifies infinite speed with "the virtual." I explained this term in light of Deleuze's use of Bergson's criticisms of possibility as well as Simondon's thesis about "metastable" being. I also argued that the concept of the virtual thinking returns us to themes that were prominent in my first chapter about Deleuze's conception of events, for example the (Stoic or Platonic) difference between being and non-being-that-is-in-a-sense. Suggestively, Deleuze

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rehearses these themes using Epicurean concepts, the swerve in particular. If the swerve is like the reciprocal determination of dy/dx, then Deleuze takes this to mean that it represents the capacity of problems to determine themselves, rather than to be determined by extrinsic constraints. But he thinks that the swerve, for Epicurus a necessary condition of the creativity of nature, does not have the ontological status of an actuality. It is not the movement of entities that already are. Nor is it like a possibility in that it does not "resemble" the real that it conditions. Rather, the swerve is like a virtual event. That's why it occurs "faster than thought," or as Deleuze and Guattari put it later, at "infinite speed." Virtual means a transcendental condition (appealed to in transcendental arguments), but one that preserves the difference in kind between condition and conditioned necessary for real genesis. The swerve is virtual because it is a necessary condition of collisions and the creativity of nature, and so on, but not one that has the same modal status as the things conditioned. I've called this the "differential virtual," since Deleuze considers it an anticipation of the interpretation of the differential relation as "pure relation" or as qualitability before particular quantities. Deleuze also talks about another kind of "virtual," which I called the "integral virtual." This is Nature as an infinite sum of relations between infinitesimals, a vision of Nature Deleuze attributes to Epicurus, a "One-All" that is creative in dividing up into divergent lines. This is "virtual" because it is also a necessary presupposition—transcendentally required to explain the coming to be of actually existing things-but again different in kind from actually existing diversity. I end this dissertation with some discussion of the conception of Nature that Deleuze takes from all these Hellenistic mediators.

Conclusion

Arnaud Villani: *Phusis* seems to play a big role in your work. *Gilles Deleuze*: You are correct. I believe I'm circling around a certain idea of Nature, but I don't think I've come yet to consider that notion directly. – Deleuze, "Réponses à une série de questions"

Guattari and I want to get back to our joint work and produce a sort of philosophy of Nature, now that any distinction between nature and artifice is becoming blurred. – Deleuze, "On Philosophy"

THE PURPOSE OF this dissertation has been not only to show *that* Hellenistic mediators are implicated in the development of some of Deleuze's major concepts, but also *how* they are implicated. Each chapter has demonstrated how Deleuze's arguments about events, difference and problems refer or respond to particular Stoic, Aristotelian and Epicurean doctrines, respectively. For Deleuze, conceptual mediators are necessary for philosophizing creatively. The line between "doing" the history of philosophy and philosophy proper is not sharp, if it exists at all. So it's unsurprising that there's so much mediation in Deleuze's texts. What may be surprising is how prominent the Hellenistic mediators are, especially the Stoics and Epicureans.

In his "intellectual portraits" of philosophers, Deleuze says he wants to "maximally modify" their views, making them "philosophically bearded" or "clean-shaven" as the case may be, while still retaining a kind of baseline faithfulness. The subjects of his portraits must, after all, actually say what he has them say (N 5-6). The same goes for these Hellenistic mediators. Deleuze enlists them in his particular post-structuralist project, and may seem to impute views to them which it is uncommon, or even unreasonable, to impute. I think I have shown, however, that the Stoics, Aristotle and the Epicureans do say what Deleuze has them say after all, perhaps more so than has been perceived. They may have had their beards trimmed but they're not thereby different philosophers.

The first chapter of this dissertation argued that the theory of events of *The Logic of Sense*, which Deleuze never substantially abandoned (although he freely supplemented it), is derived in large part from the ancient Stoics. Despite adding a healthy dose of twentieth-century structuralism

to the mix, Deleuze's reading of the Stoics is not indefensible. In fact, it is consonant with warier interpretations offered by well-regarded contemporary interpreters. For example, although the construal of Stoic *lekta* as supporting a non-referential theory of semantics appears unlikely to succeed, the interpretation of *lekta* as events is well supported. The Stoics supply a conception of the compatibilities and incompatibilities among events independent of conceptual entailment or physical causality. Deleuze thinks this enables them to avoid treating events as the sterile byproduct of relations among bodies and to treat them instead as possessing a certain power in relation to one another, embodied in conjunctive and disjunctive syntheses. This is a positive conception of events, as opposed to a negative one that would treat some events as contradictory from the point of view of general concepts. Such syntheses model the "truth" (productivity) of problems that interests Deleuze more than the theory of truth as correspondence or mirroring. This conception of affirmative syntheses is important to Deleuze's conception of nature as fundamentally conjunctive, as I will explain in a moment. In Chapter 1 I also argued that the independence of events and their quasi-causal relations among one another can be understood in terms of the influence of historical contingency on thought. Relations among the senses of terms arise from irreducibly contingent historical relations. Strangely, the Stoics recognized this contingency in the context of their defense of fate.

In Chapter 2 I showed how Deleuze's claim that "being is difference" derives from his understanding of non-being arising from Plato's *Sophist*. In Deleuze the non-being ("?-being") of difference, or what he calls the "being of the problematic," is something like what the dialogue's interlocutors identify as "non-being that is in a sense, as difference." Deleuze and Plato diverge, however, when Plato insists that difference be predicated only relatively (*pros allo*), never in its own right or absolutely (*auto kath 'hauto*). For Plato, saying that something is different always involves a reference to something from which it is different. Deleuze thinks this relative way of talking about difference is characteristic of the Western philosophical tradition ever since, being as it were canonized by Aristotle's conception of difference as *differentia*, that is, as relative to the identity of a univocal genus. The view that Aristotle relativizes difference to identity is, however, complicated by his admission that *being* is not a genus, which implies that differences in being can't be understood on the simple model of univocity (being said in one sense only in relation to a genus). Nevertheless, I have argued that Aristotle's doctrine of the homonymy or equivocity of being should be seen as an elaborate prophylactic against recognizing a non-relative or absolutized sense of difference.

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Deleuze collapses this conception of homonymy into the doctrine of analogy, and then insists that Aristotle's theory of analogy reintroduces the assumption that being is identity after all, though now identity in representation. This interpretation of Aristotle's doctrine of being raises more of a challenge than is typically recognized. Deleuze says that the *pros hen* or focally organized homonymy that Aristotle attributes to being relates differences in being to the same "distributive unity" as Aristotle's doctrine of analogy does, even though analogy and homonymy are obviously distinct things in Aristotle. The best sense we can make of this, I claimed, is that Deleuze must think that the distributive unity of being, "in representation" or "in judgment" (as he puts it) is licensed by Aristotle's failure to prove core-dependent homonymy in the case of being. Like Christopher Shields, Deleuze thinks Aristotle doesn't establish the pros hen homonymy he claims to. While Shields thinks that Aristotle's account fails because Aristotle can't prove that being isn't univocal, Deleuze thinks it fails because Aristotle can't demonstrate that being isn't excessively plurivocal. Different senses of being have nothing in common, so the relations among them are similar to the relations among distinct genera, which Aristotle thinks are related only by analogy. Although I don't believe Deleuze makes this argument in Difference and Repetition, I believe it must be made in order for his criticisms of Aristotle to succeed.

Aristotle's doctrine of being is joined to his conception of nature and matter. Aristotelian matter is well behaved in its subordination to the forms or identities actualized in natural processes. Observable natural processes express this docility of matter. An alternative construal of such natural processes in Deleuze and Guattari—what they call "stratification"—shows that Aristotle's conception of matter and nature depends on an illusion whereby the products of a process are taken to be its principles. By comparing Deleuzoguattarian stratification with some of its theoretical source-material (Simondon's work on physicochemical individuation), I concluded that the conception of natural processes as stratifications (rather than the actualization of form) entails a novel ontological thesis: being resembles a *supersaturated* solution, or more generally, a metastable system. Such a state or system involves not one but two "scales of heterogeneous reality" and allows a real "problematic field" to emerge. For example, in the case of a supersaturated solution like carbonated water, these two scales are the actual intensive conditions in which CO₂ is dissolved in solution (e.g., at high pressure), on the one hand, and the solute's and solvent's virtual capacities for dissolving and being dissolved, on the other.

These two heterogeneous parts or aspects of "reality" become important for an alternative, anti-Aristotelian conception of nature. I address them directly in my third chapter on Epicureanism,

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where I argued that Epicureanism is "problematic" for two reasons. First it is problematic in an epistemological sense, because the particular Epicurean geometrical theses associated with the doctrine of minima are *prima facie* inconsistent with ancient Greek geometrical orthodoxy, but nevertheless provide the inspiration for developments in mainstream Greek science. Epicureanism is also problematic in an ontological sense. With the *clinamen* or tendency of atomic compounds to aggregate, Epicurean atomism emerges as a theory of the intrinsic determination of Ideas, an ancient analogue of the interpretation of the calculus according to which the differential relation embodies a pure qualitative relation independent of quantification. Deleuze admires such "intrinsicism" for two reasons. First, it allows him to talk about problematic Ideas without recourse to Kant's conception of Ideas, which characterizes them as undetermined in relation that does not depend on a supplementary dimension, or extrinsic metric, for identity. Intrinsicism thus makes determination more expansive than the relative determination (with the supplementary, extrinsic dimension of identity), which is a local variant of it.

Experience presents us with problems, encounters that rouse our thinking from its conventional stupidity and stimulate its creativity. Such problems belong to real experience, as opposed to Kantian "possible experience," only on the condition that problems (or problematic Ideas) are not characterized negatively but are instead attributed some positive status. Deleuze uses the term "virtuality" to talk about the conditions under which problems can be treated as positive or productive. The concept of virtuality is bound up with Bergson's critique of possibility. Virtuality expresses the capacities of natural systems for unforeseeable change while possibility represses them. More generally, I argued, the virtual denotes a condition that does not resemble what it conditions and is thus, Deleuze thinks, necessary for conditioning to be genuinely productive. Such productive conditioning can be either epistemological or ontological. As I read him, Deleuze contends that the transcendental conditions of problems are events, which are usually glossed as "virtual." The fact that the conditions of problems are virtual events is what guarantees that real experience can contain genuine problems or problematic Ideas, which it "encounters," instead of such Ideas lying beyond possible experience. We can encounter something that animates our thinking because the condition of this thing we encounter-what it presupposes-is something that doesn't resemble it at all. If this were not the case, we would not be able to encounter it as a problem, as something that we don't recognize. We would simply recognize it. This is the case in

Kant for whom "possible experience," organized by categories we are familiar with, is a totality. It is all we can ever hope to experience.

So Deleuze thinks virtuality has a kind of epistemological value (or a "noological" value relating to the study of images of thought). It also has an ontological value, in that virtuality is the "heterogeneous aspect" of reality that enables us to think about individuation in, so to speak, epigenetic rather than preformationist terms (i.e., not in terms of the anticipated formed individual), as "stratification" rather than the realization of possibilities that are, as it were, stored up in a "cupboard" before the fact, or the actualization of Aristotelian potentials that "yearn for" or anticipate their formal actualities.

The insight of Deleuze's conception of virtuality is to knit together the epistemological and physical registers. Such interpenetration of thought and nature is typical of Deleuze's thinking. For example, Deleuze uses concepts from Epicurean physics, like the swerve, to illuminate the notion of a problematic Idea, a concept crucial to the new image of thought. Deleuze and Guattari also say that the Epicurean "plane of immanence"-that is, the condition in which problems are allowed to determine themselves rather than being limited by a transcendent paradigm—may with equal validity be called both "nature" and "thought." Throughout this thesis I have sought to show that the structure of Deleuze's arguments is isomorphic in the discussion of problematic ideas in Difference and Repetition, affirmative disjunctions in The Logic of Sense, and the autodetermination of concepts in What is Philosophy? I said that Deleuze's ambitions are everywhere to give a *genetic* account: of corporeal states of affairs in terms of events, identity in terms of difference, solutions in terms of problems. This would be an account of coming-to-be in a way that doesn't appeal to entities that have already come to be. We can redescribe all of this in the language of Anti-Oedipus, a book I have not talked about at all, but which includes some equally isomorphic arguments. Deleuze and Guattari treat production in general as primary rather than in terms of already produced entitites. Such production in general would include both the "truth" of problems, their quality of generating novel lines of reasoning, and the "infinite speed" of becoming, unlimited by any entity that already is. Such production is just identified with both nature and thinker: "we make no distinction between man and nature ... rather they are one and the same essential reality, the producer-product" (AO 4-5). This redescription supports my general methodological commitment here that it is artificial to treat Deleuze's noology (the study of images of thought) and philosophical physics (the study of images of nature) in isolation from one another.

Although many scholars recognize the importance of noology for understanding Deleuze's enterprise, a Deleuzian philosophy of nature is not so well recognized. This is probably because he "circles around" (*tourne autour*) a conception of *phusis* without articulating it directly. There have been only some hints about Deleuze's philosophy of nature among scholars. For example, Montebello and Dosse have both talked about how Deleuze represents an "*autre métaphysique*," which is a kind of philosophy of nature that integrates an account of the emergence of thinking and human intelligence rather than taking its forms of rationality for granted (Montebello 2003, 12, 19, 76; Dosse 2010, 166, 522-3). However, Montebello's book is about trends in intellectual history (themes in Schopenhauer, Tarde, Nietzsche and Bergson), and not especially about Deleuze. Gasché more concretely recognizes that *What is Philosophy?* contains an oblique but sophisticated discussion of nature according to which nature is something like philosophy's autochthonous milieu (Gasché 2014). Even so, the obliquity of the discussion of nature there has caused interpretive ambiguities (see above, Chapter 3, n. 45), and in any case Gasché is only talking about *What is Philosophy?*, not Deleuze's work in general. He even omits to mention Epicurus in his discussion of speed and of planes of immanence, where I think Epicurus is crucial.

A number of scholars have recognized how Deleuze's philosophy involves the realistic affirmation of the virtual, which I evoke in my third chapter, and that the virtual is not just some ideal dimension but is demonstrably involved in the actuality of natural processes. For example, De Landa thinks that Deleuze's virtual can do a lot of explanatory work in the context of modern understanding of the nonlinear dynamics of natural processes. He says that physical systems have "an actual part, the components that actually interact to yield emergent properties, and a *virtual* part, the universal singularities and symmetries that structure its associated possibility space" (2010, 91). One of his neatest illustrations of this idea presents the processes of differentiation of atoms of different elements in terms of the virtual "possibility space" of orbital forms (orientations with decreasing symmetry) (2010, 83-93). Notably, De Landa recognizes that the "virtual part" of a real entity is its *structure*, a term he uses with its specifically Deleuzian overtones. Others recognize the promise of Deleuzian virtuality for reconciling philosophy and the sciences, particularly those that study natural processes occurring in or around the human scale—those which Aristotle would or could have been aware of (Montebello 2003, 23; Shaviro 2009, 35). No one, however, has commented on the systematic relationship between Deleuze's philosophical physics and his reading of the ancient Greeks. Deleuze develops his conception of nature through the mediation of the Hellenistic philosophies I have examined.

AND

Just as there is a new conception of *thought* at work in Deleuze (what he calls "nomad thought" distinct from the well-behaved dogmatic image of thought), there is a complementary conception of nature. It remains to show finally how the conception of nature is expressed by Deleuze in his own "unmediated" voice (so far as that is possible). I want to pick up what I've said about conjunction, especially how it changes our way of thinking about relations. Conjunction is one trope that shows the link between *nous* and *phusis*, noology and physics. In the introduction I noted that Deleuze's esteem for empiricism has to do with how empiricism involves a "theory and practice of relations, of the AND" (D 14-15), which I linked to my historiographical notion that the history of philosophy presents a flux of concepts and problems that galvanize thinking. The little word "and," as the sign of conjunctive synthesis, is crucial to Deleuze's alternative image of thought; there is no thinking that isn't provoked, moved to action or brought to life, by its conjunctions with the external, the unexpected or unprefigured. I want to describe the parallel alternative conception of nature in the same way.

Whenever Deleuze mentions nature he describes it as *paratactic*. I use the term to evoke Deleuze's many characterizations of nature as "expressing itself through 'and' rather than 'is'." The contrast between "and" and "is" is, I think, something like the contrast between parataxis and hypotaxis in grammar. Hypotaxis is the principle of hierarchization. For example, language containing subordinate clauses and subordinating conjunctions (like *comme* in French and *since* in English) is called hypotactic. "And" is, in contrast, the paradigm of a coordinating conjunction, and characterizes paratactic language by linking multiple terms or phrases with connections that are non-hierarchical.

The difference between "is" and "and" is for Deleuze more general than this grammatical distinction. The contrast between "and" and "is" is a way to talk about the whole history of the philosophical conception of relations. Deleuze thinks that philosophy has usually followed grammar, as well as the whole of syllogistic logic, in working to subordinate relations, or to make all relations subordinations (D 57). According to this way of thinking, even though conjunction is what "subtends all relations" (D 57), it takes a back seat to hypotaxis and one very particular kind of relation, namely that of falling under a class. When something is said to fall under a class, it is said *relative* to that class, relative to the *identity* of the class, and it becomes hard to speak about it in any other way.

Arnaud Villani is right, at least in part, to see in Deleuze's ambition to "substitute the AND for the IS" (D 57) a rejection of Aristotelian (category) logic in favour of (something like) Stoic propositional or statement logic (1999). But if Villani's point is supposed to be that category logic should be made a proper subset of statement logic (the strategy of modern logic since Frege), then this construal distorts Deleuze's view. For, as Deleuze puts it:

It is not enough to create a logic of relations, to recognize the rights of the judgment of relation as an autonomous sphere, distinct from judgments of existence and attribution. For nothing as yet prevents relations as they are detected in conjunctions ... from remaining subordinate to the verb to be. (D 56-7)

In fact, "recognizing the rights of the judgment of relation" is precisely what Deleuze accuses Aristotle of doing in the context of the philosophy of difference. Although Aristotle recognizes that differences in being are not related to a unified genus, he tries to unify them by analogy in representation, or in judgment, as Deleuze says. Instead of locating the transcendental condition of experience in judgment or representation, Deleuze argues we need to find the transcendental condition of relation in general (and experience as a kind of relation) in paratactic conjunction which is to say in *difference itself*. He proceeds by way of a transcendental argument that should sound familiar:

The AND is not even a specific relation or conjunction, it is that which subtends all relations, the path of all relations, which makes relations shoot outside their terms and outside the set of their terms, and outside everything which could be determined as Being, One, or Whole. (D 57)

In other words, the "and" of difference is presupposed by the diversity of relations (recall, "Diversity is given, but difference is that by which the given is given ... as diverse": DR 222). As if there were any doubt that the argument about "and" here recapitulates the (transcendental) arguments about difference in *Difference and Repetition*, Deleuze adds: "The AND as extra-being, inter-being" (D 57). In other words, the "and" is non-being-that-is-in-a-sense as difference, ?-being, or the "being of the problematic" (cf. DR 63).

This critique of logic is still, however, a characterization of thought. What about nature? In my view, Deleuze never substantially abandoned his early (1961) Epicurean characterization of *phusis* as a kind of integration of differentials or minimal relations: "Nature as the production of the diverse can only be an infinite sum, that is, a sum which does not totalize its own elements." The passage continues, "Nature is not attributive, but rather conjunctive: it expresses itself through 'and,' and not through 'is'" (LS 267). Why does Deleuze say that nature is conjunctive and not "attributive"? He is imputing to Epicurean nature a corollary of the position he later calls the Stoic

theory of events. In *The Fold*, Deleuze says Leibniz is very close to the Stoics in that both displace the verb "to be" in a "radical critique of the attributive scheme" (F 76; cf. D 64). In other words, the Stoics provide a logic alternative to that which subordinates relations to the logical function of the copula. Deleuze says the difference lies in the way that the Stoics (and Leibniz) treat predicates as events rather than attributes (F 53). Attributes are linked to subjects by the copula. Events, on the other hand, are aspects or "manners of being." For the Stoics, the usual understanding of predication, where the copula links a subject to an attribute (for example, "the tree is green") implies that the subject persists unchanged by the application of the predicate, or that it remains in principle separable. This is a misleading implication of the grammatical form that is then canonized in syllogistic logic. When, alternatively, predication is expressed in something like the form "the tree greens," the unwelcome implication is lessened. Rather than an attribute attributed to a subject or a state of being, a predicate becomes a movement or change (F 53) and the self-identity and stability of the (logical-grammatical) subject is no longer implied.

The contrast with the schema of "attribution" highlights how Stoic logic doesn't assume a stable subject to which predicates are merely relative attributes (which Deleuze explicitly compares to Aristotelian accidents, F 53). In fact, Deleuze goes further in this alternative to the logic of attribution. The predicate is no more stable than the subject; the logic of events depicts a more fluid situation, a "subject already modified by what links it to the proposition, and a *verbal, mobile*, indeterminable object" (Villani 1999, 96). As Deleuze puts it, the error of attribution lies in failing to recognize that "I can no more reduce 'I travel' to 'I am a traveling being' than I can reduce 'I think' to 'I am a thinking being." He continues, "Thought is not a constant attribute, but a predicate passing endlessly from one thought to another" (F 53). This inconstancy must apply to all predicates. Deleuze's point is that "reducing" propositions like "I think" to attributions like "I am a thinking being" or "there is an x such that it thinks," is to misunderstand the production of both subject and predicate in the process of their genesis.

This logical (or noological) error exposed by the Stoic logic of events is equally an error in understanding nature corrected by the Epicurean conception of conjunctive nature. Whenever Deleuze contrasts "and" and "is," even in the physical register, the contrast is implicitly with attribution. Deleuze and Guattari indicate as much in some of their most famous passages about the "rhizome." The rhizome is a conjunctive image of both thought and nature in contrast to the attributive "arboreal" image of thought, where changes are always attributed or related to subjects of the change: The tree is already the image of the world, or the root the image of the world-tree. ... One becomes two: whenever we encounter this formula ... what we have before us is the most classical and well reflected, oldest and weariest kind of thought. Nature doesn't work that way: in nature, roots are taproots with a more multiple, lateral, and circular system of ramification, rather than a dichotomous one. Thought lags behind nature. (TP 5)

This reference to a "rhizome" is their shorthand for the way natural processes are like stratifications, relations between differences that don't lose their difference in being related to one another. An arboreal conception of nature, by contrast, is similar to an attributive conception of thought—as if natural changes were always modifications *of* a subject and relative to it, or as if predicates were always predicated *of* something stable and enduring, with a self-sufficient identity independent of what is attributed to it. Yet relations in nature, if they are going to explain the genesis of natural entities, need to be understood as paratactic rather than hypotactic; they do not subordinate differential elements to a dominant or substantial thing in itself. Instead, the rhizome, the model natural system is, like the Stoic logic of events, conjunctive:

The tree imposes the verb 'to be,' but the fabric of the rhizome is the conjunction, 'and ... and ... and ...'. This conjunction carries enough force to shake and uproot the verb 'to be.' (TP 25)

This "noological" image of thought (as rhizomatic rather than arborescent) is no less a theory of nature. Just as the possibilities of thought are not exhausted in its dogmatic image, relations in nature are not restricted a priori to the changes that befall a unified, self-identical, completely actual thing in itself. As Deleuze and Guattari put it, "Nature doesn't work that way."

BIBLIOGRAPHY

PRIMARY SOURCES

[I have used the standard in-text abbreviations for works by Plato, Aristotle and Cicero (e.g., *Soph.*, *Phys.*, and *De Fat*). I have also noted wherever my translations of the Greek and Latin diverge from the ones cited here.]

- Alexander of Aphrodisias. Alexander Aphrodisias on Stoic Physics: A Study of the De Mixtione with Preliminary Essays, Text, Translation and Commentary. Trans. Robert B. Todd. Leiden: Brill.
- Archimedes. "On the Equilibrium of Planes." In *The Works of Archimedes*. Trans. Thomas Heath. Digireads, 2010.
- ------ "On the Sphere and Cylinder." In *The Works of Archimedes*.
- ------ "Quadrature of the Parabola." In The Works of Archimedes.
- ------ "The Method Treating of Mechanical Problems." In The Works of Archimedes.
- Aristotle, "Categories." Trans. J. L. Ackrill. In *The Complete Works of Aristotle*. Ed. J. Barnes. Princeton: Princeton University Press, 1984.
- ------ "De Interpretatione." Trans. J. L. Ackrill. In Complete Works.
- ------ "Generation of Animals." Trans. A. Platt. In Complete Works.
- ------ "History of Animals." Trans. d"A. W. Thompson. In Complete Works.
- ------ "On the Heavens." Trans. J. L. Stocks. In Complete Work.
- ------ "On Generation and Corruption." Trans. H. H. Joachim. In Complete Works.
- ------ "On the Soul." Trans. J. A. Smith. In Complete Works.
- ------- "Metaphysics." Trans. W. D. Ross. In Complete Works.
- ------ "Parts of Animals." Trans. W. Ogle. In Complete Works.
- ------ "Physics." Trans. R. P. Hardie and R. K. Gaye. In Complete Works.

- ------ "Prior Analytics." Trans. A. J. Jenkinson. In Complete Works.
- ------ "Progression of Animals." Trans. A. S. L. Farquharson. In Complete Works.
- ------ "Sense and Sensibilia." Trans. J. I. Beare. In Complete Works.
- ------ "Sophistical Refutations." Trans. W. A. Pickard-Cambridge. In Complete Works.
- ------ "Topics." Trans. W. A. Pickard-Cambridge. In Complete Works.
- Augustine. *City of God: Volume 1, Books 1-3*. Trans. George E. McCracken. Cambridge, MA: Loeb.
- Cicero. On Academic Scepticism [Academica]. Trans. C. Brittain. Indianapolis: Hackett, 2006.
- "On Divination" [*De divinatione*] Trans. W. A. Falconer. In *Cicero: On Old Age. On Friendship. On Divination.* Cambridge, MA: Loeb.
- ------ On Ends [De finibus]. Trans. H. Rackham. Cambridge, MA: Loeb.

 "On Fate [De fato]." Trans. H. Rackham. In Cicero: On the Orator: Book 3. On Fate.
Stoic Paradoxes. On the Divisions of Oratory. Cambridge, MA: Loeb.
 "On the Nature of the Gods [De natura deorum]." Trans. H. Rackham. In Cicero: On
the Nature of the Gods and Academics. Cambridge, MA: Loeb.
 "Stoic Paradoxes [Paradoxa Stoicorum]." Trans. H. Rackham. In Cicero: On the
Orator: Book 3. On Fate. Stoic Paradoxes. On the Divisions of Oratory. Cambridge, MA:

_ ...

Loeb.

- Clement of Alexandria. *Clementis Alexandri Opera, Vol. III*. Ed. W. Dindorf. Oxford: Clarendon Press: 1869.
- Diogenes of Oinoanda. *The Philosophical Inscription of Diogenes of Oinoanda*. Ed. M. F. Smith. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1996.
- Epictetus. Discourses and Encheiridion: 2 vols. Trans. W. A. Oldfather. Cambridge, MA: Loeb.
- Epicurus. "Letter to Herodotus." [= D.L. 10.34-83] In *Hellenistic Philosophy*. Eds. Brad Inwood and L.P. Gerson. Indianapolis: Hackett, 1997.
- Euclid. *Euclid in Greek, Book 1 of the Elements*. Trans. T. L. Heath. Cambridge: Cambridge University Press, 1920.
- Lucretius. On the Nature of Things [De rerum natura]. Trans. W. H. D. House, rev. M. F. Smith. Cambridge, MA: Loeb. [=DRN]
- Plato. "Meno." Trans. G. M. A. Grube. In *Plato: Complete Works*. Ed. John M. Cooper. Indianapolis: Hackett.
- ------ "Parmenides." Trans. Mary Louise Gill and Paul Ryan. In Plato: Complete Works.
- ------ "Phaedo." Trans. G. M. A. Grube. In Plato: Complete Works.
- ------ "Republic." Trans. G. M. A. Grube, rev. C. D. C. Reeve. In Plato: Complete Works.
- ------ "Sophist." Trans. Nicholas P. White. In Plato: Complete Works.
- ------ "Theaetetus." Trans. M. J. Levett, rev. Myles Burnyeat. In Plato: Complete Works.
- ------ "Timaeus." Trans. Donald J. Zeyl. In Plato: Complete Works.
- Plotinus. *Plotini Opera: 3 vols*. Eds. P. Henry and H.-R. Schwyzer. Oxford: Clarendon Press, 1964-1982.
- Plutarch. "Reply to Colotes." Trans. Benedict Einarson. In *Moralia XIV*, Cambridge, MA: Loeb.
 ——— "Against the Stoics on Common Conceptions." Trans. H. Cherniss. In *Moralia XIII*, Vol. II, Cambridge, MA: Loeb.
- "On Stoic Self-Contradictions." Trans. H. Cherniss. In *Moralia XIII*, Vol. II, Cambridge, MA: Loeb.

 Porphyri isagoge et in Aristotelis categorias commentarium. Ed. A. Busse. Berlin: 1887. Translated as *Porphyry: Introduction* by Jonathan Barnes. Oxford: Clarendon, 2003.
 —— *Porphyrii sententiae ad intelligibilia ducentes*. Ed. Erich Lamberz. Leibzig: Teubner, 1975.

- Posidonius: *Posidonius: The Fragments (2 Vols.)*. Eds. L. Edelstein and I. G. Kidd. New York: Cambridge University Press. 2004.
- Proclus. A Commentary on the First Book of Euclid's Elements. Trans. Glenn R. Morrow. Princeton: Princeton University Press, 1992.
 - *The Platonic Theology.* Ed. Thomas Taylor. Kew Gardens, NY: Selene Press, 1985.
- Simplicius. *In Aristotelis categorias commentarium*. Ed. C. Kalbfleisch. Berlin, 1907. Translated in part as *On Aristotle's Categories 1-4* by Michael Chase. Ithaca NY: Cornell University Press, 2003.
- In Aristotelis physicorum commentaria libros quattuor priores. Ed. H. Diels. Berlin, 1882. Translated in part as Simplicius: On Aristotle's Physics 3, by J. O. Urmson (London: Bloomsbury, 2002) and in part as On Aristotle Physics 1.3-4 by P. Huby and C. C. W. Taylor (Bristol: Bristol Classical Press, 2011).
- ——— In Aristotelis de caelo. Ed. I. L. Heiberg. Berlin, 1894. Translated in part as Simplicius: On Aristotle On the Heavens 1.5-9 by R. J. Hankinson. London: Bloomsbury, 2004.
- Thomas Aquinas. Commentary on the Metaphysics of Aristotle. Trans. John Patrick Rowan. Chicago: H. Regnery Company, 1961.
- ----- On Being and Essence [De ente et essentia]. Trans. A. Maurer. Toronto: Pontificial Institute of Medieval Studies, 1983.
- ------ Quastiones disputatae 1: De veritate. Ed. Raymundi Spiazzi. Rome: Marietti, 1953.
- *—— Summa Theologiae: 4 Vols.* Ed. Peter Caramello. Turin and Rome: Marietti, 1948-52.

SECONDARY SOURCES

 Aarons, Kieran 2012. "The Involuntarist Image of Thought." In François Zourabichvili, *Deleuze: A Philosophy of the Event* together with *The Vocabulary of Deleuze*. Eds. Gregg Lambert and Daniel W. Smith. Trans. K. Aarons. Edinburgh: Edinburgh University Press. 1-18.

- Ackrill, J. L. 1957 "Plato and the copula: *Sophist* 251-59." *The Journal of Hellenic Studies* 77: 1-6.
- Allen, Barry 1993. Truth in Philosophy. Cambridge, MA: Harvard University Press.
- Alliez, Éric 2004. *The Signature of the World: What is Deleuze and Guattari's Philosophy?* Trans. E. R. Albert and A. Toscano. New York: Continuum.
- Ansell Pearson, Keith 1999. *Germinal Life: The Difference and Repetition of Deleuze*. New York: Routledge.
- Antonioli, Manola. 1999. Deleuze et l'histoire de la philosophie. Paris: Kimé.
- Asmis, Elizabeth 2009 "Epicurean Empiricism." In *The Cambridge Companion to Epicureanism*. Ed. James Warren. Cambridge: Cambridge University Press. 84-104.
- Atherton, Catherine 1993. The Stoics on Ambiguity. New York: Cambridge University Press.

Aubenque, Pierre 1962. Le problème de l'être chez Aristote. Paris: Presses universitaires de la France.

—— 1978 "Les origines de la doctrine de l'analogie de l'être: sur l'histoire d'un contresens."

Les Etudes philosophiques 33/1: 3-12.

- Balme, David M. 1962 "ΓΕΝΟΣ and ΕΙΔΟΣ in Aristotle's biology." *Classical Quarterly* XII (New Series): 81-98.
- 1987b "Aristotle's Use of Division and Differentiae." In *Philosophical Issues in Aristotle's Biology*. Eds. Allan Gotthelf and James G. Lennox. New York: Cambridge University Press. 69-89.
- 1987c "Aristotle's biology was not essentialist." In *Philosophical Issues in Aristotle's Biology*. Eds. Allan Gotthelf and James G. Lennox. New York: Cambridge University Press. 291-305.
- Barnes, Jonathan 1995a. "Life and work." In *The Cambridge Companion to Aristotle*. Ed. Jonathan Barnes. New York: Cambridge University Press. 1-26.
- Baugh, Bruce 1992. "Transcendental Empiricism: Deleuze's response to Hegel." *Man and World* 25: 133-48.
- Bénatouïl, Thomas 2002 "L'histoire de la philosophie: de l'art du portrait au collage." *Le Magazine Littéraire, Dossier: l'effet Deleuze*, February 2002, 35-6.
- Bennett, Jonathan 1974. *Kant's Dialectic*. Cambridge: Cambridge University Press.
 —— 1979. "Analytic Transcendental Arguments" In *Transcendental Arguments and Science*. Eds. P. Bieri et al. Dordrecht: Reidel, 45–64.

- Metaphysics. Trans. Mabelle L. Andison. New York: Dover. 73-86.
- Betegh, Gabór 2006. "Epicurus' Argument for Atomism." Oxford Studies in Ancient Philosophy 30: 262-84.
- Blackburn, Simon and Alan Code. 1978. "The Power of Russell's Criticism of Frege: 'On Denoting' pp. 48-50." *Analysis* 38.2: 65-77.

Bobzien, Suzanne 1998. Determinism and Freedom in Stoic Philosophy. Oxford: Clarendon.

- 2000 "Did Epicurus Discover the Free Will Problem?" Oxford Studies in Ancient *Philosophy* 19: 287-339.
- ——— 2002 "Chrysippus and the Epistemic Theory of Vagueness" *Proceedings of the Aristotelian Society* 102: 217-38.
- Boeri, Marcelo D. 2001. "The Stoics on Bodies and Incorporeals." *The Review of Metaphysics* 54.4: 723-52.
- Bogue, Ronald 1989. Deleuze and Guattari. New York: Routledge.
- Bonevac, Daniel and Josh Dever 2012. "A History of the Connectives." In *Logic: A History of its Central Concepts*. Eds. D. M. Gabbay et al. New York: North Holland. 175-234.
- Boundas, Constantin V. 1996. "Deleuze-Bergson: An Ontology of the Virtual." In *Gilles Deleuze: Critical Reader*. Ed. Paul Patton. Oxford: Blackwell. 51-77.
- 2005. "The art of begetting monsters: the unnatural nuptials of Deleuze and Kant." In *Current Continental Theory and Modern Philosophy*. Ed. S. H. Daniel. Northwestern UP. 254-80.
- Bowden, Sean 2011. The Priority of Events: Deleuze's Logic of Sense. Edinburgh: Edinburgh

University Press.

- Boyer, Carl B. 1959. *The History of the Calculus and its Conceptual Development*. New York: Dover.
- Bréhier, Émile (1928) 1997. La Théorie des incorporels dans l'ancien stoïcisme. Paris: Vrin.
- Brown, Lesley. 1986 "Being in the Sophist: A Syntactical Enquiry." Oxford Studies in Ancient Philosophy 4: 49-70.
- Brunschwig, Jacques 1994. "The Stoic Theory of the Supreme Genus and Platonic Ontology." In *Papers in Hellenistic Philosophy*. Trans. J. Lloyd. Cambridge: Cambridge University Press. 92-157.
- Bryant, Levi R. 2008. *Difference and Givenness: Deleuze's Transcendental Empiricism and the Ontology of Immanence*. Evanston, IL: Northwestern University Press.
- Buchanan, Ian 2007. "Deleuze and the Internet." *Australian Humanities Review* 43. < http://www.australianhumanitiesreview.org/archive/Issue-December-2007/Buchanan.html>
- Burnyeat, Myles. 1992 "Is an Aristotelian Philosophy of Mind Still Credible? (A Draft)" In *Essays on Aristotle's* De Anima. Eds. M. Nussbaum and A. O. Rorty. Oxford: Oxford University Press. 15–26.
- Cassin, Barbara 1980. *Si Parménide: le traité anonyme De Melisso, Xenophane, Gorgia.* Lille: Publications de l'Université de Lille.
- Cassou-Noguès, Pierre 2010. "Virtual Platonisms: Lautman and Gödel." In *Postanalytic and Metacontinental: Crossing Disciplinary Divides*. Eds. J. Reynolds et al. New York: Continuum. 216-35.
- Caston, Victor 1999. "Something and Nothing: The Stoics on Concepts and Universals." Oxford Studies in Ancient Philosophy 17: 145-213.
- 2002. "Gorgias on Thought and its Objects." In *Presocratic philosophy: Essays in honor of Alexander Mourelatos*. Ed. V. Caston. Aldershot: Ashgate. 205-32.
- 2005 "The Spirit and the Letter: Aristotle on Perception." In *Metaphysics, Soul, and Ethics in Ancient Thought: Themes from the Work of Richard Sorabji.* Ed. Ricardo Salles. Oxford: Oxford University Press. 245-320.
- Chase, James and Jack Reynolds 2010. "The Fate of Transcendental Reasoning in Contemporary Philosophy." In *Postanalytic and Metacontinental: Crossing Disciplinary Divides*. Eds. J. Reynolds et al. New York: Continuum. 27-52.
- Collingwood, R. G. 1945. The Idea of Nature. New York: Oxford University Press.
- Cooper, John M. 2009. "Chrysippus on Physical Elements." In *God and Cosmos in Stoicism*. Ed. Ricardo Salles. Oxford: Oxford University Press. 93-117.
- Cooper, Melinda 2002 "Vitesses de l'image, puissances de la pensée: la philosophie épicurienne revue par Deleuze et Guattari." *French Studies* 61.1, pp. 45-60.
- Cressole, Michel 1973. Deleuze. Paris: Éditions universitaires.
- Darwin, Charles 2003. On the Origin of Species. Ed. J. Carroll. Peterborough, ON: Broadview.
- Davidson, Donald 2001. Inquiries into Truth and Interpretation (Second Edition). Oxford: Clarendon.
- de Beistegui, Miguel 2004 *Truth and Genesis: Philosophy as Differential Ontology.* Bloomington: Indiana University Press.
- De Landa, Manuel 1997. A Thousand Years of Non-Linear History. New York: Zone Books.
- ——— 2006. *A New Philosophy of Society: Assemblage Theory and Social Complexity*. New York: Continuum.

- Deleuze, Gilles 1972. Seminar at Vincennes: *sur Anti Oedipe et Mille Plateaux*, 22 February. http://www.webdeleuze.com/php/sommaire.html.
 - ——— 1981 Seminar at Vincennes: *sur Spinoza*. 17 February.

http://www.webdeleuze.com/php/sommaire.html.

Dijksterhuis, E. J. 1987. Archimedes. Trans. C. Dikshoorn. Princeton: Princeton University Press.

Dosse, François 2010. *Gilles Deleuze and Félix Guattari: Intersecting Lives*. New York: Columbia University Press.

- Duffy, Simon 2006a. "The mathematics of Deleuze's differential logic and metaphysics." In *Virtual Mathematics: The Logic of Difference*. Ed. Simon Duffy. Manchester: Clinamen Press. 118-44.
- 2006b "The Differential Point of View of the Infinitesimal Calculus in Spinoza, Leibniz and Deleuze." *Journal of the British Society for Phenomenology* 37.3, pp. 286-307.
- Dummett, Michael 1993. Origins of Analytical Philosophy. Cambridge, MA: Harvard University Press.
- Durie, Robin 2006 "Problems in the relation between maths and philosophy." In *Virtual Mathematics: The Logic of Difference*. Ed. Simon Duffy. Manchester: Clinamen Press. 169-86.
- Everson, Stephen 1990. "Epicurus on the Truth of the Senses." In *Epistemology (Companions to Ancient Thought 1)*. Ed. S. Everson. Cambridge: Cambridge University Press. 161-83.
- Fine, Gail 1986. "Immanence." Oxford Studies in Ancient Philosophy 4: 71-97.
- Flaxman, Gregory 2009. "Plato." In *Deleuze's Philosophical Lineage*. Eds. Graham Jones and Jon Roffe. Edinburgh: Edinburgh University Press. 8-26.
 - 2011. Gilles Deleuze and the Fabulation of Philosophy. Minneapolis: University of Minnesota Press.
- Frede, Dorothea 2003. "Stoic Determinism." In *The Cambridge Companion to the Stoics*. Ed. Brad Inwood. New York: Cambridge University Press. 179-205.
- Frede, Michael 1967. "Prädikation und Existenzaussage." Hypomnemata 18: 1-99.
- ------ 1974. *Die Stoische Logik*. Göttingen: Abhandlungen der Akademie der Wissenschaften in Göttingen.
- (1978) 1987. "Principles of Stoic Grammar." In Michael Frede, *Essays in Ancient Philosophy*. Minneapolis: University of Minnesota Press. 301-37.

- 1987b. "The Unity of General and Special Metaphysics: Aristotle's Conception of Metaphysics." In *Essays in Ancient Philosophy*. Minneapolis: University of Minnesota Press. 81-95.
- 1994. "The Stoic notion of a *lekton.*" In *Companions to Ancient Thought 3: Language*.
 Ed. Stephen Everson. New York: Cambridge University Press. 109-28.
- 1999. "Stoic Epistemology." In *The Cambridge History of Hellenistic Philosophy*. Eds.
 K. Algra et al. New York: Cambridge University Press. 295-322.

—— 2005. "La théologie stoïcienne." In *Les stoïciens*. Ed. J.-B. Gourinat. Paris: Vrin. 213-32. Frege, Gottlob 1956 (1918). "The Thought: A Logical Inquiry." *Mind*, New Series 65.259: 289

-311.

Furley, David J. 1967. Two Studies in the Greek Atomists. Princeton: Princeton University Press.

- Furth, Montgomery. 1988. *Substance, Form, and Psyche: An Aristotelian Metaphysics*. New York: Cambridge University Press.
- Gasché, Rodolphe 2014. Geophilosophy: On Gilles Deleuze's and Félix Guattari's What is Philosophy? Evanston, IL: Northwestern University Press.
- Gaskin, Richard 1995. The Sea Battle and the Master Argument: Aristotle and Diodorus Cronus on the Metaphysics of the Future. Berlin/New York: de Gruyter.
- Gourinat, Jean-Baptiste 2009. "The Stoics on Matter and Prime Matter: 'Corporealism' and the Imprint of Plato's *Timaeus*." In *God and Cosmos in Stoicism*. Ed. Ricardo Salles. Oxford: Oxford University Press. 46-70.
- Graeser, Andreas 1978. "The Stoic Theory of Meaning." In *The Stoics*. Ed. John M. Rist. Berkeley: University of California Press. 77-101.
- Gratton, Claude 2010. Infinite Regress Arguments. Dordrecht: Springer.
- Grice, P. 1988 "Aristotle on the Multivocity of Being." *Pacific Philosophical Quarterly* 69: 175 -200.
- Grier, Michelle. 2001. *Kant's Doctrine of Transcendental Illusion*. New York: Cambridge University Press.
- Hadot, Pierre 1998. *The Inner Citadel: The Meditations of Marcus Aurelius*. Trans. Michael Chase. Cambridge: Harvard University Press.
- Hammer, Taylor 2007. "The Role of Ontology in the Philosophy of Gilles Deleuze." Southern Journal of Philosophy 45.1: 57-77.
- Hankey, Wayne 2002. "Aquinas and the Platonists." In *The Platonic Tradition in the Middle Ages: A Doxographic Approach*. Eds. Stephen Gersh and Maarten J. F. M. Hoenen. Berlin: Walter de Gruyter. 279–324.
- Hardt, Michael 1993. *Gilles Deleuze: An Apprenticeship in Philosophy*. Minneapolis: University of Minnesota Press.
- Haselberger, Lothar 2005. "Bending the Truth: Curvature and other Refinements of the Parthenon." In *The Parthenon: From Antiquity to the Present*. Ed. Jennifer Neils. Cambridge University Press. 101-58.
- Hintikka, Jaako 1966. "Aristotelian Infinity." Philosophical Review 75:2, pp. 197-218.
- Holmes, Brooke 2012. "Deleuze, Lucretius, and the Simulacrum of Naturalism." In *Dynamic Reading: Studies in the Reception of Epicureanism*. Eds. B. Holmes and W. H. Shearin. Oxford: Oxford University Press. 316-42.
- Huffman, Carl A. 2005 Archytas of Tarentum: Pythagorean, Philosopher and Mathematician King. New York: Cambridge University Press.
- Husserl, Edmund [1913] 1983. Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy, First Book. Trans. F. Kersten. The Hague: Martinus Nijhoff.
- Hylton, Peter 2010. "Frege and Russell." In *The Cambridge Companion to Frege*. Eds. M. Potter and T. Ricketts. New York: Cambridge University Press. 509-49
- Inwood, Brad 1985. Ethics and Human Action in Early Stoicism. Oxford: Clarendon.
- Inwood, Brad and L. P. Gerson (Eds.) *Hellenistic Philosophy: Introductory Readings*. Indianapolis: Hackett, 1997.
- Ju, Anna Eunyoung 2009. "The Stoic Ontology of Geometrical Limits." Phronesis 54: 371-89.
- Kahn, Charles H. 1981 "Some Philosophical Uses of 'to be' in Plato." Phronesis 26: 105-34.
- Kant, Immanuel 2007. *Critique of Pure Reason*. Trans. P. Guyer and A. W. Wood. New York: Cambridge University Press. [= CPR]

- Kerslake, Christian 2009. "Hoëne Wronski and Francis Warrain." In *Deleuze's Philosophical Lineage*. Eds. Graham Jones and Jon Roffe. Edinburgh: Edinburgh University Press. 167-89.
- Kim, Jaegwon 1993. *Supervenience and Mind: Selected Philosophical Essays*. New York: Cambridge University Press.
- Konstan, David 1979. "Problems in Epicurean Physics." Isis 70.3: 394-418.
- Kosman, L. A. 1969. "Aristotle's Definition of Motion." Phronesis 14.1: 40-62.
- Kremer, Michael 1994. "The Argument of 'On Denoting'." *The Philosophical Review*. 103.2: 249-97.
- Lampert, Jay 2006. Deleuze and Guattari's Philosophy of History. New York: Continuum.
- Lang, Helen S. 1998. *The Order of Nature in Aristotle's Physics: Place and the Elements*. New York: Cambridge University Press.
- Lapidge 1973. "Archai and Stoicheia: A Problem in Stoic Cosmology." Phronesis 18 (3): 240-78.
 —— 1978. "Stoic Cosmology." In *The Stoics*. Ed. John M. Rist. Berkeley: University of California Press. 161-86.
- Laroche, Emmanuel 1949. Histoire de la racine nem- en grec ancien. Paris: Klincksieck.
- Lear, Jonathan 1980. "Aristotelian Infinity." Proceedings of the Aristotelian Society 80: 187-210.
- Lecercle, Jean-Jacques 2008. "Preface." In James Williams, *Gilles Deleuze's* Logic of Sense: *A Critical Introduction and Guide*. Edinburgh: Edinburgh University Press. vii-viii.
- Leibniz, G. W., *G. W. Leibniz: Philosophical Essays*. Trans. and ed. Roger Ariew and Daniel Garber. Indianapolis: Hackett. [= PE]
- ------. *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*. Trans. and ed. Leroy E. Loemker. Dordrecht: Reidel. [= PPL]
- Lennox, James G. 1987a "Divide and Explain: the *Posterior Analytics* in practice." In *Philosophical Issues in Aristotle's Biology*. Eds. Allan Gotthelf and James G. Lennox. New York: Cambridge University Press. 90-119.
- 1987b "Kinds, forms of kinds, and the more and the less in Aristotle's biology." In *Philosophical Issues in Aristotle's Biology*. Eds. Allan Gotthelf and James G. Lennox. New York: Cambridge University Press. 339-59.
- Lévi-Strauss, Claude 1997. "Selections from *Introduction to the Work of Marcel Mauss*." In *The Logic of the Gift*. Ed. Alan D. Shrift. New York: Routledge. 45-69.
- Lewis, F. A. 1975. "Did Plato discover the *estin* of identity?" *California Studies in Classical Antiquity* 8: 113-43.
- Lloyd, A. C. 1971. "Grammar and Metaphysics in the Stoa." In *Problems in Stoicism*. Ed. A. A. Long. London: Athlone. 58-74.
- Lloyd, G. E. R. 1983. *Science, Folklore and Ideology: studies in the life sciences in Ancient Greece:* Cambridge University Press.
- Long, A. A. 1971a. "Language and Thought in Stoicism." In *Problems in Stoicism*. Ed. A. A. Long. London: Athlone. 75-113.

- ——— 1985. "The Stoics on World-Conflagration and Everlasting Recurrence." The Southern

Journal of Philosophy 23, supplement: 13-37.

- Lorenz, Hendrik 2007. "The Assimilation of Sense to Sense-Object in Aristotle." Oxford Studies in Ancient Greek Philosophy 33: 179-220.
- Loux, Michael 2003. "Aristotle: Metaphysics." In *The Blackwell Guide to Ancient Philosophy*. Ed. Christopher Shields. Oxford: Blackwell. 163-83.
- Lyotard, Jean-François 1988. *The Differend: Phrases in Dispute*. Trans. Georges Van Den Abbeele. Minneapolis: University of Minnesota Press.
- Macintosh, J. J. 1969. "Transcendental Arguments." Proceedings of the Aristotelian Society 43.
- Malcolm, John 1967. "Plato's analysis of τὸ ὄν and τὸ μὴ ὄν in the Sophist." Phronesis 12: 130 -46.
- Mansfeld, Jaap 1978. "Zeno of Citium: Critical Observations on a Recent Study." *Mnemosyne* 31: 134-78.
- 1988. "De Melisso Xenophane Gorgia: Pyrrhonizing Aristotle." In Jaap Mansfeld, Studies in the Historiography of Greek Philosophy. Assen/Maastricht: Van Gorcum. 239-76.
- Mates, Benson 1953. Stoic Logic. Berkeley: University of California Press.
- Matthews, Gareth B. "De Anima 2. 2-4 and the Meaning of Life." In Essays on Aristotle's De Anima. Eds. M. Nussbaum and A. O. Rorty. Oxford: Oxford University Press. 185-93.
- Mau, Jürgen 1973. "Was There a Special Epicurean Mathematics?" In *Exegesis and Argument:* Studies in Greek Philosophy Presented to Gregory Vlastos. Eds. E. N. Lee, A. P. D. Mourelatos, R. M. Rorty. Assen: Van Gorcum.
- McKeon, Richard 1994. *On Knowing: The Natural Sciences*. Eds. D. B. Owen and Z. K. McKeon. Chicago: University of Chicago Press.
- McLuhan, Marshall 1966 (1962). *The Gutenberg Galaxy: The Making of Typographic Man.* Toronto: University of Toronto Press.
- Meinong, Alexius (1904) 1960. "Theory of Objects." In *Realism and the Background of Phenomenology*. Ed. R. Chisholm. New York: Free Press. 76-117.
- Meyer, Susan Sauvé 2009. "Chain of Causes: What is Stoic Fate?" In *God and Cosmos in Stoicism*. Ed. Ricardo Salles. Oxford: Oxford University Press. 71-92.
- Miller, F. D., Jr. 1982. "Aristotle against the Atomists." In *Infinity and Continuity in Ancient and Medieval Thought*. Ed. N. Kretzmann. Ithaca, NY: Cornell University Press. 87-111.
- Montagnes, Bernard. 2004. *The Doctrine of the Analogy of Being According to Thomas Aquinas*. Milwaukee: Marquette University Press.
- Montebello, Pierre 2003. L'autre métaphysique: Essai sur Ravaisson, Tarde, Nietzsche et Bergson. Paris: Desclée de Brouwer.
- Morel, Pierre-Marie 2009 "Epicurean Atomism." In *The Cambridge Companion to Epicureanism*. Ed. James Warren. Cambridge: Cambridge University Press. 65-83.
- Murphy, John P. 1990. Pragmatism: From Peirce to Davidson. Boulder CO: Westview.
- O'Keefe, Tim 1996. "Does Epicurus Need the Swerve as an *Archê* of Collisions?" *Phronesis* 41.3: 305-17.
 - 2005. Epicurus on Freedom. New York: Cambridge University Press.
- Owen, G. E. L. 1960. "Logic and Metaphysics in Some Earlier Works of Aristotle." In *Aristotle and Plato in the Mid-Fourth Century*. Eds. G. E. L. Owen and I. During. Goteborg. 163-90.
- 1971 "Plato on Not-being." In *Plato: A collection of critical essays 1*. Ed. G. Vlastos. Garden City. 223-267; reprinted in *Logic, Science and Dialectic*. Ed. M. Nussbaum Ithaca NY: Cornell University Press, 1986. 104-37.
- Pakaluk, Michael. 1993. "The interpretation of Russell's 'Gray's Elegy' argument." In Bertrand

Russell and Analytic Philosophy. Eds. A. Irvine and G. Wedeking. Toronto: University of Toronto Press. 37-65.

Palmer, John A. 1999. Plato's Reception of Parmenides. Oxford: Clarendon Press.

Pearson, Giles 2005. "Aristotle on Being-as-truth." Oxford Studies in Ancient Philosophy 28: 201-31.

- Pellegrin, Pierre 1986. Aristotle's Classification of Animals: Biology and the Conceptual Unity of the Aristotelian Corpus. Trans. Anthony Preus. Berkeley: University of California Press.
- 1987. "Logical difference and biological difference: the unity of Aristotle's thought." In *Philosophical Issues in Aristotle's Biology*. Eds. Allan Gotthelf and James G. Lennox. New York: Cambridge University Press. 313-38.
- Plotinsky, Arkady 2006 "Manifolds: on the concept of space in Riemann and Deleuze." In Virtual Mathematics: The Logic of Difference. Ed. Simon Duffy. Manchester: Clinamen Press. 187-208.
- Porter, James I. 1996. "The Philosophy of Aristo of Chios." In *The Cynics: The Cynic Movement in Antiquity and its Legacy*. Eds. R. Bracht Branham and Marie-Odile Goulet-Cazé. Berkeley: University of California Press. 156-89.
- Protevi, John 2001. "The organism as the judgement of God: Aristotle, Kant and Deleuze on nature (that is, on biology, theology and politics)." In *Deleuze and Religion*. Ed. Mary Bryden. New York: Routledge. 30-41.
- Quine, W. V. 1938. "On the Theory of Types." Symbolic Logic. 3.4: 125-39.
- Reck, Erich H. 2013 "Introduction: Analytic Philosophy and Philosophical History" in *The Historical Turn in Analytic Philosophy*, edited by E. H. Reck. Palgrave Macmillan. 1-36.
- Rescher, Nicholas 1996. Process Metaphysics: An Introduction to Process Philosophy. Albany, NY: SUNY Press.
- Rohlf, Michael 2010. "The Ideas of Pure Reason." In *The Cambridge Companion to Kant's Critique of Pure Reason*. Ed. Paul Guyer. New York: Cambridge University Press, 190-209.
- Rorty, Richard 1991. *Objectivity, Relativism and Truth: Philosophical Papers (Volume 1)*. New York: Cambridge University Press.
- Ross, W. D. 1924. Aristotle's Metaphysics. Oxford: Clarendon Press.
- Rousseau, Jean-Jacques 1987. *Basic Political Writings*. Trans. Donald A. Cress. Indianapolis: Hackett.
- Russell, Bertrand (1905a) 1996. The Principles of Mathematics. New York: Norton.
- ——— 1905b. "On Denoting." Mind 14.52: 479-93.
- (1950) 1992. An Inquiry into Meaning and Truth. New York: Routledge.

Salanskis, Jean-Michel 2006. "Mathematics, metaphysics, philosophy." In *Virtual Mathematics: The Logic of Difference*. Ed. Simon Duffy. Manchester: Clinamen Press. 46-64.

- Sedley, David 1976. "Epicurus and the Mathematicians of Cyzicus." *Cronache Ercolanesi* 6: 23-54.
- ——— 1982 "Two Conceptions of Vacuum." Phronesis 27: 175-93.
- ——— 1985. "The Stoic Theory of Universals." *The Southern Journal of Philosophy* 23, supplement: 87-92.
- ——— 1988 "Epicurean Anti-Reductionism." In Matter and Metaphysics. Eds. J. Barnes and

M. Mignucci. Naples: Bibliopolis. 295-327.

- 2009 "Epicureanism in the Roman Republic." In *The Cambridge Companion to*
- Epicureanism. Ed. James Warren. Cambridge: Cambridge University Press. 29-45.
- Sellars, John 1999. "The Point of View of the Cosmos: Deleuze, Romanticism, Stoicism." *Pli* 8: 1-24.
- 2003. *The Art of Living: The Stoics on the Nature and Function of Philosophy*. London: Ashgate.
- 2006. "An Ethics of the Event." *Angelaki* 11 (3): 157 171.
- 2007. "Aiôn and Chronos: Deleuze and the Stoic Theory of Time." Collapse 3: 177-205.
- Serres, Michel (1977) 2000. *The Birth of Physics*. Trans. Jack Hawes. Manchester: Clinamen Press.
 - —— 1995. *The Natural Contract*. Trans. Elizabeth MacArthur and William Paulson. Ann Arbor: University of Michigan Press.
- Shaviro, Steven 2009. *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics*. Cambridge, MA: MIT Press.
- Shields, Christopher 1990. "The Generation of Form in Aristotle." *History of Philosophy Quarterly*. 7.4: 367-90.
- Simondon, Gilbert 2005. L'individuation à la lumière des notions de forme et d'information. Grenoble: Millon.
- ------ 2009. "The Position of the Problem of Ontogenesis." Trans. Gregory Flanders. *Parrhesia* 7: 4-16.
- Smith, Daniel W. 1996 "Deleuze's Theory of Sensation: Overcoming the Kantian Duality." In *Gilles Deleuze: Critical Reader.* Ed. Paul Patton. Oxford: Blackwell. 29-56.
- 2000. "Deleuze, Hegel, and the Post-Kantian Tradition." *Philosophy Today* 44: 119-31.
- 2001 "The doctrine of univocity: Deleuze's ontology of immanence." In *Deleuze and Religion*. Ed. Mary Bryden. New York: Routledge. 167-83.
- ——— 2003 "Mathematics and the Theory of Multiplicities: Badiou and Deleuze Revisited." *Southern Journal of Philosophy* 41: 411-49.

Continental Philosophy Review 38.1-2: 89-123.

- 2006 "Axiomatics and problematics as two modes of formalisation: Deleuze's epistemology of mathematics." In *Virtual Mathematics: The Logic of Difference*. Ed. Simon Duffy. Manchester: Clinamen Press. 145-68.
- 2012. "Analytics: On the Becoming of Concepts." In *Essays on Deleuze*. Edinburgh: Edinburgh University Press. 122-45.
- Smith, Robin 1995. "Logic." In *The Cambridge Companion to Aristotle*. Ed. J. Barnes. New York: Cambridge University Press. 27–65.
- Somers-Hall, Henry 2010. "Hegel and Deleuze on the metaphysical interpretation of the calculus." *Continental Philosophy Review* 42: 555-72.
- 2013. Deleuze's Difference and Repetition: An Edinburgh Philosophical Guide. Edinburgh: Edinburgh University Press.
- Sorabji, Richard. 1982 "Myths about Non-Propositional Thought." In Language and Logos. Eds.

M. Schofield and M. Nussbaum. Cambridge: Cambridge University Press. 295-314.
————————————————————————————————————
place?" Proceedings of the Boston Area Colloquium in Ancient Philosophy 4.
1990. The Ancient Commentators on Aristotle. In Aristotle Transformed. Ed. K.
Stough, Charlotte 1978. "Stoic Determinism and Moral Responsibility." In <i>The Stoics</i> . Ed. John
M. Rist. Berkeley: University of California Press. 203-32.
Striker, Gisela 1977. "Epicurus on the Truth of Sense-Impressions." Archiv für Geschichte der Philosophie 59. pp. 129-42.
Todd, Robert B. 1978. "Monism and Immanence: The Foundations of Stoic Physics." In <i>The</i>
Stoics. Ed. John M. Rist. Berkeley: University of California Press. 137-160.
Tuominen, Miira. 2009. <i>The Ancient Commentators on Plato and Aristotle</i> . Berkley: UC Press. Villani, Arnaud 1999. <i>La guêpe et l'orchidée</i> . Paris: Belin.
2007. "I feel I am a pure metaphysician': The Consequences of Deleuze's Affirmation."
Collapse 3: 45-62.
Voss, Daniela 2013. Deleuze s Retninking of the Notion of Sense. Deleuze Stuales /.1: 1-25.
Walli, Jean 1920. Les philosophes pluralistes à Angleierre et à Amerique. Paris. Feix Alcan. Walker P. C. S. 2006. "Kapt and transcendental arguments." In Kapt and Modern Philosophy.
Ed. P. Guyer. Cambridge: Cambridge University Press.
White, Michael J. 1992. The Continuous and the Discrete: Ancient Physical Theories from a
Contemporary Perspective. Oxford: Clarendon.
——— 2003. "Stoic Natural Philosophy (Physics and Cosmology)." In The Cambridge
<i>Companion to the Stoics</i> . Ed. Brad Inwood. New York: Cambridge University Press. 124-52.
Widder, Nathan 2001 "The Rights of the Simulacra: Deleuze and the Univocity of Being." Continental Philosophy Review 34: 437-53
— 2009 "Deleuze and Duns Scotus." In <i>Deleuze's Philosophical Lineage</i> . Eds. G. Jones and L Roffe Edinburgh: Edinburgh University Press 27-43
Williams, Bernard. 1986 "Hylomorphism." Oxford Studies in Ancient Philosophy 4: 189-99. Williamson Timothy 1994 Vagueness New York: Routledge
Yu Jiyuan 2003 The Structure of Reing in Aristotle's Metaphysics Dordrecht: Kluwer
Academic Publishers.
Zourabichvili, François (1994) 2012. Deleuze: A Philosophy of the Event. Trans. K. Aarons.
Edinburgh: Edinburgh University Press.
——— (2003) 2012. <i>The Vocabulary of Deleuze</i> . Trans. K. Aarons. Edinburgh: Edinburgh University Press.