# BERTRAND RUSSELL'S BUNDLE THEORY OF PARTICULARS

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By

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ABSTRACT

This thesis is an examination of Bertrand Russell's realist 'bundle theory of particulars.' In Russell's earlier work, the need to explain the unity and individuality of objects compelled him to accept particulars as well as universals as ultimate kinds of reality. Nevertheless, in carrying out his efforts to economize his ontology, he discovered he could not reduce properties to particulars, because there are some relations that resist nominalistic explanation, but particulars could be reduced to bundles of qualities. In this thesis, I show that the realist 'bundle theory' not only reduces the kinds of ultimate reality to one, i.e., to universal qualities, but also serves all of the purposes for which bare particulars were originally required. Specifically, I examine what I take to be the major criticisms leveled against the realist 'bundle theory': the problem of individuation, the problem of necessity, and the problem of analyticity. I defend the strength and consistency of Russell's theory and argue that it can answer to the objections.

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ABBREVIATIONS

*POM* *The Principles of Mathematics*

*PM* *Principia Mathematica*

*POP* *The Problems of Philosophy*

*TK* *Theory of Knowledge*

*OKEW* *Our Knowledge of the External World*

*AMi* *The Analysis of Mind*

*AMa* *The Analysis of Matter*

*IMT* *An Inquiry into Meaning and Truth*

*HK* *Human Knowledge: Its Scope and Limits*

*MPD* *My Philosophical Development*

# Chapter 1: Introduction

This thesis is a survey of Bertrand Russell's later metaphysics, i.e., his work after 1940[1], with special reference to his bundle theory of particulars. My aim is to defend Russell's version of bundle theory from some important objections. The objections I will deal with in detail are ones that are generally directed against realist bundle theories. But I will also reply to objections specifically against Russell's bundle theory as well.

In this chapter I survey various positions on properties and particulars for the purpose of situating Russell's realist bundle theory amongst competing ontologies. First, I introduce the reader to the categories of existence that will be discussed in this thesis, i.e., particulars and universals. Next I discuss the two main positions on the nature of properties, realism with respect to universals and nominalism, and the main objections to these. After this I discuss the main theories of particulars, i.e., the substratum theory and the bundle theory, and some of the objections to these. I will appeal to various philosophers other than Russell in explaining where the problems and possible solutions to them lie.

## 1.1 Categories of Existence

In ontology we ask questions as to what kinds of entities exist and what they are like. Generally entities are divided into two kinds: universals and particulars. The category of universals is a category that Russell always acknowledged. Universals subdivide into

[1] *Inquiry into Meaning and Truth* (1940), *Human Knowledge* (1948).

properties and relations. An example of a universal property is whiteness and an example of a universal relation is being north of. His position on the category of particulars, however, went through various changes. Particulars subdivide into ordinary particulars (things) such as a tree, events such as a leaf falling from a tree, momentary particulars such as a spatio-temporal cross-section of a leaf, and point-instants.

Ordinary particulars are particulars that persist through time. Russell's view on ordinary particulars until 1914[2] was that they exist and they are inferred from the data of the senses. The early Russell thought that we can know ordinary particulars by inductive inference from our sensory experiences. Russell, as of 1914, however, abstained from making any existence claims about material objects. Rather, he constructed them[3].

Ordinary particulars, whether inferred or constructed, are not fundamental entities; there are more basic entities than ordinary particulars, such as properties and/or substrata[4], and the ontologist endeavours to construct or infer the ordinary particulars out of properties only or both properties and substrata. Ordinary particulars are wholes requiring ontological analysis into their constituents (or parts). Ontological analysis is not physical analysis, where we would look for the physical parts of an object. Rather, the whole is analyzed into the kinds of entities it is composed of, such as universal or particular properties, and perhaps substrata.

After 1918[5], Russell explained ordinary particulars in terms of events, which were later (1940) replaced by qualities. "An 'event' is supposed to occupy some continuous

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[2] *Our Knowledge of the External World.*
[3] See Chapter 2.
[4] 'Substrata' will be explained in Section 1.4.
[5] "On Sensations and Ideas" (1918), *Analysis of Mind* (1921).

portion of space-time, at the end of which it ceases, and cannot recur" (*HK* 82-3). Russell accepted events as an indispensable category between 1918 and 1940. As of 1918, Russell worked on eliminating the mental substance[6] in favor of a construction from sensations, which he then took to be neutral events. After 1940, he decided that events were dispensable, because he could explain events in terms of qualities, on the condition that events are not taken to have the property of non-recurrence of logical necessity: "It is clear that a quality, or a complex of qualities, may recur; therefore an event, if non-recurrence is logically necessary, is not a bundle of qualities" (*HK* 83).

As to the questions of whether properties exist and how they exist, the two main positions are realism and nominalism.

### 1.2 Properties: Realism with respect to Universals

First, realists believe that properties exist as universals. Some realists, such as the early Russell, believe that universals are abstract entities, in the sense that they are not located in space and time. These are called transcendent universals (Armstrong Vol.1 Ch. 7). Such universals are exemplified in particulars, which are located in space and time. For instance, a male cardinal exemplifies the universal property of redness. The cardinal is the instance of the universal redness. Other realists with respect to universals, such as the later Russell, believe that universals are abstract, though not in the sense of being non-spatio-temporal, but rather in the sense that they are multiply occurrent. These universals are called immanent universals (*ibid.*).

[6] Russell's understanding of 'substance' is explained in Section 2.1.

Realists introduce universal properties as a category to solve 'the problem of universals', which is "the problem of how numerically different particulars can nevertheless be identical in nature, all be of the same type" (Armstrong Vol. 1. 41). Once you accept universal properties, you can appeal to them in order to explain what it is that two particulars have in common (Oliver 15).

Another reason for postulating universals is that we need them to explain how predicates are ascribed to subjects and what abstract singular terms refer to. In the case of subject-predicate sentences, the predicate as a general term expresses the universal. Subject and predicate should both refer to something in the world. The subject in the sentence, 'This cardinal is red', is related to redness. Two tokens of the same predicate in different propositions should refer to a single entity so that the predicate can have the same meaning in both propositions (Loux *Metaphysics* 20-30). And when abstract reference is in question, such as "Redness is a colour", it is claimed that the abstract term refers to the universal redness[7].

Some realists such as Russell claim that the universals are the referents of predicates and relations: "When we examine common words, we find that, broadly speaking, proper names stand for particulars, while other substantives, adjectives, prepositions, and verbs stand for universals" (*POP* 53). In order not to posit universals redundantly, some realists, such as the later Russell, distinguish between basic and derivative (primitive and non-primitive) predicates. They claim there to be universals,

[7]However, this does not mean that nominalists cannot hold the correspondence theory of truth. We will shortly see that some nominalists hold that 'redness' in 'Redness is a colour' corresponds to all the red things, i.e., ordinary particulars. Other nominalists maintain that 'redness' refers to the class of red ordinary particulars. Yet others may hold that 'redness' refers to the class of red tropes.

which are the referents of basic predicates; but they refrain from accepting universals for non-primitive predicates. The non-primitive predicates are defined in terms of the basic predicates (Loux *Metaphysics* 40-1). For instance, it is claimed that we do not need a universal for the predicate 'is a dog' once we have universals for predicates 'barks' and 'is furry'. The justification empiricists give for such a distinction between basic and derivative predicates is epistemological: they maintain that the basic universals are properties given to us in experience. The predicates that express what is given directly by sensory experience are classified as basic predicates that refer to universals and the remaining predicates are defined in terms of the basic predicates. Such a distinction between primitive and non-primitive predicates will also come in handy for the later Russell when faced with the problem of uninstantiated universals.

One problem arises if the realist wants the basic predicates to refer to experienceable things. For there are many predicates that cannot be defined in terms of primitive predicates expressing sensory experiences. Such predicates are those employed in the theoretical sciences and ethics. Some contemporary realists, such as M. Loux, think that no predicates can be reduced to one another (*Substance* 15-6). First, Loux claims that there is not an absolute, neat distinction between primitive and defined predicates; the distinction is "system-relative" at best. Second, Loux argues that even if we could draw an absolute distinction between primitive and defined predicates, "it would be perfectly harmless to speak of universals corresponding to defined predicates" (*Substance* 15) for his realism about predicates is general. Loux holds that there is some universal or other

that corresponds to every predicate; he does not maintain that there has to be an irreducible universal corresponding to every predicate (*ibid.* 16).

On the other hand, scientific realists, such as the early Putnam (1969)[8], hold that there should be a distinction between primitive and non-primitive predicates, but what is directly experienced should not be considered as composing the basic predicates. The predicates necessary for physical theory should be the primitive ones. On the issue of non-scientific predicates, one view is that the non-scientific predicates of common sense do refer to their respective universals but "ontological priority should be given to the properties, kinds, and relations of physics" (Loux *Metaphysics* 46). Russell is not a scientific realist in this sense; he believes that we infer our knowledge of physics from what we experience.

Another objection raised against realism with respect to universals is the famous 'one in many' problem, first raised in Plato's *Parmenides.* It is claimed that it is problematic to say that a single universal can be multiply exemplified in different things at once. If it is the same thing at once in many places then "it would be separate from itself" (131b). And if it is not one in many, but parts of it are in many, such as a sail covering many people at the same time, then we end up with the absurdity that something large will be large in virtue of a small part of largeness (131c). But this objection assumes that universals are spatially located in particulars. The early Russell denies this assumption; for him universals are not in space and time. He argues that the relation 'east of' in sentences such as, "Montreal is east of Toronto" is not located anywhere or at

[8] "On Properties." *Essays in Honor of Carl G. Hempel.* Ed. N. Rescher et al. Dordrecht: Reidel, 1969.

anytime (*POP* 56). Russell says in *The Problems of Philosophy* that part of his metaphysics is Platonic realism (52). But the exemplification relation vanishes in his later work. One reason, though not the only reason, is that in his later work there are no more things (in the technical sense of the word) to exemplify universals. The thing, in his later work, is a series of momentary particulars, which in turn, are bundles of universal qualities.

However, Plato's objection above may be a problem for immanent realists, such as the later Russell[9], who claim that universals are located in particulars. Their defense consists of pointing out that the very nature of universals is such that universals can occupy many places at once. And they claim that the objection falsely presupposes that the spatio-temporal existence of universals is the same as that of particulars. Loux appreciates this reply; he explains that our understanding of spatial location is tied up with particulars. That is why we think that it is impossible for a universal to exist at different locations at once (*Metaphysics* 55). The later Russell would also reply that universals are such that they occur at many places and times. Russell writes, "When I say that redness can be at two places at one, I mean that redness can have to itself one or more of those spatial relations, which according to common sense, no 'thing' can have to itself. Redness may be to the right of redness, or above redness, in the immediate visual field; redness may be in America and in Europe, in physical space" (*IMT* 100).

[9] I'll argue in Chapter 3 that the later Russell is an immanent realist only with respect to qualities, not relations.

Contemporary Aristotelians, such as Michael Loux[10], claim that while universals themselves are non-spatio-temporal, they belong to spatio-temporal things. Universals are ontologically dependent on ordinary particulars. They do not exist independently of the particulars in which they inhere. Still there is some incoherence in the claim that something non-spatio-temporal is 'in' something spatio-temporal. Aristotelians explain that a universal's being 'in' a particular is not a spatio-temporal relation. The preposition 'in' means something other than being spatially located. It means that the universal is logically dependent on a particular; it cannot be conceived without some particular or other. The later Russell's universals are immanent like Aristotelian universals, but they are not Aristotelian in the above sense; a universal is not dependent on a particular, according to Russell. A universal, e.g., 'red', is fully present at one point-instant, similar to Aristotelian universals. However, Russell's universals do not *belong to* or *depend on* a particular; they *make up* the particular.

Among the realists, there is a division on the question whether there are any unexemplified properties. Aristotelians claim that there are only exemplified universals. Universals are in the ordinary particulars; they do not exist independently of space and time like Platonic universals. The reason is that Aristotelians believe that once you posit universals in a realm of their own, one runs into two problems: First, the metaphysical problem of explaining how spatio-temporal ordinary particulars are related to non-spatio-temporal universals and second, the epistemological problem that since we human beings are in the spatio-temporal world there needs to be an explanation of how we can know of

[10] *Substance and Attribute*. Dordrecht: Reidel. 1978. Chapter 9.

entities outside of space and time. A substratum theorist's answer to the first problem is the exemplification relation. The early Russell's answer to the second problem is his theory of acquaintance; Russell claimed we are acquainted with universals as well as the sense-data presumably caused by ordinary particulars.

Platonists, on the other hand, argue that there should be unexemplified properties. They claim there are some universals that are not exemplified by any particulars at all. For instance, a kind of animal that never has come into existence or a shape of which there is no example (Armstrong *Vol. 1* 65).

### 1.3 Properties: Nominalism

The view opposing realism on the metaphysical status of properties is nominalism. Nominalists reject the existence of universal properties. One reason for this view, following Ockham, is to avoid postulating entities unnecessarily. While immanent realists, such as realist bundle theorists, try to reduce existents only to universals, nominalists try to reduce existents to particulars. Nominalists claim that they can explain attribute (property) agreement, subject-predicate discourse, and abstract reference without any recourse to postulating universals (Loux *Metaphysics* 54). That is, nominalists claim they provide a simple ontological theory for the phenomena to be explained. It is mostly philosophers with empiricist tendencies who are nominalists, since they tend to reject abstract objects, such as numbers, classes, and propositions (as meanings or senses of sentences), because they are entities that cannot be experienced.

Strict nominalists such as Rodriguez-Pereyra (2002) deny that there are universal properties. Rodriguez-Pereyra calls this type of nominalism 'resemblance nominalism'. Resemblance nominalists hold that only ordinary particulars exist (*ibid.* 59). Russell formulates his objection to resemblance nominalism in *The Problems of Philosophy*[11]. In response to this objection, which claims to prove the need to postulate universals, some nominalists, such as Quine, argue that the fact that one thing is similar to another does not require any explanation. We should take it as a fundamental fact about the world that some things agree in their attributes. "That the houses and roses and sunsets are all of them red may be taken as ultimate and irreducible" ("On What There Is" 10).

On nominalist accounts, the truth-makers are ordinary particulars. The predicate ascribed to the subject does not refer to a universal. Instead, the predicate refers to the ordinary particular, too. The predicate is "true of or satisfied by" the object (Loux *Metaphysics* 60-4). Strict nominalists have an eliminationist strategy in explaining the phenomenon of abstract reference. They hold that sentences with subjects that seem to refer to abstract entities, such as in (i) "Courage is a virtue", are "really just disguised ways of making claims about familiar ordinary particulars" (*ibid.* 63). Hence, the quoted sentence actually claims that (ii) "Courageous people are virtuous". The problem with this account is that not all sentences can be translated in this manner because the truth-value of (i) changes when it is translated into (ii). (ii) may be false because some courageous people may lack other moral virtues, while (i) is true (*ibid.* 64).

[11] See Chapter 2.

In response to this problem, some strict nominalists have held that abstract terms such as 'courage' refer to *classes* of ordinary particulars (Wolterstorff, "Qualities" 98). This view has two problems, which were pointed out by Goodman and Carnap. The first is 'the imperfect community' problem: suppose we have three things, an entity which has the properties of blackness and hardness, another of hardness and redness, and another of redness and sweetness. They satisfy the two conditions for the identity of a class, a quality class in our case, which are: 1. Any two elements of a colour class stand in the relation of similarity to one another. 2. There is no thing outside of a colour class which stands in the relation of similarity to all things in the class (Carnap, *The Logical Structure* §70). Yet, our three entities do not form a quality-class, because there is nothing common to all of them (Goodman, *The Structure* 118–9). As Hochberg has noted, Russell mentions a similar problem in *Analysis of Matter*[12] (*The Positivist* 40), although there the construction is the other way around: a particular is constructed out of qualities. When you take the relation for construction to be two-place, such as the similarity relation in the case of Carnap, or the overlapping relation in Goodman, you can construct a point in one-dimension, but not in two or more dimensions, because starting from the second dimension a two-term relation will allow the possibility that any two pairs in a group overlap, but not all of them do. Take lines A, B, and C. If any two pairs intersect and there is no line outside the group which intersects with all of them, then there will be a point they all have in common. But if we take planes, any two pairs of planes might have an area in common, without all of them having an area in common. That is why Russell

[12] It was actually Ramsey who first pointed out this problem to Russell- See Chapter 2.

explains that if the thing to be constructed is $n$ dimensional, the relation for construction must be $n$+1 place (*AMa* 295).

The other difficulty is pointed out by Carnap, and named 'the companionship difficulty' by Goodman. The strict nominalist view tries to construct quality classes out of ordinary particulars, whereas for Carnap, the individuals out of which quality classes are constructed are *erlebs* (total momentary experiences), not ordinary particulars (Carnap, *The Logical Structure* §67). But we can ignore that difference for our exposition of the problem. Suppose we have objects such that wherever blue is found red is found as well. Here blue is a companion of red. In this case, the attempt to define the colour class 'blue' will fail because it does not satisfy the second condition for a quality class, which is that there should be nothing outside of a colour class which stands in the relation of colour kinship to all the things in the class. But there can be an object which is red, but not blue, and therefore does not belong to the colour class blue, and yet it would be similar in colour to all the objects in the class since all of them are red (*ibid.* §70).

There is another difficulty, which is also called the companionship difficulty by some philosophers, such as N. Wolterstorff. We will name this problem with a subscript: 'companionship diffculty$_2$'. (The problem is also called 'the coextension difficulty' (Rodriguez-Pereyra 153)). The modern expression of this problem is through the 'renate and cordate'[13] example. These properties are always found in the same ordinary particular, so one cannot form a class of ordinary particulars which would uniquely specify either of these properties. Their respective classes would have the same members;

[13] 'Renate': the property of having a kidney. 'Cordate': the property of having a heart.

those properties would name the same class, leading to the consequence that the predicates 'renate' and 'cordate' mean the same thing (Loux *Metaphysics* 84).

Wolterstorff notes that one way to avoid the problems of companionship difficulty$_2$ and imperfect community is to accept not only ordinary particulars as basic individuals, but also their aspects. Aspects are what Campbell calls 'abstract particulars' (20), and D.C. Williams calls 'tropes' (7). For example, the ordinary particular Taj Mahal as well as one of its aspects, the colour of the Taj Mahal will be a member of the color class, i.e., pink ("Qualities" 101). The companionship difficulty$_2$ will be solved because we will now have an ordinary particular, e.g. a renate animal, as well as the renate aspect of that particular animal and another class with the same ordinary particular, but this time with the cordate aspect of that animal so that each will form a distinct quality class (*ibid.* 102). This view leads to the way of trope theory, which is different from Wolterstorff's nominalism in the sense that trope theorists, when they explain abstract reference by reference to classes, would not include the ordinary particular as members, but merely the relevant tropes (aspects). Thus, trope theory is in a better position in terms of reducing the kinds of entities in one's ontology.

According to trope theorists, each trope is numerically individual. One red trope can never be numerically the same as another red trope. For instance, 'the redness of this cardinal' is a trope and not a universal like 'redness'. The attribute agreement between two red objects is explained by the similarity of their tropes, and trope theorists, hold that this similarity does not need explanation. Trope theorists claim that some tropes resemble each other is a fundamental fact about the world. They maintain that the abstract singular

term 'red' in "Red is my favourite colour" refers to the class of resembling tropes (Loux *Metaphysics* 80–3). The imperfect community problem and the companionship difficulties disappear on this view because the respective classes would include particular properties, not ordinary particulars with various shared properties (Campbell 33). However, a trope theorist would still need to respond to Russell's argument against such individual properties.

One problem for the trope theory arises with the null class. Since, for instance, there is no trope for being a unicorn, the only class the term 'unicorn' can refer to is the null class. But then many other terms such as 'angel' and 'griffin' will also have to refer to the empty class, in which case we would be claiming all the three terms mean the same thing; but clearly they don't (Loux *Metaphysics* 86). A more serious problem is one pointed out by Wolterstorff ("On The Nature" 176–81). Wolterstorff notes the difference between kinds and classes: "No class can have had different members from the ones it does have, whereas many kinds can have had different examples from those they do have; and classes are necessarily identical just in case there is no thing which is a member of one and not of the other, whereas there are pairs of non-identical kinds such that there is nothing which is an example of one and not of the other" ("On the Nature" 165). When redness is taken as a class of red things, it implies that there could not have been more red things than there actually are; it becomes a metaphysical impossibility for there to be more or less red things than there actually are (Loux *Metaphysics* 87). But how many examples redness has is a contingent matter.

### 1.4 Particulars: Substratum Theory

There are two analyses of ordinary particulars: substratum theory and bundle theory. Locke used the term 'substratum' for that which acts as the bearer of properties in a substance, but which itself is not a property. Locke writes, "...not imagining how these simple ideas can subsist by themselves, we accustom ourselves, to suppose some *substratum*, wherein they do subsist, and from which they do result; which we therefore call *substance*" (Book 2 Chapter 23 §1).

According to substratum theories, there is a substratum in each ordinary particular, and it holds the properties together to form a particular. A substratum is of a different category from that of properties. It itself is not a property; it is what bears properties (Loux *Metaphysics* 102). As Locke puts it, "... of this supposed something, we have no clear distinct idea at all" (Book 2 Chapter 23 §37). On a realist substratum theory, a substratum exemplifies universal properties. On a nominalist substratum theory, the substratum binds tropes together via the exemplification relation.

Gustav Bergmann, Edwin Allaire, and the early Russell are some of the proponents of the realist substratum theory. An ordinary particular is composed of a substratum, universal properties and a nexus that exemplifies them[14]. For Bergman, for instance, "an ordinary thing is a complex; its qualities are among its constituents; but they do not exhaust them" (*Realism* 9).

[14] Russell did not employ the notion of 'nexus'. He did not ontologize the exemplification relation.

An objection against the realist substratum theories is Bradley's argument against all relations, including the exemplification relation. When the relation is not taken as an attribute of the related terms, but instead taken as an independent entity,

> There is a relation C, in which A and B stand; and it appears with both of them. ... The relation C has been admitted different from A and B, and no longer is predicated of them. Something, however, seems to be said of this relation C, and said, again, of A and B. And this something is not to be the ascription of one to the other. If so, it would appear to be another relation, D, in which C, on one side, and, on the other side, A and B, stand. But such a makeshift leads at once to the infinite process. The new relation D can be predicated in no way of C, or of A and B; and hence we must have recourse to a fresh relation, E, which comes between D and whatever we had before. But this must lead to another, F; and so on, indefinitely (*Appearance* 18).

On realist theories, all relations are taken to be universals, i.e., real entities. But if the exemplification relation is a universal, then a further relation will be required to relate the original exemplification relation to the universal and the particulars (terms) between which the exemplification relation is supposed to hold. But this further relation will be another entity, since all relations are real entities. Another relation will be required to relate the second-level exemplification relation with the first-level exemplification relation and the terms. But that will require a third level exemplification relation and so on.

In response, some defenders of realism have claimed that exemplification is not a relation on a par with other relations, so that the realist account does not apply to exemplification itself. Bergmann, for instance, replies that a nexus, i.e., an ontological tie, which ties together the qualities of a particular, is by stipulation such that it "does not need a further entity to tie it to what it ties" (*Realism* 9). Bergmann assumes the nexus to

be literally the same in every particular; it merely occurs many times (*ibid.* 9). The nexus is what differentiates a mere collection of properties from a unified particular (*ibid.* 13). A nexus for Bergmann is a tie that connects particulars and properties; it is the result of "ontologizing exemplification" (Hochberg, *The Positivist* 19).

Russell's reply to this objection in *POM* is that the infinite regress implied by the theory is harmless. Russell distinguishes between two kinds of infinite regress: the harmful (vicious) and the harmless. "There are no contradictions peculiar to the notion of infinity... an endless process is not to be objected to unless it arises in the analysis of the actual meaning of a proposition" (§55). When it arises in the process of implications it is harmless. According to Russell, Bradley's argument against the reality of relations is based on the endless regress that arises from "the fact that a relation which relates two terms must be related to each of them" (*POM* §99). Russell accepts that the endless regress here is undeniable but he denies that it is of the vicious kind. Russell holds that "the assertion of a relation between the relation and the terms, though implied, is no part of the original proposition, and ... a relating relation is distinguished from a relation in itself by the indefinable element of assertion which distinguishes a proposition from a concept" (*ibid.*). Hence, Russell does not think that a nexus is necessary[15], as Bergman did, since he claims the regress incurred is not vicious.

Substratum theorists may speak of ordinary particulars possessing properties, as the Aristotelians do. But strictly speaking, it is the substratum, not the ordinary

[15] However, Hochberg claims that the early Russell's logical forms were exemplification patterns-monadic, dyadic, etc. Hence the logical forms were ontological ties for the early Russell (*The Positivist* 19). As far as I know, Russell never used this terminology of 'nexus' or 'ontological tie'. And why would he accept an ontological tie if he thought that the infinite regress incurred was harmless?

particulars that bears the properties. Substratum theorists believe that the logical subject, or the bearer of properties, can be understood independently of the properties it bears. Its existence does not depend on the existence of its attributes. Therefore, the bearer of attributes cannot be the ordinary particular. For the ordinary particular as a whole will include the properties. It does not have an identity independent of the properties (Loux *Metaphysics* 95–6).

Substratum theory is to be distinguished from the Aristotelian view of substance, according to which the subject is not a substratum, i.e. a constituent of the ordinary particular, but the whole substance. The Aristotelian substance is ontologically fundamental; it is not a whole made up of constituents. An Aristotelian ordinary particular has an essence; it belongs to a certain kind, such as being a human or a tree. Kinds, on the Aristotelian view, are universals that cannot be reduced to any other properties (Loux *Metaphysics* 119). On constructivist accounts, such as the substratum and bundle theories, since the ordinary particular is constructed, the identifying kind of an ordinary particular is not one of the universals that are exemplified in the ordinary particular or occur as its parts, but the kind-identifying properties are. For instance, being a tree will not be a part of the bundle, but the characteristic properties of a tree, such as having a woody stem with leaves, which may or may not shed them seasonally, will be part of it. It is only properties and/or substrata that go into the constitution of the ordinary particular. In contrast, on the Aristotelian view of substances, since the ordinary particulars are irreducible entities, the kinds to which things belong are essential to them.

The differences between the substance and the substratum theory are (1) on the substance view the ordinary particular is an irreducible entity, but on the substratum view an ordinary particular is reduced to a substratum and properties, and (2) on the substance view, the ordinary particular has an essence which is a certain kind that the individual belongs to and it also has accidental properties. The kind is an individuative universal. That a certain kind is instantiated twice means there are two individuals of that kind, i.e., instantiation of kinds does the job of individuation (Loux *Metaphysics* 123). But on the substratum theory, the task of individuation is on the properties and the substrata.

Substratum theorists have two main arguments for the existence of substrata. The first is an argument from language: They argue that we need substrata in order to explain attribute ascriptions. Something has to serve as a logical subject of properties in order that our sentences correctly describe reality (*ibid.* 112–3). The second is an ontological argument; the substratum theorists who believe in the reality of universal properties argue that substrata explain numerical diversity. When there are numerically different but qualitatively indiscernible particulars, we need an explanation as to how they can be numerically different although they have all their properties in common. According to the substratum theorists, it is the respective substrata of the two ordinary particulars that individuate one from the other (Allaire "Bare" 237).

Allaire prefers the term 'bare particular' to 'substrata'; he argues that they are different notions. Allaire distinguishes his view as bare particularism, argues that when we are acquainted with an ordinary particular, we are presented with its numerical difference, i.e., its bare particular:

> When presented together, [two discs], are presented as numerically different. That *difference* is presented as is their sameness with respect to shape, colour, and so on. What accounts for the difference are the numerically different individuals. No character [quality], or group of characters can do that... To claim that both discs are but collections of literally the same universals does not account for the *thisness* and *thatness*... That is, the two collections of characters are, as presented, numerically different. Clearly, therefore, something other than a character must also be presented. That something is ... a bare particular (Allaire "Bare" 242).

Allaire argues there is a distinction between 'the substratum view' and his 'bare particulars' view. He warns that a bare particular is not to be misunderstood as a Lockean substratum, an 'I know not what'. The basis for the distinction, he claims, is his adoption of the principle of acquaintance. He claims that we are acquainted with the numerical difference of a particular when we are acquainted with a particular. And this numerical difference is what he calls the bare particular. Hence, he argues, a bare particular is not an 'I know not what'. And Allaire holds that Russell must have meant the Lockean substratum when he denied being acquainted with individuals. Allaire says, "To one who accepts the [principle of acquaintance], Locke's phrase provides sufficient grounds for rejecting the entities he speaks of" ("Bare" 244).

Substratum theories have been criticized on empiricist grounds. The claim is that ontologically fundamental entities should be things we can experience. What experience gives is properties. But we cannot experience this putative thing that bears properties in ordinary individuals. A substratum is not something given in experience. It is postulated in order to explain how various properties are held together in one object. The later Russell expresses this: "One is tempted to regard 'This is red' as subject-predicate proposition; but if one does so, one finds that 'this' becomes a substance, an unknowable

something in which predicates inhere" (*IMT* 97). Although the later Russell rejects the notion of substratum, the early Russell embraced it. In defense of the substratum theory, Loux suggests a response to this problem that the substratum theorist could accept that substrata are not experienced but argue that we should overlook this fact due to the overwhelming need to explain attribute ascriptions and numerical diversity (114).

### 1.5 Particulars: Bundle Theory

Bundle theorists, such as the later Russell, Ayer (1954 Chapter 2), Hochberg (1964), and Castañeda (1974), deny the existence of substrata, mainly because of empiricist concerns. The ordinary particular, according to a bundle theorist, is no more than the totality of some properties. Realist bundle theorists, such as the later Russell, maintain that the ordinary particular is a series of momentary particulars over space-time, each of which in turn are composed of universal properties. What binds these properties together is the relation of compresence. The relation of compresence is considered to be an unanalyzable, primitive relation. It is a contingent relation into which properties enter, which explains the contingent existence of ordinary particulars. Universals on this view are multiply occurring or repeatable entities. Universal properties do not need a subject such as a substratum to be exemplified. The ontologically basic category for realist bundle theorists is the universal property. Universals for them are multiply occurrent entities; they are not entities that are exemplified by various substrata. They claim that particulars are constructed out of universals (Loux *Metaphysics* 99). Nominalist bundle theorists, on the other hand, hold that ordinary particulars are composed of tropes held

together by the relation of compresence, or 'connection of location' as D.C. Williams calls it (8).

Berkeley held the nominalist bundle theory for physical objects, but not for minds. In Section 49 of his *Of the Principles of Human Knowledge* Berkeley says, "... To me a die seems to be nothing distinct from those things which are termed its modes or accidents. And to say a die is hard, extended and square, is not to attribute those qualities to a subject distinct from and supporting them, but only an explication of the meaning of the word *die*" (120). Hume held the bundle theory for both minds and physical objects. In "An Abstract of a Treatise of Human Nature", Hume says, "The mind is not a substance in which the perceptions inhere... We have no idea of substance of any kind since we have no impression of any substance either material or spiritual. We know nothing but particular qualities and perceptions" (*IMT* 194).

According to the bundle theory of ordinary empirical particulars, whether realist or trope theorists, there is only one ontological category. The nominalist trope theorist takes this category to be that of the particular, such as tropes for D.C. Williams and Hume. On the nominalist bundle theory, the ontologically basic entities are the tropes that are particular properties, or 'individual property instances', as Russell would call them. For realist bundle theorists, this category is that of the universal, such as the later Russell's universal qualities.

Goodman and Quine also construct individuals out of particular properties. They are nominalists, but they do not identify properties with classes: "The nominalistically minded philosopher like myself... will so far as he can avoid all use of the calculus of

classes, and every other reference to non-individuals, in constructing a system" (Goodman *The Structure* 25-6). Since Goodman rejects classes as entities, he does not use variables that range over classes. He believes, with Quine, that "if we use variables that we construe as having entities of any kind as values, we acknowledge that there are such entities" (*ibid.* 24). Instead of a quality class 'blue', Quine suggests that blue is a scattered individual; a discontinuous individual found here and there. He views "'red' quite on a par with 'Cayster' [the river], as naming a single concrete object extended in space and time" ("Identity" 69).

I now turn to a brief introduction of the three major objections that a realist bundle theory faces. These problems will be discussed in detail in Chapters 4, 5, and 6. The first I will call the problem of individuation. The realist bundle theory faces the substratum theorists' charge that the bundle theory is false because the principle of the Identity of Indiscernibles, to which the bundle theorist is committed, is false. Substratum theorists believe the principle is false because there can be indiscernibles which are not identical. It is claimed that the bundle theorist's use of the ontological terminology of 'constituents and wholes' implies that the whole constructed is nothing more than the totality of what makes it up. Objectors claim that the constituents of a (concrete) particular, on the bundle theory, are all its properties. Therefore, the bundle theory, it is argued, has to accept that if two particulars have the same attributes, they have to be numerically identical (Loux *Metaphysics* 107). There is nothing among the constituents of a particular that is not a property. Hence, when two particulars share all their properties there is nothing left to differentiate the two. However, on the substratum

theory what differentiates the two qualitatively identical particulars are their respective substrata. Each ordinary particular has its own unique constituents, i.e. its own unique substratum.

Another problem for the bundle theorist is that the constituents of a bundle would seem to be necessary constituents. I will call this objection the problem of necessity. The charge is "if the attribute did not enter into the constitution of the object, that object would not exist" (*ibid.* 105). The objection is that since it is necessarily true that a bundle is a group of properties, the properties of a particular must be essential to it. Therefore, all propositions where a property is attributed to a particular express necessary truths. Substratum theorists, on the other hand, do not face such a difficulty because the particular to which a property is attributed is bare. Therefore, true propositions about particulars under the substratum theory will be contingently true.

The third objection, the problem of analyticity, is that the bundle theorists are not able to give a satisfactory account of subject-predicate discourse. When bundle theorists analyze the sentence "The cardinal is red", they will hold that the subject is a bundle of properties and the relationship between the predicate and the subject is that of claiming that the property in question is a constituent of the bundle. But substratum theorists find this answer unsatisfactory in the sense that all subject-predicate sentences become tautologies or analytic truths. Assuming that grasping a bundle requires knowledge of all its constituents, they claim that no subject-predicate sentences can be both true and informative. We would know the truth-value of the sentence just by virtue of the meaning of the word for the bundle (*ibid.*).

The motivation to salvage the realist bundle theory is mainly economical. If we can give an account of the world based only on one category of existence, we should opt for that option. But then why not accept merely individual properties as ultimate constituents instead of universals? Russell's answer is, "retaining 'things' does not enable us to dispense with qualities[16], whereas bundles of qualities fulfill all the functions for which 'things' are supposed to be needed" (Schilpp 697).

[16] Russell's argument against individual properties, which we will look into in Chapter 2, is the reason why retaining things or particulars does not allow us to dispense with properties.

## Chapter 2: The Early Russell's (1903-13) Substratum Theory of Particulars

Before we delve into the early Russell's substratum theory of particulars, a terminological introduction is in order. I divide terminology such as 'terms', 'predicates', 'qualities', 'relations', 'particulars' and 'universals' into three groups: (1) as part of a sentence (grammatical function), (2) as they are used in logic and/or semantics, and (3) the ontological statuses they have.

Terminology with examples:

| | *Parts of a sentence (Gr.)* | *Logic/Semantics* | *Ontology* |
|---|---|---|---|
| Kent | subject (proper name) | term | particular[17] |
| Kent flies[18]. | predicate (verb) | monadic relation | universal |
| The wall is black. | predicate (adjective) | quality (monadic rel.) | universal |
| Violet is a flower. | predicate (substantive) | quality (monadic rel.) | universal |
| Dogs chase cats. | verb | dyadic relation | universal |

("The Philosophy of Logical Atomism" 199-200).

What about properties? Russell does not use the word 'property' in a specific, consistent manner throughout his works. His logico-semantic terminology consists of terms and relations, and the latter are the same as qualities when they are monadic. I think Russell would treat 'property' as belonging to grammar, rather than logic/semantics, for he makes a distinction in *My Philosophical Development* between predicates and

[17] Only until 1940. After 1940, a term will stand for a bundle of universals.

[18] Predicates and relations could be subjects until 1914. Russell in PLA (1918) says that his views changed after his discussions with Wittgenstein in 1914 (205).

properties, which assumes the two belong to the same category. The conception of a property is wider than that of a predicate: "A predicate will be something that can occur in a proposition containing nothing else except a name – e.g. 'Socrates is human'. A property will be what is left of any proposition in which a name occurs when that name is omitted or replaced by a variable. You may say, for example, 'If Socrates had been more conciliatory, he need not have drunk the hemlock'. This may be considered as asserting a property of Socrates, but not as assigning a predicate to him" (*MPD* 124). If I understand him correctly, properties are wider than predicates in the sense that one can turn anything said about a subject into a property. *A* flies, therefore *A* has the property of flying. *A* likes *B*, therefore *B* has the property of being liked by *A*, for example.

Qualities include both sensible properties and kinds. In *Problems of Philosophy*, Russell defines 'quality' as "the universals represented by adjectives and substantives [nouns]" (54). Qualities that are sensible properties are colours, sounds, tastes, sensations of touch, relations of position in a perceptual space, and of temporal order in perceptual time. The latter two are considered as qualities only in the later period. Relations include all relations from 2- place to *n*-place.

### 2.1 The Argument for Particulars

The view that the early Russell holds the substratum or bare particular view is supported by Loux (*Metaphysics* 98) and hinted at by Hochberg. According to Hochberg, the arguments in Russell's "On the Relations of Universals and Particulars", "do not argue for bare particulars, but for particulars and numerical difference. But they also serve as

arguments for bare particulars" ("Things and Qualities" 85 fn. 1). I think the arguments in question do argue for bare particulars, since numerical diversity is explained by the bare particular (substratum) the ordinary particular has.

Russell's notion of 'term' in *POM* suggests that he takes particulars to be substrata. In *POM*, anything that can be an object of thought is called a term, e.g., a person, number, chimera, relation. They are individuals, i.e., numerically diverse, and they are entities, i.e., they have being in some sense. He regards terms as incapable of modification by having different relations. Russell holds that "a term is possessed of all the properties commonly assigned to substances or substantives" (§47). He lists the commonly attributed properties as: being a logical subject, being immutable and being indestructible: "What a term is, it is, and no change can be conceived in it which would not destroy its identity and make it another term" (*ibid.*). Consider 'Socrates is mortal' and 'Mortality is a person's biggest worry'. According to Russell, in the propositions expressed by these sentences both Socrates and mortality[19] are terms. As logical subjects, they are supposed to have unchanging natures. Mortality, as a property is unchanging. But Socrates did change; he was young, then he aged. There are two ways in which Socrates could have such a nature: what we mean by Socrates is Socrates's essence or all there is to Socrates is his substratum that bears various properties at different times. The term, Socrates, is also supposed to be numerically identical to itself and numerically diverse from everything else. But if Socrates is Socrates's essence, unless the essence in question is an individual essence, i.e., some property that only Socrates had, such as

[19] "A proposition, unless it happens to be linguistic, does not itself contain words: it contains the entities indicated by words" (Russell *POM* §51).

being the teacher of Plato or the identity property of being identical to Socrates, his essence will consist of properties such as being a rational man. Such a property is shared by a number of other individuals; so Socrates is not numerically diverse after all. Both the property of being the teacher of Plato and the property of being identical to Socrates are relational properties, and as such cannot be part of the logical subject. Therefore, all there is to Socrates is a substratum.

Russell in MPD explains that his view of particulars in *POM* led to a substratum view and he looked for a way to escape it:

> There was another class of difficulty which was connected with the well-established objections to the notion of substance. It seemed as if the particulars which I had denoted by small Latin letters would have to be substances in a syntactical sense, though they would not need to have the property of indestructibility which substances were traditionally supposed to possess. If the statement that *x* has such and such a property[20] is always significant, and never analytic, it seems to follow that *x* is something different from the sum of all its properties, and it must differ from another particular, *y*, purely numerically, so that it should be logically possible for the two particulars, *x* and *y*, to share all their properties and yet be two. We could not, of course know that they were two, for that would involve knowing that *x* differs from *y*, which *y* does not do: *x*, in fact, would become a mere unknowable substratum, or an invisible peg from which properties would hang like hams from the beams of a farmhouse. Such considerations make the concept of 'particulars' difficult, and invite a search for some way of escape (*My MPD* 119-20).

Russell gives two arguments for the substratum view. The first one is from the problem of individuation. This argument is given both in 1903 and in 1911. The Russell of *POM* holds that every term is immediately diverse, without appealing to any properties or relations they have. And this can only be explained by things (individuals) having

[20] In this passage, Russell does not abide by the distinction between 'property' and 'predicate' he makes several pages later, i.e., page 124, in *MPD*. For if he did, he should have used the word 'predicate' instead of 'property'. Since he later claims that 'property' is wider than 'predicate', 'being identical to x' should be a property, and that property cannot be shared by two things.

substrata or by their being at certain points and instants. In the quoted section below, Russell discusses numerical diversity:

> It is a sheer logical error to suppose that, if there were an ultimate distinction between subjects and predicates, subjects could be distinguished by differences of predicates. For before two subjects can differ as to predicates, they must already be two; and thus the immediate diversity is prior to that obtained from diversity of predicates. Again, two terms cannot be distinguished in the first instance by difference of relation to other terms; for difference of relation presupposes two distinct terms, and cannot therefore be the ground of their distinctness. Thus if there is to be diversity at all, it must be immediate diversity, and this kind belongs to points (*POM* §428).

This argument concludes that there is something which gives terms ultimate diversity. Russell thinks terms must have unchanging natures in order that they may enter into relations with each other. There are two ways in general that terms have ultimate numerical diversity: (1) Every term is at a point and instant which are considered to be entities or (2) Every term has a substratum which is peculiar to it. And since in section §428 the terms Russell is talking about are points, (1) is the more likely option. Besides, during the time of *POM* Russell holds the absolute theory of space and time (*POM* §424), thus the points and instants as entities secure numerical distinctness. However, it may also be that in this early period substrata were these points and instants.

Later in 1911 Russell holds the relational theory of space-time due to the theory of relativity, and yet still thinks terms must be immediately diverse. When he adopts the relational theory of space-time (in both perceptual and physical worlds), there are no more unique points and instants which could account for the numerical diversity of terms prior to their difference in qualities. This shows that around 1911 he still had to appeal to substrata.

In 1911 Russell's argument for the existence of particulars is the following. Suppose there are two patches of white in my visual field. They are qualitatively identical. If one assumes that perceptual space is absolute[21], then the different places of the two whites will account for the diversity. But Russell around 1911 takes perceptual space as relative, not absolute. "Absolute positions are not among objects of perception" ("On the Relation" 116). When space and time are taken to be relative, there must be a way of distinguishing between two qualitatively identical things. For according to the relational view of space-time, there are no absolute points in space or absolute instants in time that individuals occupy. The location of each individual is determined by its relations to other individuals. Russell argues that two whitenesses cannot be distinguished in terms of their spatio-temporal relations to other things. This would require that the whitenesses are already numerically diverse, i.e., unique particulars. Suppose there are two whitenesses; one surrounded by redness and the other surrounded by black. We can distinguish the two whitenesses in terms of their relations of being surrounded by red or black. But for this distinction to be valid, we must know that it is impossible for something to be both wholly surrounded by red and wholly surrounded by black at the same time. This "presupposes the numerical diversity of our two patches of white" (*ibid.* 117). Later in *My Philosophical Development*, Russell would write, "the two patches differ only in position, and since position is not a quality (or so I thought) it presupposes diversity and cannot constitute it" (121). Russell thought in 1911 that "terms of spatial relations cannot be universals or collections of universals, but must be particulars capable

[21] The later Russell (1940) will maintain that perceptual space, though not physical space, is absolute. See Chapter 3.

of being exactly alike and yet numerically diverse" ("On the Relation" 118). Russell here explains numerical diversity by the substrata each particular has. He requires particulars to have substrata as well as qualities just so that there can be numerically distinct but qualitatively identical things on a relational theory of space and time.

Russell of 1911 argues that the realist bundle theory, which takes terms of relations to be universals or bundles of universals, is wrong[22] (*ibid.*). But when the later Russell recognizes that the position in perceptual space is absolute, he will have the opportunity to abandon particulars as composed of substrata and universal qualities in favor of bundles of universals. For when perceptual space is taken to be absolute, there will be points (locations) in the perceptual space that one can use to distinguish two qualities or bundles of qualities that are alike. For instance, a bundle of blue and round qualities will have the quality of centrality (due to being in the center of my visual field) while another blue and round bundle will have the quality of dexterity (due to being to the right of the center of my visual field). These positions will distinguish the two blue and round bundles.

The second argument for the existence of particulars is from the construction of time series. We must have numerically diverse particulars so that we can generate spatio-temporal series (*MPD* 121). It seemed to Russell that "the time series and the space of geometry could not be constructed without the use of materials that had unique spatio-temporal position, and that such materials could not be found if particulars were rejected" (*ibid.*). To better understand this argument, we will go on a small excursion to Russell's

[22] We'll discuss this argument in Chapter 4-The Problem of Individuation.

views of time that he advocates in *Theory of Knowledge* and resume the discussion of substrata afterwards.

According to Russell's view of time, what is objectively real is that some events happen earlier than others; some events succeed others. But the tensed time that we express with the present, past and future tenses, such as 'I am writing *now*', is not an objective part of the world, for it is dependent on our experience. Russell explains that there would not be a present, past or future if there were no experience, but there might well be earlier and later, even without experience. "There is no logical reason why the relations of earlier and later should not subsist in a world wholly devoid of consciousness" (*TK* 73-4). Hence Russell's view of time is what is called 'the block view' (or the B-theory), according to which temporal passage is not an objective part of the world. It is dependent on our perspectives. As Dainton describes that view, "All moments of time are equally real, and there is no moving or changing present; nothing becomes present and then ceases to be present. The differences between past, present, and future are simply differences of perspective" (Dainton 7-8). And the truth-makers of tensed propositions are not tensed facts, but facts of the physical time. Russell holds that tensed propositions are equivalent in meaning to untensed ones. Hence they can be translated into each other (Dainton 32).

The early Russell tries to explain tenses by appeal to the relation between the sensing subject and the object. It is this relation that gives us the mental time, as opposed to the physical time. Relations of sensation and memory give time relations between subject and object. Physical time, on the other hand, depends on the relations between

objects themselves. Relations of simultaneity and succession give time relations between objects (*TK* 64). Hence, to construct mental time series, Russell will need elements he can put in a succeeding order. Those elements are total momentary experiences, which are a collection of simultaneous objects of acquaintance.

Russell explains the present tense by appeal to his theory of acquaintance. Sensation is the "kind of acquaintance with particulars which enables us to know that they are at the present time" (*TK* 66). And something is 'now' when it is simultaneous to a 'this', an object of sensation, where simultaneity is a relation among objects. Past tense is explained by memory (*TK* 65). Here is his argument for sensation involving presentness: There cannot be any intrinsic difference between present and past objects. Sometimes, the object of sensation (sense-datum) and the object of imagination are the same, hence the difference between sensation and imagination cannot lie in their objects, but will lie in their being different relations between the subject and the object (*TK* 54). Similarly, there should be a different relation between subject and object when the object is past or present. We know by introspection which objects are past or present (*TK* 66).

Later in *IMT* (1940), Russell will still explain presentness as based on a relation, but the subject is not a mind, it can also be a machine that says "'this is red' and 'that was red'... on suitable occasions" (*IMT* 111). For in *AMi* (1921), Russell rejects the subject (mind) as a substance, which gets in a relation with an object. He'll appeal to the egocentric particular 'this' to explain *now*: "All egocentric words [I, here, now, past, present, future] can be defined in terms of 'this'... 'now' means the time of 'this'" (*IMT* 108). He says what differentiates past from present is the different causal relations

involved in both cases. If there is a minimal causal chain between the speaker (or machine) and the stimulus, then it is present; if there is a longer chain, then it is past. Furthermore, the causes in perceptive use of a word and reminiscent use of a word are different as well. For instance, if I say "This is a cat', i.e., if I see a cat *now*, the perceptive stimulus will be a cat, but if the stimulus is reminiscent, that is, if I say 'That was a cat', there must also be some other present stimulus. Perhaps a friend asked me what I saw (*IMT* 112).

In explaining order in mental time, Russell (1913) uses total momentary experiences ('*tome*' hereafter) as elements. A '*tome*' is defined as "a group of objects such that any two are experienced together, and nothing outside the group is experienced together with all of them" (*TK* 67). This definition of a *tome* creates a problem for the construction of physical time, though not for mental time. It seems possible that a *tome* might recur. If it does, 'the present time' will become ambiguous (*ibid.* 68–9). Russell points two ways out of the problem: (1) show that recurrence of a *tome* is impossible or (2) accept absolute time, that is, "admit that there is an entity called a 'moment' which is not a mere relation between events, and is involved in assigning the temporal position of an object" (*ibid.* 69). In the case of mental time, recurrence is not a problem because recurrence does not happen in experience. In construction of the series for physical time, Russell will use events. But the definition of instants in physical time will be similar to that of the moment in private time, i.e., a *tome*. An instant is defined as a group of events, any two of which are simultaneous and nothing outside the group is simultaneous with all

in the group. Then "an event is 'at' an instant when it is a member of the class which is that instant" (*ibid.* 74).

To define time series in physical time Russell uses the 'simultaneity' relation, which is "a relation between objects primarily, rather than between object and subject. But in the later period, he will drop simultaneity in favor of compresence. One reason for this change is the finding of the special relativity theory that simultaneity is actually ambiguous. Simultaneity of events experienced in the perceptual realm is not ambiguous, but simultaneity becomes ambiguous in the case of the physical realm. Russell explains that Einstein's work showed that "simultaneity is ambiguous when applied to events in different places" (*HK* 287). Two events may appear simultaneous from one perspective, but not simultaneous from another. "Two events in distant places may appear simultaneous to one observer who has taken all due precautions to insure accuracy (and, in particular, has allowed for the velocity of light), while another equally careful observer may judge that the second preceded the first. This would happen if the three observers were all moving rapidly relatively to each other" (Russell *ABC* 35). Thus, 'compresence' is used both for the relation between qualities simultaneously experienced and for the relation between qualities that overlap in space-time (*IMT* 231).

Now in order to construct a physical time series, the relation of succession has to be asymmetric and transitive (Russell *TK* 75). But if recurrence or persistence is possible then succession cannot be transitive, or even asymmetrical. Succession is not asymmetrical if A occurs before and after B. "If B occurs both before A and after C, while A occurs before C but never occurs after C , A will succeed B and B will succeed

C, but A will not succeed C. Thus, succession will not be transitive" (*ibid.*). If everything in the universe at one instant recurred after an interval, the anterior and posterior instant would be identical. Russell in *TK* argues that it is not a good answer to say it is improbable that everything in the universe at an instant should recur. But interestingly Russell of *HK* will find this answer acceptable. If it did recur, the early Russell says, there would be two occurrences that are not numerically identical. "It would be contrary to self-evidence to say that there was strictly *one* occurrence, which was anterior and posterior to itself. Without taking account of the whole universe, if a thing A exists at one time, then ceases, and then exists again at a later time, it would be more natural to say something similar reappeared than to say the same thing appeared" (*TK* 76).

As a solution, Russell assumes a view of persistence, according to which if something ceases to exist and reappears then it is not numerically the same object. But if it continues to exist with no cessation then it persists as one object. "If A precedes B and is not simultaneous with it, while B precedes C and is not simultaneous with it, then A and C are numerically diverse" (*ibid.*). That is, the early Russell's solution to the problem of recurrence is the adoption of particulars that persist for a finite period of time. So, the problem of recurrence of an instant, which is construed as a group of simultaneous events, is one reason why the early Russell opts for a substratum theory of particulars.

So far I have regarded the substratum view as the same as the bare particular view. But as we saw in Chapter 1, Allaire distinguishes between the two. Allaire himself argues for the bare particular view, and he bases it on the principle of acquaintance. If two groups of qualities are qualitatively alike but numerically diverse, we know that they

are diverse because they are presented to us in acquaintance as two things. We are acquainted with the particularity of these objects as well as their sense-data (241-2). If we apply Allaire's distinction, Russell's view would ultimately be a substratum view because Russell's notion of acquaintance does not include being acquainted with the particularity of an object.

**2.2 The Ordinary Particular, its Qualities, and Sense-Data:**

In this early period, in *Problems of Philosophy* in particular, the ordinary particular (material object) is an inference based on the sense-data presumably caused by the ordinary particular. The material object which gives rise to these sense-data and sensibilia is an inference to the best explanation (Griffin "Introduction" 30). "What we call a 'thing' ... is a complicated inference from correlated sense-data" (*TK* 94). Sense-data are the effects of the relation between a perceiving subject and the material object. In POP, he defines sense-data as "the things that are immediately known in sensation: such things as colours, sounds, smells, hardnesses, roughnesses, and so on" (4). A sense-datum is an object of sensation, and sensation is a form of acquaintance (*TK* 66). "When I speak of a sensible object [a sense-datum], ...what I mean is just that patch of colour which is momentarily seen when we look at the table, or just that particular hardness which is felt when we press it, or just that particular sound which is heard when we rap it" (*OKEW* 83). Sense-data, then, are particulars.

Sense-data are particulars. But they are not to be taken as particular qualities or property-instances, since such a view conflicts with Russell's arguments against

property-instances in *The Principles of Mathematics* and *The Problems of Philosophy*. Sense-data are not qualities that belong to the material objects. The material object is the instance where certain universal qualities are exemplified. (Strictly speaking, it is the substratum in an ordinary particular that exemplifies qualities). According to Russell, we are supposed to be acquainted with sense-data as well as with universal qualities themselves (*POP* 28).

Russell's argument against property-instances and for universals first appears in *The Principles of Mathematics*:

> Even if differences did differ, they would still have to have something in common. But the most general way in which two terms can have something in common is by both having a given relation [predication relation] to a given term. Hence if no two pairs of terms can have the same relation, it follows that no two terms can have anything in common, and hence different differences will not be in any definable sense *instances* of difference (*POM* §55).

Two specific differences would have to have something in common because after all, they are both "differences", and that has to be explained. If 'difference' refers to a class, i.e., the class of all pairs that are different from each other, then all the pairs will have the same relation to the class-concept, 'difference', which is the class membership relation. And for something to belong to a class, it must fit some class intension, in our case, difference. And the members will have to have the same relation, i.e. same membership relation to the class, difference. But according to the particular properties view, there are no shared relations (Griffin and Zak 62). Griffin and Zak argue that this is a good argument as long as one wants to keep the notion of class intact. They point out, however, that it only shows that a theory where there are no universal relations at all

would be false. It does not refute a mixed theory where all relations except for class membership are particulars. Therefore, this argument should not be considered as one that shows that all relations should be universals (*ibid.* 62-3).

Russell has an argument in *POP* against nominalism, but which also serves as an argument against property-instances:

> If we wish to avoid the universals *whiteness* and *triangularity*, we shall choose some particular patch of white or some particular triangle, and say that anything is white or a triangle if it has the right sort of resemblance to our chosen particular. But then the resemblance required will have to be a universal. Since there are many white things, the resemblance must hold between many pairs of particular white things; and this is the characteristic of a universal. It will be useless to say that there is a different resemblance for each pair, for then we shall have to say that these resemblances resemble each other, and thus at last we shall be forced to admit resemblance as a universal. The relation of resemblance, therefore, must be a true universal. And having been forced to admit this universal, we find that it is no longer worthwhile to invent difficult and unplausible theories to avoid the admission of such universals as whiteness and triangularity (*POP* 55).

Suppose we have a particular A and we call its colour 'white'. Then we find another particular, B, which is also white because we see that it resembles A. And yet we find another particular, C, it also resembles A and B in that respect. Now we have the same relation, 'resemblance', holding between three things. The 'sameness' of this relation can be explained either by a universal or by regarding each case of resemblance a particular one: R1: resemblance between A and B, R2: resemblance between B and C, R3: resemblance between A and C. Now R1, R2, and R3 resemble each other. The resemblance between these particular resemblances will also have to be explained. Again if the explanation is that this new resemblance between resemblances is particular, then the regress of resemblances will go on indefinitely.

Rodriguez-Pereyra, a resemblance nominalist, denies that his position is committed to an infinite regress of resemblances (107-23). According to him, a regress does not start because the resemblances between pairs [A, B] and [C, D] do not need a subsistent entity, 'resemblance', or another particular resemblance to account for the resemblances. It is A, B, and C themselves that account for it. To explain, he draws attention to the fact that resemblance nominalism is an account of what makes 'A is white' true. On this account, what makes 'A is white' true is that A resembles B, which is also white (Rodriguez-Pereyra 110). And what makes 'A resembles B' true is the natures of particulars A and B. "If [A] and [B] resemble each other, then their resemblance is a fact because of their being the entities they are, and so [A] and [B] are the sole truth-makers of '[A] and [B] resembles each other'. There is then no need to postulate extra entities to account for facts of resemblance" (*ibid.* 115).

On this account, what makes 'A resembles B' true will be the natures of A and B. But it seems to me that A and B cannot have any features to ground the resemblance. If there are no particular resemblances, then the nature of A does not include the property of resembling to B as a constituent, and neither does B include the property of resembling to A. If that is the case, then the nature of A and B should consist of qualities, which would provide grounds for making 'A resembles B' true. But there cannot be any qualities as part of the nature of A and B on this account because 'A is white' is made true, not by the white in the nature of A, but by the fact that 'A resembles B'. Hence, the resemblance relation cannot be explained by the natures of A and B.

Secondly, Rodriguez-Pereyra argues that Russell is also wrong when he argues that accepting one universal, resemblance, would make denying other universals pointless. Rodriguez-Pereyra points out the distinction between qualitative and quantitative economy. On qualitative economy, the goal is to keep the kinds of entities to a minimum, and on quantitative economy, we try to keep the number of entities in each kind to a minimum (107). And each has its virtues as argued by D. Nolan (1997). "A theory admitting *n* universals of resemblance [due to the regress of resemblances] would be quantitatively more economical than a full-blooded realism postulating a universal for each determinate property" (Rodriguez-Pereyra 122). I agree with Rodriguez-Pereyra on this point. If one accepts only the relation of similarity as a universal, and no others, this is still some achievement. It should be recognized as such. But it remains true that reducing *kinds* of entities to one would not have been achieved.

Weitz argues Russell held in the 1912 article "Knowledge by Acquaintance and Knowledge by Description" that qualities and relations have instances. Weitz writes, Russell is "so convinced that universal relations do have instances that he devotes most of his argument to the proof that we are acquainted with universal relations themselves. He writes, e.g., 'Thus we must suppose that we are acquainted with the meaning of 'before', and not merely with instances of it'" (Schilpp 69). However, Russell in reply denies that in 1912 he held the view that relations or qualities have instances and claims that he held this position continuously since 1902. Russell says, "when I say 'A is human' and 'B is human' there is absolute identity as regards 'human'... there are no two humanities, nor two differences" (Schilpp 684).

I think this confusion arises because Russell does not make clear what he means by an 'instance'. It might be interpreted to mean a specific property or relation, or it might be taken to mean the particular in which a universal property is exemplified or instantiated. I think Russell means the latter. When he says in this period that a particular is an instance of a universal, he means a ordinary particular whose bare particular exemplifies a universal. The view he rejects is that there are particular qualities and relations as well as universal ones.

### 2.3 The Rejection of Material Objects in OKEW (1914)

Russell refuses to accept material substance in *Our Knowledge of the External World*. What he has in mind in rejecting substance is the inferred entity, material substance, which was composed of a bare particular and qualities. He denies the need to accept permanent material objects as causes of sense-data. One of Russell's reasons for rejecting substance is that there is no empirical evidence for it. All we are acquainted with are sense-data; we are not acquainted with the supposed material substance that causes them. The early Russell's analysis of an ordinary particular yields the substratum and qualities. The simples of an analysis are supposed to be things we are acquainted with (Russell *TK* 119). However, substratum is not something that we can be acquainted with. This is the main reason why Russell drops the substratum theory for ordinary particulars in 1914.

The substratum ensured the persistence of the same object through time. But now Russell thinks that what makes one think that some table is the same table used on a previous occasion is all the similarities of appearances and the similarity of the

correlations of those appearances. We do not experience a substance when experiencing a table. Russell notes though that he is not denying the existence of material objects, and neither is he affirming it. He says there is no empirical evidence for either position (*The Philosophy of Logical* 273-4).

Russell thinks we have no reason other than prejudice in favour of permanency. For example, we have no reason to believe that ice when melted is the same substance. What we directly know is that the appearance we call ice has been replaced by the appearance we call water, and we can formulate laws as to how each behaves. But that is all. We have no reason to accept that the two appearances are of the same substance (*On OKEW* 110). He no longer believes that inferring the existence of enduring material objects is the best explanation of our experiences.

Now Russell claims "the persistence of things through time is to be regarded as the formal result of a logical construction, not as necessarily implying any actual persistence" (*ibid.* 153). However, we should note that after Russell adopts the bundle theory, he will accept 'quasi-permanence' as a postulate we need in order to be able to make scientific inferences to gain knowledge about the external world. But the differences are that this postulate of persistence does not make a certainty claim; it does not maintain that every particular necessarily persists, but instead that it is highly probable that every particular persists. Also, every particular is a complex of compresence of qualities; they do not need a substratum to exemplify them. *Our Knowledge of the External World* was an attempt to gain knowledge of the external world using merely deductive inference, which gives certainties. But later he will not find

deductive inferences sufficient. He'll argue for the need for non-demonstrative inferences, such as that ensured by the postulate of quasi-permanence. "The method of Cartesian doubt, which appealed to me when I was young, and may still serve as a tool in the work of logical dissection, no longer seems to me to have fundamental validity. I have come to accept the facts of sense and the broad truth of science as things which the philosopher should take as data, since, though their truth is not quite certain, it has a higher degree of probability than anything likely to be achieved in philosophical speculation" (*MPD* 153).

In 1914, having decided that the material object with its bare particular and qualities is empirically inaccessible, Russell rejects affirming its existence; he tries to construct particulars out of sense-data, instead of inferring their existence. Russell wants to have empirically given things, i.e., sense-data, at the foundation of knowledge and then logically construct the entities we call material objects. He admits that conceiving "a system of correlated particulars, [i.e., a class of sense-data] hung one to another by relations of similarity and continuous change and so on" (*Philosophy of Logical* 273) is complicated, but that this is what is empirically given.

Russell defines a thing as "a certain series of appearances, connected with each other by continuity and by certain causal laws" (*OKEW* 111). He takes wallpaper as an example. To assume that there is a permanent entity, the wallpaper, which "has" the various fading colours, is just "gratuitous metaphysics" (*ibid.* 112). Such a substance is not empirically given to the perceiver. Instead he defines the wallpaper as "the series of its aspects" (*ibid.*). By doing so, he uses Ockham's principle that advises us not to

"multiply entities without necessity" (*ibid.*). We find the entities that we cannot do without, which are the successive appearances in experience, and then define any other purported entity in terms of these appearances (*The Philosophy of Logical* 280).

A piece of wallpaper is a series of classes. It presents appearances at a given moment. We logically construct a class out of these appearances. The class is a collection of all the appearances of the wallpaper from different perspectives at a time. Then, we construct a series out of the classes of the appearances of the wallpaper at each moment. This series stands for the material object wallpaper (*The Philosophy of Logical* 275). There is no need to assume a persistent substance (*ibid.* 276).

We know perceptual and physical space-time were relational for Russell at least since 1911—for he makes it explicit in his 1911 article—and until 1940. And I have not found anything to suggest otherwise in *OKEW* (1914). However, if space-time is relational in *OKEW*, this means there are no instants and points as entities to provide numerical diversity between qualitatively alike groups of sense-data. Besides, he has rejected the substratum, with the material substance, so the substratum cannot do the job of individuation either. So what will account for it? The only possible candidate seems to be the sense-data themselves, since they are particulars (*TK* 55), just like the events to follow in *AMi* and *AMa*. What he refuses the existence of in *OKEW* is the material object, with its substratum and qualities. The substratum flag now has passed on to these fleeting, private appearances. In *AMi* and *AMA*, mental events and physical events respectively, will carry the flag.

## 2.4 From Sense-Data to Sensations

Russell of POP claimed we could be acquainted with objects of sensation (sense-data) and then infer the material objects. Hence, the having of sensations was a form of knowledge for Russell in POP. However, he realizes, in 1919[23], that his earlier view that sensation is cognitive had led him to distinguish between sensing (sensation) and what is sensed (sense-data), which in turn required a perceiving mental substance, a subject in a cognitive relation with an object, i.e., the sense-data (*AMi* 141). But once he has decided that there is no good ground for assuming mental substance to exist, he let the distinction between sensation and sense-data go in 1919. Without the subject, who through sensation knows sense-data, sense-data are no longer objects of knowledge. Sensation and sense-data are not distinguished from each other (*AMi* 142). "The sensation that we have when we see a patch of colour simply is that patch of colour, an actual constituent of the physical world" (*AMi* 142). Russell later on regards sensations as causes of knowledge, but he does not regard them knowledge in themselves any longer (*AMi* 144).

Russell, as of 1919, abandoned dualism on the nature of the ultimate reality in favour of neutral monism. I will survey his views on neutral monism to show how his view of neutral ultimate reality fits into his later theory of particulars, that is, the bundle theory.

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[23] In the draft of *Analysis of Mind* (1919), Russell writes, "Sensations belong in equal measure to physics and to psychology: they are the intersection of mind and matter. [cf. Mach, *Analysis of Sensations*]. They are not instances of knowledge: 'they simply come and are' (James). There is no distinction of subject and object in sensation, nor is there any distinction between sensation and sense-datum" (Collected Papers Vol. 9, 4).

According to neutral monism, the ultimate reality is a neutral kind. It's neither mental nor physical. It is presented or perceived either in mental terms or physical terms depending on the kind of causal laws involved, at least according to Russell's version of it. Russell, as of 1919, believes that neutral monism, according to which sensations are fundamentally neutral (things which can obey both mental and physical laws), is a better ground for bridging the gap between the world of sense and the world of physics. Earlier in *OKEW*, the stuff of the world of sense (sense-data) was of the same kind, i.e. physical, with the stuff of physics, and thereby they constituted the bridge between the world of sense and the world of physics. But now that sense-data are abandoned, neutral events will take the place of common ground between the two worlds. Neutral monism guarantees that there is something of the same kind, namely the neutral stuff, as basis for both the mental and the physical. By "stuff" he explains later in 1944 that he meant 'particulars', by which he means objects designated by proper names (Schilpp 698).

The mental and physical objects are constructed out of the neutral stuff, namely sensations. A physical thing is a bundle of sensations arranged according to physical causal laws. First the laws of perspective bring together the sensations of one thing at one time from different places to form a momentary thing, and then laws of dynamics bring together such classes of sensations to form one thing. For instance, Jones is a series of occurrences bound together by causal laws, not similarities, though various appearances of Jones will quite likely be very similar. But the causality here is not one of traditional physics, where Jones would have been considered the "real" cause of all the appearances presented to different observers (*AMi* 97). Russell instead takes the whole class of

sensations as actually being Jones (*AMi* 98). What bring together the various appearances of Jones are such physical causal laws as the laws of perspective, reflection, and diffraction of light. This is the same for all physical objects (*AMi* 99) and all physical objects are systems of particulars (*AMi* 102).

In the world of psychology, first the laws of dynamics collect together successive sensations of one thing, and then such class of sensations are brought together to form an experience or biography (*AMi* 126). Russell, having denied that there is a subject, a mental substance, which is supposed to be in relation with the physical world, explains the subject as a construct of sensations and images, which are causally dependent upon sensations.

In his earlier assessment of W. James's neutral monism, in his posthumously published *TK* in 1913, Russell claims that the merits of the theory are first, it abides by Ockham's principle of simplicity and reduces the number of the kinds of entities we accept. Second, with neutral monism, sensation is a neutral ground from which we can easily pass to mind or matter (*TK* 21). Therefore, there is no mind-matter interaction problem to be concerned with. Third, the dualists define physical as what is in space and the mental as what is not in space. Russell finds it problematic to describe what is physical as what is in space. Mathematics has constructed many possible spaces; psychology constructs space from various senses; and physics assumes space as a working hypothesis. Since space is ambiguous between these different accounts, 'what is in space' cannot be the criterion to distinguish the mental from the physical (*TK* 22). Therefore, Russell, as of 1919 thinks it is wise to reject dualism and adopt neutral

monism, which distinguishes the mental from the physical based on causal laws. "I think that both mind and matter are convenient ways of grouping events. Some single events, I should admit, belong only to material groups, but others belong to both kinds of groups, and therefore at once mental and material. This doctrine effects a great simplification in our picture of the structure of the world" (Russell *A History* 833).

However, Russell of *TK* criticizes neutral monism for not properly accounting for the nature of all reality. According to neutral monism in general, there is no entity that is only physical or only mental. But, says Russell, some particulars are purely mental and others are purely physical. Images are only mental and unobserved material objects or events are only physical. That is the reason why, in his own version of neutral monism, Russell limits neutral stuff to sensations in *AMi*. His solution in *AMi* to the problem that some particulars are only mental and some are only physical is to explain images in terms of sensations (*AMi* 287) and in *AMa*, Russell infers unobserved physical events from percepts assuming the causal theory of perception (*AMa* 226-7). Russell explains the difference between the mental and the physical by a difference in causal laws. Images obey only psychological laws, and unperceived material objects obey only physical laws; sensations, however, would obey both laws (OP 299).

In *AMi*, Russell explicitly adopts neutral monism along with the rejection of the mental substance. There is no mental substance holding the sensations together. Russell in *AMi* argues that sensations are the neutral stuff (particulars) that constitutes both the physical and the mental worlds. Sensations are what occur in perspectives, whether actual or potential. An example Russell gives of a particular is: "the visual sensation which

occupied the center of my field of vision at noon on January 1, 1919" (*AMi* 193). These particulars might have proper names, but in language we name only the classes of particulars, such as 'Jones'. "We give the name 'Jones' to the whole class of particulars, but do not trouble to give separate names to the separate particulars that make up the class" (*ibid.* 194).

Russell rejects the mental substance in *AMi* and the physical substance in *AMa*. And he sticks to this view later in *Human Knowledge*. I think that rejection of the mental and the physical substance was the first step to adopting a bundle theory of particulars, even if he does not explicitly say this in *AMi* or *AMa*. In *Logical Atomism* (1924), Russell writes,

> The world consists of a number, perhaps finite, perhaps infinite, of entities which have various relations to each other, and perhaps also various qualities. Each of these entities may be called an 'event'... Every event has to a certain number of others a relation which may be called 'compresence'; from the point of view of physics, a collection of compresent events all occupy one small region in space-time. One example of a class of compresent events is what would be called the contents of one man's mind at one time- i.e. all his sensations, images, memories, thoughts, etc. which can coexist temporally... Every part of his visual field is compresent with every other part, and with the rest of 'the contents of his mind', at that time, and a collection of compresent events occupies a minimal region of space-time (341).

Events play a crucial role in the construction space-time series in this period. The method is similar to the one in *TK*. The elements were events back then as well, but the events used in the construction of perceptual space-time were total momentary experiences, which were strictly mental. And the events constructing the physical space-time series were strictly physical. In the later period, however, events are fundamentally

neutral, the same 'stuff'. Another difference is that the relation of simultaneity is given up, and the relation of overlapping, and later compresence, takes its place.

The relations of overlapping or compresence are given in experience, just as events are (*HK* 277). "'Overlapping' is not itself to be defined logically; it is an empirically known relation, having... only an ostensive definition" (*HK* 279).

A point-instant is reached by determining all the events that overlap in space-time. Take event A and B, and some part of A overlaps with some part of B, you look for other events, say C which will have a part that overlaps with both A and B. You'll continue this process as long as possible, "i.e. until there is no event remaining which overlaps with all the events already in our group... when this stage has been reached, the group of events that has been constructed may be defined as an instant" (*HK* 271). Hence the definition of a point-instant:

> A group of events having the following two properties:
>
> (1) Any two members of the group are compresent.
>
> (2) No event outside the group is compresent with every member of the group (*AMa* 295).

However, the above definition created a problem. Russell could use the definition in constructing instants because time is a single dimension. But when the thing to be constructed has more than one dimension, as in the case of a plane, a 2-place compresence relation does not suffice. If you take three planes, where any two overlap with each other, it is possible that there is no region common to all three of them. Hochberg points out that Russell was aware of this problem and provided a solution for it in AMa. "He [Russell] pointed out the need for a spatial overlapping relation to be of $n+1$

terms if one is to take a copunctual group of regions of *n* dimensions to be a point" (*The Positivist* 44).

Russell uses the term 'copunctual' to mean overlapping relation with more than two terms (*HK* 280). In 2-dimensions, he defines a group of areas as "copunctual if every triad [not any two] chosen out of the group is copunctual. A copunctual group of areas is a 'point' if it cannot be enlarged without ceasing to be copunctual, i.e. if, given any area X outside the group, there are in the group at least two areas A and B such that A, B, X are not copunctual". In three-dimensions, we start with four volumes, in four-dimensions we start with 5 volumes, and so on. "In *n* dimensions the definitions are the same, except that the original relation of copunctuality has to be between *n*+1 regions" (*HK* 280).

This problem actually was pointed out to Russell by F. P. Ramsey in a letter dated October 29, 1926[24]. Russell provided the solution in the published version of *AMa* (July 1927), but has not made any reference to Ramsey. Here's the part in Ramsey's October 29th letter, where he points out the problem to Russell:

> There is a difficulty about 'compresence' which I'm sorry not to have seen before. The three circles intersecting the other two or like this (any two are compresent) can form a 'copunctual set' but in the ordinary sense they may contain no common point. I don't see an easy way of getting over this. Of course with only one dimension like psychological time it would be all right (*McMaster Archives*).

In *AMa*, his solution was to determine the range of members depending on the number of dimensions involved in construction (295). If it is an instant, which is in 1-dimension, the range had to be 1+1, that is, 'Any two members must be compresent'. If it

[24] I'd like to thank Sheila Turcon for showing me the resources to help me find the exact date of this letter. I'd also like to thank Kenneth Blackwell for confirming the exact date.

is a point to be constructed in 4 dimensions (3 for space, 1 for time), then we require a quintet: "As the fundamental relation in the construction of points, we take a five-term relation of 'co-punctuality', which holds between five events when there is a common region common to all of them". A co-punctual group as such is a point when the group cannot be enlarged without ceasing to be copunctual (he calls this group that corresponds to a point a punctual group) (*AMa* 299). But in *HK*, Russell's solution is to change the phrase 'any two members' above to 'all members'. And instead of copunctuality, he uses the compresence relation, which allows as many places as needed for the construction to yield a common point. Thereby, if, for example, all regions are compresent, and there is no region outside the group which is compresent with all, there will be a point common to all regions. I suppose the reason for dropping copunctuality is just to avoid the complication in the definition of a point-instant. When using the relation of 'copunctuality', we have to specify the number of the places the relation needs to have depending on the dimensions of the thing to be constructed. But compresence is a many-place relation so we can use the same definition for constructing all points in various dimensions. We do not have to define a point differently depending on the number of dimensions involved.

### 2.5 From Events to Qualities

Until 1940, Russell takes events as ultimate particulars. But after 1940 it will be complete complexes of qualities that are the elements of construction of space-time order. One of the reasons for this shift is the particularity of events. In *HK* (1940), looking back, he

explains that when constructing points and instants from events, events were provisionally taken as particulars. And as particulars, they are unknowable substances in which qualities inhere (*HK* 293).

> It is difficult to see how something so unknowable such as a particular would have to be required for the interpretation of empirical knowledge. The notion of a substance as a peg on which to hang predicates is repugnant, but the theory that we have been advocating [the construction of points and instants from events] cannot avoid its objectionable features. I conclude, therefore, that we must... find some other way of defining space-time order (Russell *HK* 294).

This "some other way" will be constructing them out of complete complexes of qualities. That is, in order to avoid the unknowable substance, Russell rejects events as the raw elements of construction. In their place he puts complexes of qualities.

Russell in *HK* first discusses the construction of instants and points from events, and he explains that in this construction he made three assumptions: "that a single event may occupy a finite amount of space-time, that two events may overlap both in space and time, and that no event can recur" (*HK* 293). This view takes events as particulars, which have ultimate numerical diversity (*ibid.* 269, 292-3). Constructing points, instants and particles from qualities has the advantage of not having to accept any kind of particulars, things or events, as ultimate constituents. And later in *HK*, Russell explains events still in terms of qualities, but this time as 'incomplete complexes of compresence of qualities', whereas particulars which are the elements of space-time order would be 'complete complexes of compresence of qualities'.

Qualities then are the ultimate constituents of reality as of *IMT* (1940). In Chapter 3, I will discuss his realist bundle theory of particulars and what kind of qualities make

up a particular. We will see that Russell claims that we can know the structure of the world (relations between qualities) and not so much qualities themselves. We will also observe that there is a disapproval of deductive inference, which gives us certainty in knowledge, as the sole method of gaining knowledge of the external world. In this later period, he seems to give up on certainty, and argue that we should aim for knowledge claims which are probably true. He'll argue that we need to accept some postulates of non-demonstrative inference, such as the 'probable' permanence of material objects, in order that we may gain knowledge of the external world.

## Chapter 3: The Later Russell's Bundle Theory of Particulars

### 3.1. The Rejection of Substratum in Linguistic Terms

Russell, putting it in linguistic terms, explains that the issue whether there are particulars as well as universals or merely universals boils down to what we mean by 'this', assuming we are able to define all other egocentric particulars (indexical expressions) in terms of 'this'. Is 'this' an ultimate or not? Does it stand for an ultimate kind of reality, i.e., a simple particular or could we define it in terms of something else? Do we have to have it as part of our minimum vocabulary? Russell explains,

> If 'this' is ultimate, the following are significant, [i.e. non-tautologous]:
> (a) This is exactly like that.
> (b) This might have other qualities than it has (i.e. false propositions of the form 'This has the quality-q' are not self-contradictory.
>
> If 'this' is not ultimate, the following are significant:
> ($\alpha$) This has occurred before, or elsewhere.
> ($\beta$) This is identical with that.
> In either case the propositions in question are not significant on the opposite hypothesis (Russell Appendix to *HK* 291).

Russell as of 1940 (*IMT*) argues that 'this' is dispensable. What 'this' refers to can be explained in terms, or reduced to, the qualities it is composed of. As a consequence, propositions $\alpha$ and $\beta$ above become significant. 'This' is something which is in principle repeatable. The consequence that (a) and (b) will not be significant will be discussed in Chapter 4 and Chapter 5 respectively.

For the later Russell, particulars, such as what 'this' denotes, are not fundamental unrepeatable entities. The ultimate ontological constituents are universals. A quality is such that it "can exist at various times" (*HK* 265). He compares two views of qualities:

(1) as universals: a quality can exist at various times and places. (2) as particulars: each quality exists only once. The later Russell chooses the first view that qualities are universals. On this theory, "what would otherwise be instances of the quality become complexes in which it is combined with other qualities" (*HK* 265).

A quality, linguistically, is not a predicate any more, since there is no subject to which we could attribute qualities. "This is red" is not a subject-predicate proposition, where some quality is ascribed to a substance. Rather, it is in the form "redness is here". 'Red' is not a predicate, but a name for Russell. And a complex of compresence is something that can have a name, just as the qualities composing it can. Thus, in our example, "'here' is the proper name of a bundle of compresent qualities" (Schilpp 714). 'Redness' is one of the qualities that constitute 'here'. Russell accepts ordinary names such as "Lynda", but notes that names are primarily those of qualities. As he puts it, he is suggesting "an unusual extension for the word 'name'" (*IMT* 97).

We will reflect this in our symbolization:

C (F,a) if and only if a = K (....F, ...) [25]

| Proposition | Symbolization | Legend |
|---|---|---|
| This is red. | C (F,a) | C: is a constituent of<br>F: redness, a: this |
| Socrates is Greek. | C (G,b) | G: Greek b: Socrates |
| Something is Greek | Vx C (G,x) | variable stands for qualities or complexes of qualities |
| Red is a colour. | Df | D: colour, f: redness |

[25] K: multi-place compresence relation. We should also note that the identity relation between a "particular" *a*, and the complex of compresence, K (F, G, H) is a contingent one. See Chapter 5: The Problem of Necessity.

Socrates taught Plato. R (b,c) R: teach, b: Socrates, c: Plato

Here I have followed, in part, Kinney's principles in symbolization[26], which is appropriate for the later Russell's views on particulars and universals. Although for the later Russell words for qualities are names, they are different from ordinary proper names in the sense that names of qualities "do not designate a region which is spatio-temporally continuous" (*HK* 84) the way ordinary proper names do.

In *IMT*, Russell explains that since on a bundle theory, the particular is completely defined when all its qualities are given, the name for the whole (the particular) may be thought unnecessary because the bundle can be completely described by its parts (331). But Russell argues that bundles are wholes with parts, and as wholes they need to be analyzed. We can experience a whole, name it, but not know its parts. When we perceive that a whole has parts, the propositions we make about that whole (particular) do not only describe the parts and their relations, but also describe the relation of the parts to the whole (*ibid.* 334-5). Russell argues that we cannot do without propositions of the form 'P is part of W' because they are used in analyzing the wholes (*ibid.* 328-30). In *Human Knowledge*, he claims that such propositions "only arise through ignorance, and that, with better knowledge, our whole W can always be described by means of its constituents...Therefore, [he concludes, though with some hesitation, that] there is no theoretical need for proper names as opposed to names of qualities and of relations" (303). That is, theoretically we need proper names for the

[26] *Bertrand Russell's Theory of Conprescience* (139-140).

particular qualities and relations, but not for the particular bundles they make up. Every bundle can, in theory, be defined by the totality of its properties. But since we are not omniscient, we need proper names for the particular bundles in practice[27] (*ibid.* 308).

### 3.2 Qualities as Immanent Universals

In "On the Problem of Universals" (1946), Russell explains that on his view a thing is a bundle of qualities. Qualities are universals, but they are not transcendent universals; that is, they do not reside in some third realm. They exist in the mental and the physical realms. Universal properties do not need a subject such as a substratum to be exemplified. Rather, universals are multiply occurring entities or repeatable entities. Qualities are immanent universals for Russell, that is, one quality may exist in more than one place, or rather, in more than one perceptible area. Russell writes, "The colour itself exists wherever (as we should commonly say) there is something that has that colour" (*HK* 303). They are multiply occurrent entities in space-time. As Kinney also notes, a universal for the later Russell is something which can recur or "that which can exist simultaneously with itself in disjunct [disjoint] loci" (81). It is not the case that there are independently existing universals and their spatio-temporal instances. Rather, there are spatio-temporal qualities[28] (*IMT* 102). A quality is itself 'part' of a point-instant (*ibid.* 97-8), that is, a complete complex of compresent bundles of qualities amounts to a point-instant.

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[27] Thus, I use lower case letter to symbolize particular bundles and upper case letters to symbolize qualities.

[28] There are also qualities which do not have any spatio-temporal location, such as being a prime number.

However, qualities as immanent universals are different from qualities understood as scattered individuals. On the latter view we have one particular, which has parts wherever we find the quality in question. But on the former view, there is one universal which is wholly present wherever we find the quality in question.

Immanent universals are not abstract in the sense in which transcendent universals are abstract. Transcendent universals are not in space-time, but immanent universals are. But when I say they are 'in' space-time, I do not mean it literally. Space-time is the result of the relations between complexes of compresent qualities. A complete complex of compresent bundles of qualities (universals) is itself a point-instant. Russell writes, "Complete complexes of compresence are the subjects of spatio-temporal relations in physical space-time... A complete complex of compresence counts as a space-time point-instant" (*HK* 304).

Russell points out that his notion of qualities is wider than it is generally supposed: He includes among qualities positional qualities, such as 'being dexterous', meaning being to the right of the center of a visual field. Note that this is not a relational property. Suppose I see bundles A and B. Both have the qualities of being white and square. A is to the left and B is to the right of the center of my visual field. The quality that bundle B has as a constituent part is not the relational property of being to the right of A, even though it is true that it is to the right of A, but instead B has the quality of a certain position, namely, being to the right of the center of my visual field. This positional quality is a coordinate quality confined to each perceptual field.

Russell in effect uses these absolute places to individuate qualitatively alike bundles. M. Weitz makes two criticisms: First, Weitz argues that coordinates are not experienceable qualities, and therefore they are not an improvement over the substrata in that sense. Russell retorts that we do experience coordinate qualities in the perceptual space. "If a fly tickles me, I know, without looking, whereabouts I'm being tickled, because, in tactual space, a touch on one part of the body causes a sensation differing in quality from a touch on another part" (Schilpp 685).

Weitz's second criticism is that the coordinates, regarded as separate qualities, are particulars "in the sense of being the denotation of proper names", though not in the sense of being instances of universals. Weitz holds that Russell has merely substituted coordinates for the substrata. "If Russell admits that spatial coordinates are particulars and their symbols are proper names, the whole point of his realism is lost, because the relation of predication is readmitted: all qualities become predicates of their coordinates" (Schilpp p. 81 fn. 96). Here's Russell's reply:

> The theory that he [Weitz] is examining does not reject the dualism of universals and particulars; all that it does is to place qualities among particulars. If C is a shade of colour, C is a particular; but 'visual', 'auditory', etc. are predicates. The affinities of the theory are not with Plato, but with those who aim to get rid of 'substance'. All the well-known difficulties of substance remain so long as we retain a 'this' which is not a bundle of qualities (Russell Schilpp 685-6).

As I understand it, Russell in this reply, explains that particulars, in the sense of denotation of proper names, are not coordinates, but bundles of qualities, which have coordinate qualities as parts. Although coordinate qualities could be particulars (again in the syntactical sense), what Russell wants to do, I think, is to replace momentary particulars by a group of qualities, not just a coordinate quality. That would indeed be

quite similar to a substratum; except that coordinate quality in perceptual spaces would be experienced.

But why does Russell resort to absolute positions in perceptual space? Couldn't he have included spatio-temporal relations or such relational properties into a bundle?

### 3.3 Relations

The reason why spatio-temporal properties, such as being to the right of *a*, are not included in a bundle is that (1) some relations (spatio-temporal relations) would have been reduced to properties of particulars (2) the account of a particular would be circular. We would have to assume *a* when constructing *b*, and assume *b* when constructing *a*.

(1) Russell's view of relations is a reaction to Leibniz and Bradley's views. Leibniz and Bradley denied that relations were real features of the world. Leibniz reduced relations to the properties of related terms[29], while Bradley reduced relations to the properties of the wholes they composed. Russell argued that relations are irreducible, either to the properties of particulars or to the properties of the whole their relata formed (Winslade 85).

Against Bradley's monistic theory of relations, Russell gives an argument from asymmetric relations:

> The proposition '*a* is greater than *b*', we are told, does not really say anything about either *a* or *b*, but about the two together. Denoting the whole which they compose by (*ab*), it says, we will suppose, '(*ab*) contains diversity of magnitude' Now to this statement ... there is a special objection in the case of asymmetry.

[29] "You will not, I believe, admit an accident which is in two subjects at once. Thus, I hold, as regards relations, that paternity in David is one thing, and filiation in Solomon is another, but the relation common to both is a merely mental thing, of which the modifications of singulars are the foundation" (Russell cites Leibniz (G.II. 486) in *The Philosophy of Leibniz* 206).

> (*ab*) is symmetrical with regard to *a* and *b*, and thus the property of the whole will be exactly the same in the case where *a* is greater than *b* as in the case where *b* is greater than *a*... Thus, the distinction of sense, i.e., the distinction between an asymmetrical relation and its converse, is one which the monistic theory of relations is wholly unable to explain (*POM* § 215).

Russell gives the same objection in 1946 against the monistic view of relations that the relation of being above really is a property of the whole composed of the two bundles in "The Problem of Universals" (270). Russell explains that this view comes from the fact that the relation 'above' seems to be dependent on the existence of at least two bundles. "Unless at least two [bundles] exist there cannot be a fact requiring the word 'above' for its statement" (*ibid.* 269).

One of the arguments Russell gives against Leibniz's monadistic theory of relations that it cannot explain the sense of any asymmetrical relations either (Weitz in Schilpp 61). Consider L is (greater than M) "the supposed adjective of L [the words in brackets], involves some reference to M, and this is merely a cumbrous way of describing a relation. Or, to put the matter otherwise, if L has an adjective corresponding to the fact that it is greater than M, this adjective is logically subsequent to, and is merely derived from, the direct relation of L to M" (*POM* §214). Russell's complaint is that regarding an asymmetrical relation as a property of a particular does not actually eliminate relations. An adjective formed to express such a relation has to logically presuppose the relation.

In *IMT*, Russell considers the nominalist option of explaining all qualities and relations, including asymmetrical relations, in terms of similarity classes. On this view, all wholes where the relation-word 'above' is correctly used have a certain kind of

resemblance. But on this view, we have to account for the similarity relation, which leads us to infinite regress of the vicious kind[30] ("The Problem" 271-2, *IMT* 346).

There is ample evidence to suggest that he accepts there to be relational facts. Russell accepts we need to take relations into account when describing the world; we cannot do just with qualities. For we find qualities in some patterns in the world. "The relations of up-and-down, right-and-left, are just as much part of what is perceived as are the actual colours; if this were not so, photographs would not seem as like their originals as they do" ("The Problem" 269). Consider the relation of being above something. Suppose we have two bundles *a* and *b*. Bundle *a* is located above bundle *b*. Russell argues we do need the word 'above' to express the fact that *a* is above *b*. We can perceive that *a* is above *b* just as we can perceive *a* and *b*.

What Russell concedes is that relation-words, and not relations as abstract entities, are necessary linguistically and logically to express relational facts. Russell, as early as 1905, distinguished between two senses of existence ("The Existential" 98-9): i) as it occurs in philosophy or ordinary language, as when we ask if God exists or affirm that Hamlet existed (*ibid.* 98), and ii) as it occurs on symbolic logic or mathematics, that is, taken as an existential quantifier. Russell explains that to say that *a* exists in this sense means that "[*a*] is a class which has at least one member. Thus whatever is not a class (e.g. Socrates) does not exist in this sense; and among classes there is just one which does not exist, namely the class having no members, which is called the null class. In this sense, the class of numbers (e.g.) exists, because 1, 2, 3, etc. are members of it; but in

[30] See Chapter 1.

sense [i] the class and its members alike do not exist: they do not stand out in a part of space and time, nor do they have that kind of super-sensible existence which is attributed to the Deity" ("The Existential" 99).

Russell seems to keep this distinction as late as 1957[31] ("Logic" 174-5). Thus, the question, 'Are there relations as universals?' is ambiguous between the above two senses. Russell maintains, in 1957, that relations do exist in sense (ii). He writes, "we certainly cannot do without variables that represent predicates or relation-words" ("Logic" 175).

However, Russell argues that we cannot conclude that there are relations as entities from the fact that there are relational facts. He argues that it does not follow that there is an actual ingredient in the world which is denoted by the word 'above'[32] from the relational fact that *a* is above *b* ("The Problem" 269). That is, Russell maintains that relations as universals exist in sense (ii), but he argues that existence in sense (ii) does not imply existence in sense (i).

Russell's 1946 and 1957 articles both leave the question of whether relations exist in sense (i) open ("The Problem" 272 & "Logic" 175). I conclude, from Russell's arguments above, that we should admit that that relations exist does not follow from the fact that there are relational facts. But we can argue that we should nevertheless accept that relations are real because their lack either leads to incomplete explanations as in the

[31] However, in the later period, qualities will be treated differently from relations because qualities exist in space-time. That is, qualities will exist both in sense (i) and (ii).

[32] Russell makes the same point in ("Logic and Ontology" (1957)): "It is quite clear that there are relational facts (128). "It is a fact that Alexander preceded Caesar, and this fact does not merely consist of Alexander and Caesar. Relation-words, it is clear, serve a purpose in enabling us to assert facts which would otherwise be unstatable. So far, I think, we are on firm ground. But I do not think that it follows that there is, in any sense whatever, a 'thing' called 'preceding'" *MPD* 175).

Bradleyian or Leibnizian solutions, or vicious infinite regress in the nominalist solution. Furthermore, Russell in the Schilpp volume in 1944, and also in "Logic and Ontology" in 1957, announces that his final metaphysical view on relations are expressed in the last Chapter of the *IMT*. As we mentioned earlier, in that chapter Russell argues we should admit relations as universals because we cannot reduce the similarity relation even if we managed to reduce all others by elaborate methods. And also in reply to M. Black, Russell writes, "Mr. Black must suppose me to hold that we cannot be acquainted with relations – a view which I have repeatedly repudiated with all possible emphasis" (Schilpp 693).

Thus, given the failure to explain relations in terms of properties or similarity classes, Russell is left with the realist take on qualities and relations. In the case of qualities, we have seen he regards them as immanent universals. But he cannot have relations as immanent universals because then he would have to place them into the bundles; but there are several problems with this view: The first is that a relation does not seem to be in any space or time, whereas qualities, which we take to be immanent universals, are in space-time. Russell had pointed this problem out back in *POP*. "The relation 'north of' does not seem to exist in the same sense as Edinburgh and London exist. If we ask, 'Where and when does this relation exist?, the answer must be 'Nowhere and nowhen'. There is no place or time we can find the relation 'north of'" (*POP* 56). Therefore, relations in the later period need to be transcendent universals, just as they were in the early period. The relation 'north of' subsists as a transcendent universal; they are exemplified by their terms (*POP* 57). But Russell does not explicitly assert this view.

Second, as Griffin has noted, if we include, for instance, the property of being above something into a bundle, everything except for what is at the bottom of the universe would have that property as a constituent in its complex. Plato noted that Socrates is shorter than Simmias because "he happens to have tallness". But it is not in his nature to be tall; tallness is not one of the qualities that make him Simmias. "It is not, surely, the nature of Simmias to be taller than Socrates because he is Simmias but because of the tallness he happens to have" (*Phaedo* 102c). That is, relations themselves cannot be part of what makes a particular that particular or a bundle. Otherwise we would have particulars with contradictory properties, e.g., Socrates would have both property of being taller than and shorter than as properties that make him the particular that he is. Hence, relations should exist independently of the particulars they relate.

But Hochberg makes another suggestion. Instead of including the property of being to the right of something into the bundle *a*, Hochberg suggests that we include being to the right of a bundle of properties. For instance, say both *a* and *b* are white and square and *a* is to the right of *b*, then we can include being to the right of a white square into the bundle *a*:

> Suppose one introduces the property L, with 'R' standing for 'right of', by
> $Lx = df (\exists y) (Ryx \& Wy \& Sy)$
> And suppose further that no white patch is to the right of Plato. For a thing to have L is to have a white square to its right (Hochberg "Things and Descriptions" 73).

This solution, at first sight, seems not to give rise to a circular account of particulars because it does not invoke the name of the white, square bundle. However, I think it is still circular, the white and square bundle is a complex of compresence, i.e., a

particular, whether we name it or not. Besides, it has a defect, namely the assumption he wants us to make. We are not entitled to assume that there is no other bundle of white square to the right of *a*. The qualities we include should do their job of individuation as well as they can regardless of whether the same combination of qualities recurs elsewhere.

If, as I tried to show, relations are transcendental relations for the later Russell, we'll have to maintain that qualities and relations belong to different kinds of universals. Qualities are of the immanent sort and relations are of the transcendent sort. Relations, then, are exemplified by bundles, rather than being part of the bundles either as universals or as instances of universals. But regarding relations as transcendent seems to weaken the bundle theory insofar as it used ontological parsimony as a point in its favor since now we have two kinds of universals in our ontology, not one. This is perhaps only slightly more ontologically parsimonious than having both particulars and universals as ultimate kinds of entities.

However, our interpretation has the merits of first of all being a consistent account. Secondly, it achieves Russell's aim to abandon substrata. In its place, we have a bundle of compresent qualities. Thirdly, Russell gets to keep the reality of relations.

### 3.4 The Compresence Relation

In *IMT* and *HK*, Russell keeps the distinction between ordinary particulars, i.e., ordinary particulars which seem to persist through time, such as a person or a book, and momentary particulars, which are spatio-temporal slices of an ordinary particular. Russell

repeats this view in *IMT* by pointing out that a proper name, say "Caesar", does not refer to the individual entity that lived long ago; instead it refers to a *series* of occurrences involving Caesar in the continuous stretch of space-time that he lived (*IMT* 33).

The novelty that comes with the bundle theory is that the occurrences referred to above were events, but now they are bundles of qualities. Now that the substratum is rejected for the momentary particulars as well, Russell will need a unifier for a momentary particular. The relation of compresence will avail itself for the task.

The compresence relation is a relation that holds between qualities. Other such relations are causation and spatio-temporal relations. For instance, hotness causes pain or the physical quality of whiteness causing a perceptual quality of whiteness in me. Hotness temporally precedes pain.

We should note that compresence has an epistemological advantage over the substratum. The compresence relation is not something unexperienced, like a substratum. We do experience various qualities or events in a compresent manner all the time. I hear the water in the pool next door splash at the same time as I feel the hot humid air in my room, which is also accompanied by an itch on my knee. Thus, the compresence relation is something we experience, unlike the "that which holds properties together". And the relations of compresence among qualities experienced by no one are inferred from our experiences.

The relation of compresence is considered to be an unanalyzable, primitive relation (*IMT* 104). Compresence of qualities takes place in our perceptual spaces and in

the physical space[33]. In physical space, compresence is the overlapping of qualities in space-time (*ibid.* 304). In private space, the qualities of a book that I perceive at a moment would comprise a momentary particular, a spatio-temporal slice of my book on my table[34]. And, according to Russell, "there is no difficulty of principle in constructing complexes of compresence, where there are no percipients" because a camera from that very perspective would record that perception (*HK* 297).

Being a relation, compresence should also be a universal. But is it another component of the bundle? Russell does not include the relation of compresence as another constituent in the complex. "A complex of compresence...is determinate when the qualities constituting it are given" (Russell *HK* 306). There is no mention of the compresence relation as another component of the complex. The components entirely consist of qualities.

Furthermore, it seems that the relation of compresence should not be another component in the bundle because if it is it will lead to an infinite regress. All the qualities and the compresence relation will need a further compresence relation to unify them; and this second level relation of compresence will also be a relation and therefore that second level bundle will require a third relation of compresence to combine them and so on infinitely.

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[33] But this does not mean that there are two different kinds of universals for the phenomenal blue and the physical quality blue. It is just that the word 'blue' acquires a different meaning under the phenomenal and physical interpretations.

[34] This complex of compresence is not a 'total momentary experience', i.e., a complete complex of compresence.

### 3.5 Particulars: Point-instants

Complexes of compresent qualities can be complete or incomplete. Point-instants are complete complexes, and momentary particulars and events are incomplete complexes of compresence. The definition of a complete complex, i.e., a particular as a point-instant is: "a) all the members of the group are compresent, b) nothing outside the group is compresent with every member of the group" (*HK* 294). The first condition requires that some properties overlap in space-time or be experienced simultaneously. The second condition is meant to delineate the complex as distinct from other qualities or groups of qualities. When there is a complex whose qualities are together sufficient to individuate it as one particular, that complex is complete. "Every increase in the number of qualities combined in a complex of compresence diminishes the amount of space-time that it occupies" (Russell *HK* 306). The more defining characteristics the better chance at distinguishing a grouping of properties as one particular. As Loptson and Griffin have pointed out, the amount of space-time does not have to diminish with more properties, because two properties may coincide spatio-temporally in the region occupied by the complex of compresence. Russell should have said, increase in the number of qualities may either diminish or leave the same the amount of space-time it occupies. The difference between Russell's early view of particulars and the later one we have just outlined is that particulars in the early period are particulars in the sense that each instance is unique with its own substrata but in the later period particulars do not come already numerically diverse; in the case of point-instants, it is the complexity of their qualities that particularizes them.

A complex is complete in the sense that there is no other quality outside the group with which every quality in the complex is compresent. The compresence relation in perceptual terms is the simultaneity and overlapping of experience, and in physical terms it is the overlapping of qualities in physical space-time. It is the very same relation in both realms. That compresence in physical space means overlapping in space-time does not mean that compresence is defined in terms of space-time because "compresence is needed in defining spatio-temporal position...Complete complexes of compresence are the subjects of spatio-temporal relations in physical space-time" (*HK 304*). These particulars, i.e., point-instants, are used in constructing space-time. We do say that a quality is at a space-time point. But it would be more accurate to say that this quality is part of the complex forming that point-instant (*ibid.* 305).

### 3.6 Particulars: Complex vs. Class

Since qualities of a complex of compresence are said to determine a particular as a particular, the thought arises that perhaps this particular is a class of qualities. But this view is mistaken. Neither a complete complex of compresence nor a mere or partial complex of compresence is a class. A particular is not to be identified with a class of qualities; it is rather a unit. "It is something which exists, not merely because its constituents exist, but because, in virtue of being compresent, they constitute a single structure" (*HK* 297). It is defined when its constituents are given, but it does not exist merely because its constituents exist. The qualities need to be in a compresence relation. Hence, the particular is not a class; members of mere classes are not related to each other

by compresence[35]. Moreover, a class is an abstract entity, whereas a complex of compresence is not. A complex is just as real as its components.

I think the reason that Russell in *HK* emphasizes that the particulars are complexes not classes arises from a tension when one considers the requisites of his ontology and epistemology. There are three main methods that Russell generally discusses for arriving at the knowledge that something exists: we could observe that it exists, we could infer its existence, or we can construct something to stand for what we would otherwise infer as existing. And Russell prefers construction over inference whenever possible. He claims if a construction is available concerning the existence of a certain kind of entity, "this very fact invalidates the inference" we would normally be inclined to make. "Since it shows that the supposed inferred entity is not necessary for the interpretation of the propositions of the science in question" (Schilpp 699).

Russell used the method of construction extensively in *OKEW*, *AMi* and *AMa*. Construction, as Russell takes it, yields an entity which is of a different logical type than its constituent elements. One "can never construct anything of the same logical type as data" (Russell Appendix to *HK* 257). For instance, a material object in *OKEW* is regarded as a class, and therefore of a different logical type than what it is constructed of, namely, sensibilia. Russell explains the difference between construction and inference as follows: "In a construction, a logical structure is formed of known elements. In an inference, an

[35] Van Cleve also points out that for Russell, a bundle is a whole with parts which are compresent with each other. Therefore, it is not just a sum of its parts. When the whole is a mere collection of parts, there is the problem that any grouping of properties would have to be a whole. But the later Russell would not face this problem because on his account a group of properties make a whole only if they are in a relation of compresence (123-4).

entity of the same type as known entities is inferred. E.g. instants in Newton and classes of events" (Russell Appendix to *HK* 287).

It is not straightforwardly clear whether Russell in *HK* holds particulars in general to be constructions or not. He certainly speaks of 'constructing' them while he is developing the theory. But I think particulars in the later period should be inferred, not constructed. In 1948, Russell writes, "At one time, I hoped that science could be content with *constructions* in place of *inferences*. I now no longer think this possible" ("Non-Deductive Inference" 129). In this passage he is discussing the construction versus inference of matter and other minds. Russell should be inferring them instead due to (1) the limitations of induction on which causality is based, since causality is the link between classes of sense-data, (2) a tension that arises when some key propositions that he holds to be true are taken in total. We'll discuss the second one first.

(1) A particular is a complex of compresence (*HK* 298-9).
(2) A particular is a construction (Assumption).
(3) A construction is not of the same logical type as data (Appendix to *HK* 257).
(4) A complex is of the same logical type as its constituents (*ibid.* 293).

If all of the above are true, then we have a complex, which is a construction, and it is both of the same logical type as its constituents (4) and is not of the same logical type as its constituents (3). Therefore (2) has to be false. We must infer the existence of particulars. Our knowledge of them will be through descriptions. However, the method of inference will not be inductive inference. He'll appeal to other principles of non-demonstrative inference.

### 3.7 Non-demonstrative Inference

Whether things exist in the external world is not something we can experience or know about using deductive inferences which would give us certainties. "The belief in external objects is a learned reaction acquired in the first months of life, and it is the duty of a philosopher to treat it as an inference whose validity must be tested. ...logically, the inference cannot be demonstrative, but must be at best probable" (Russell *An Outline* 278). Therefore, we rely on non-demonstrative inferences, which give us knowledge claims about the external world which are probably true (*HK* 335).

Earlier in *OKEW*, Russell was in agreement with Mill that inference to unobserved events ultimately depends on induction, specifically induction by simple enumeration. The reasoning was such that inference to unobserved events depends on the law of causality, and that in turn is based on induction by simple enumeration: So far we have observed that numerous events have causes, and we have observed no event that does not have a cause. Therefore, all events, including the unobserved ones, have causes (*An Outline* 281). "It is thus the principle of induction, rather than the law of causality, which is at the bottom of all inferences as to the existence of things not immediately given" (*OKEW* 226).

Enumerative induction is an inference where observed instances lead to general statements about relations between two things: "Given a number $n$ of $\alpha$'s which have been found to be $\beta$'s, and no $\alpha$ which has been found to be not a $\beta$, then the two statements: (a) the next $\alpha$ will be a $\beta$, (b) all $\alpha$'s are $\beta$'s, both have a probability which

increases as $n$ increases, and approaches certainty as a limit as $n$ approaches infinity'" (*HK* 401).

Russell points out, however, that induction by enumeration is erroneous as it is, since "it can be shown that the conclusions of inductive inferences from true premises are more often false than true" (*MPD* 153).

> Let $a_1, a_2, \ldots a_n$ be the hitherto observed members of $\alpha$, all of which have been found to be members of $\beta$, and let $a_{n+1}$ be the next member of $\alpha$. So far as pure logic is concerned, $\beta$ might consist only of the terms $a_1, a_2, \ldots a_n$; or it might consist of everything in the universe except $a_{n+1}$; or it might consist of any class intermediate between these two. In any of these cases the induction to $a_{n+1}$ would be false" (*HK* 404).

This point is made later (1955) by Goodman (*Fact* 74-5) with his famous 'grue' example. The class $\alpha$ is the class of emeralds. The class $\beta$ is the class of green things. The members of $\alpha$ have been observed so far to be members also of $\beta$. So we would like to conclude that the next emerald ($a_{n+1}$) will be green. But as long as classes are taken extensionally, we can also conjure up a class $\beta$' whose members are grue things; where something is grue iff it is green and has been observed before today or it is blue and observed after today. And therefore, we would also be able to conclude that the next emerald will be grue. Thereby, we would hold that we predict the next emerald to be both green and grue. That is, Goodman makes the same point that "this traditional form of induction allows the inference of incompatible conclusions from the very same evidence" which Russell had made in *HK* (Aune 132).

Russell explains that this problem shows that the classes $\alpha$ and $\beta$ need to be treated intensionally, not extensionally; "the class $\beta$ must have certain characteristics, or

be related in some specific way to the class α" (Russell *HK* 404-5). Russell explains this with a better, i.e., easier to understand, example in a note on non-demonstrative inference in 1959:

> You have, let us suppose, a growing boy whose height you measure on the first day of every month. You may find that, for a certain period, his rate of growth is constant. If you knew nothing about human growth, you might infer by induction that he would continue to grow at this rate until his head strikes the stars. There are, in fact, an infinite number of formulae which will fit any finite set of facts as to your boy's growth. Pure induction, if valid, would lead you to regard all these formulae as probable, although they contradict each other (Russell "Note on Non-Demonstrative" 139).

Russell turns to Keynes for the solution to the problem above. Keynes requires that there must be an antecedent probability for the generalization we want to test. That is, before we observe its instances, the generalization should have "something to be said in its favor, so that at any rate it is worth examining" (*HK* 435), unlike, I suppose, the generalization that 'All emeralds are grue'. To satisfy this requirement, Keynes formulates a postulate called 'the postulate of limited variety'. What this means is that the things we'll generalize about, α's, belong to certain natural kinds ('generator properties'), and these kinds are of a finite number. And some properties ('apparent properties') arise out of each natural kind. So, the β that we want to associate with α will have to be one of those properties that arise out of the kind α.

Suppose the generalization in question is 'All copper conducts electricity'. Knowing that copper belongs to the kind metal, we check what kind of properties other metals have; we see that the property of conducting electricity arises out of the kind property of being a metal. So we think that there is an initial probability for our

generalization that all copper conducts electricity to be true (*HK* 435 & 441, Keynes Ch. 22. 3). Keynes supposes that "it is possible to pick out a finite set of fundamental properties, such that when we know which of these properties an individual possesses, we can know (at least in theory) what some, at least, of his other properties are, not because there is a logical connection, but because in fact certain properties never occur except in conjunction with certain others" (Russell *HK* 442).

Russell, however, does not accept Keynes's postulate as it is. Russell notes that biology does not accept precise natural kinds ever since the theory of evolution. In physics, there are no more natural kinds apart from subatomic particles, such as protons (*HK* 444). Furthermore, Russell points out that Jean Nicod showed that "Keynes's postulate was not sufficiently stringent, and in making it more adequate made it less plausible" ("Non-Deductive Inference" 122). But the key point for Russell is that even if Russell formulates Keynes's postulate in a way that does not assume that there are natural kinds, the problem remains for Russell that induction cannot be the premise to justify causality, since Keynes has shown that induction requires other premises, such as finite antecedent probability, however it should be formulated[36]. This is revealed in the second part of the note on non-demonstrative inference mentioned above:

> Keynes, in his *Treatise on Probability* shows that under certain circumstances an induction is valid if the generalization in question has a finite probability before any instances of its correctness are known. Accepting this view, I conclude that induction, in so far as it can be validly employed, is not an indemonstrable premiss, but that other indemonstrable premises are necessary in order to give the necessary finite probability to inductions which we wish to test. The conclusion is

[36] Goodman's solution was to maintain that we prefer the conclusion 'All emeralds are green' over the conclusion, 'All emeralds are grue' because it is 'entrenched' in practice. However, some philosophers, such as Aune, argued that the limitations Goodman brought with his 'theory of entrenchment' are not sufficient (132-133).

> that scientific inference demands extra-logical postulates of which induction is not one[37] (Russell "Note on Non-Demonstrative Inference" 139).

Since "induction cannot prove causation unless causation is antecedently probable" (*HK* 455), Russell suggests we analyze the inferences we do make in science, and once we identify them accept them as postulates (*MPD* 153). Russell formulates five such postulates, which ground the laws of causality. For Russell, a "causal law is not an invariable sequence. It only states tendencies" (*MPD* 146). According to the view that causal laws are invariable sequences, what A causes B means that events of type A are invariably followed by events of type B. One problem with this view is that sometimes events may be tokens, not types; that is, A may not be repeated at all but nevertheless cause B (*HK* 490).

*Postulates of scientific inference:*

These for Russell are a priori principles, "which depend, for their truth, upon characteristics of the world, not upon logical necessities which must be the same for all possible worlds" (Non-Deductive Inference" 121). The postulates give the finite a priori probabilities Russell needs to justify inductive inferences.

> The postulates that I shall require will therefore state that generalizations of certain specified kinds are finitely probable before there is any evidence in their favour. If the postulates are admitted, it will follow that inductive evidence can confer a high degree of probability upon any generalization of one of the specified kinds ("Non-Deductive Inference" 131).

[37] But this does not mean that Russell gives up induction altogether. Induction is useful as part of the application of mathematical probability (*HK* 434).

"If we assume a finite a priori probability of the existence of a causal law in some set of phenomena, we can then investigate inductively whether there is a causal law" ("Non-Deductive Inference" 126).

1. The law of quasi-permanence – "Given any event A, it happens very frequently that, at any neighboring time, there is at some neighboring place an event very similar to A" (*HK* 488). A series of such events gives us the persisting "thing". "In every natural process, there is a finite probability that there is something that persists" ("Non-Deductive Inference" 126).

But sometimes there will be many events at a neighbouring time which are similar to A at a given time, such as in the case of peas in a pan. To be able to identify one pea, $A_1$ as the same one at a neighboring time, $A_2$, instead of $B_2$ or $C_1$, Russell calls for the second postulate of causal lines (*HK* 487).

2. Causal lines- "It is frequently possible to form a series of events such that from one or two members of the series something can be inferred as to all the other members" (*HK* 489). Such a series, Russell calls a causal line. This postulate enables us to say that when there are many events at a given time similar to A, "there is usually one which has a special connection with A, of the sort which makes us regard it alone as part of the history of the 'thing' to which A belongs" (*HK* 488).

3. Spatio-temporal continuity- "When there is a causal connection between two events that are not contiguous, there must be intermediate links in the causal chain such that each is contiguous to the next, or (alternatively) such that there is a process which is continuous in the mathematical sense" (*ibid.* 491). For instance, when I hear what a

friend says, there must be intermediary regions between the sounds my friend makes and the sounds that my ear receives, which we take to be sound waves.

4. Structure- "When a group of complex events in more or less the same neighborhood all have a common structure, and appear to be grouped about a central event, it is probable that they have a common causal ancestor". What he means here by 'probable' is that it is frequently the case (*ibid.* 465 & 471). For instance, when we watch a performance at a theatre, the common causal ancestor of our perceptions would be the event of actress's doing her part. The reason he admits this postulate is that we'll be able to assume that there is something in the external world that is the cause of our perceptions, when several people experience perceptual events similar in structure. This postulate implies that the structure of the cause of percept is the same as that of the perceptual counterpart (*HK* 474). Structure is important for explaining persistence, which will otherwise be unexplained since the notion of substance is rejected. Russell writes, "persistence is a very common feature of natural processes... structure is what is most apt to persist" (*ibid.* 473).

It seems that structure gives the finite antecedent probability that we need to justify inductions. "Identity of structure, especially when the structure is very complex, gives a finite probability of common causal origin. (... a finite a priori probability is what we need to justify inductive inferences)" ("Non-Deductive Inference" 125).

5. Analogy - "Given two classes of events A and B, and given that, whenever both A and B can be observed, there is reason to believe that A causes B, then if, in a given case, A is observed, but there is no way of observing whether B occurs or not, it is

probable that B occurs; and similarly if B is observed, but the presence or absence of A cannot be observed" (*HK* 493).

This postulate is required for justifying the belief that there are other minds (*HK* 483). We observe in ourselves that when we have a certain belief, or when we are in a certain physical or mental state, we tend to behave in certain ways. And we observe similar behaviour in other people, so we infer that the cause of their behaviour should be something similar. For instance, I smile when I have a pleasant thought, so when I see my friend smiling, I infer that she must be having a pleasant thought (*HK* 483).

Russell notes that this postulate is also useful in inferences that do not draw conclusions about other minds. For instance, we generally associate the feeling of hardness of an object when touched with certain visual appearances; certain shapes and contours of objects seem to be accompanied most of the time with a feeling of hardness when we touch them. This habitual association leads us to expect and infer that a similar visual appearance will be accompanied the next time we touch something and it feels hard (*HK* 494).

Russell admits that future study may show that the postulates he has given are not necessary for scientific inference, but he claims they are sufficient (*HK* 494). Knowing these postulates is knowing the connections between particular facts. Furthermore, he notes that these postulates need not be certain. "In order that the postulates ... fulfill their function it is not necessary that they should be certain; it is only necessary that they should have a finite probability" (*ibid.* 149).

With the help of these postulates, now Russell can infer the probable existence of momentary particulars in the physical world and ordinary particulars (material objects). Suppose I have a momentary percept of an orange sitting on the left-hand side corner of the kitchen table, $O_1$. Based on the law of quasi-permanence, I infer that there is a great likelihood that I will have percepts $O_2, \ldots, O_n$ similar to $O_1$ if I do not change my position and anything else about the circumstances. Based on the structural postulate and the postulate of causal lines, I infer that there must be a physical orange, which causes $O_1$, and which has a similar spatio-temporal structure to $O_1$. It seems that structure is what grounds the causal line between the physical orange and my perceptual orange, $O_1$. Suppose after perceiving $O_1$, I hear the phone ringing and answer it. Afterwards I go back to the kitchen only to see $O_{10}$. With the postulate of quasi-permanence and spatio-temporal continuity, I infer that "the orange" must have been sitting where it was all along. And therefore, I conclude that $O_1$ is the same "thing" (ordinary particular) as $O_{10}$.

### 3.8 Neutral Monism; Quality vs. Structure

Russell distinguishes in the world "a stuff and a structure. The stuff [consists] of all the simples denoted by names" (*HK* 259). The simples denoted by names being qualities, qualities are the neutral stuff of this later period. In *AMi* the neutral stuff consisted of sensations; in *AMa* events were the neutral stuff, without any significant change of meaning. Russell switched to 'event' because 'sensation' had phenomenological connotations that Russell wanted to avoid. However, after *IMT* the neutral stuff cannot be events anymore, since events are not the ultimate constituents any longer. Qualities

are the neutral stuff and they can be in both realms; it is just that they are what they are in the physical world, but they take on an epistemological character when they are parts of percepts.

A percept is "what happens when, in common sense terms, I see something or hear something or otherwise believe myself to become aware of something through my senses" (*HK* 203). My seeing the sun is a percept, and it is not identical with the sun itself. These two are the far ends of a causal chain. Percepts are located in the brain. "Their location in causal chains is the same as that of certain events in the brain" (*HK* 209). We perceive the sun as bright and red, but the sun is not bright or red the way we understand these terms (*ibid.* 204).

Russell holds that it is probable that physical objects differ from percepts. Hence, this might be thought to lead to the problem of interaction of the mental and the physical since percept is considered to be mental and the material objects physical. However, Russell's metaphysical view is that there is no distinction between the mental and the physical, but epistemologically, Russell thinks there is a distinction. "My own belief is that the 'mental' and the 'physical' are not so disparate as is generally thought. I should define a 'mental occurrence' as one which someone knows otherwise than by inference; the distinction between 'mental' and 'physical' therefore belongs to theory of knowledge, not to metaphysics" (*HK* 209).

A quality, say, 'blue' can be regarded as a mental quality in the perceptual world, and a physical quality in the physical world. "We may say of a percept that it is blue, and we may say the same of a light ray. The word 'blue' will have a different meaning as

applied to a light ray from that which it has when applied to a percept, but the meaning, in each case, is part of a system of interpretation, and so long as we adhere to one system the truth or falsehood of our statement is independent, within limits, of the system chosen" (*ibid.* 475).

In this later period, the 'neutrality' of events or qualities acquires some clarity. Now there is something strictly the same between a mental event and its physical counterpart, i.e., its structure. "In many natural processes there is a constancy of space-time structure in spite of complete change in the intrinsic character of the ingredients of the structure" ("Non-Deductive Inference" 124). "In so far as physical objects have the same structure as percepts, a given form of words may be interpreted as applying to objects or to percepts, and will be true of both or of neither" (*HK* 475).

Structure is a logical concept. "To exhibit the structure of an object is to mention its parts and the ways in which they are related" (*HK* 250). Examples of structure are the structure of a map and how it relates to the region of which it is a map and the structure of a gramophone record to the sound it produces (*AMa* 249). In the latter, "what is nearer to the center on the record corresponds to what is later in the music" (*HK* 253).

What he means by structural similarity between percepts and non-percepts is best illustrated by his example of someone making a broadcast, thereby producing sounds of a certain structure, and those sounds turn into something other than sounds when they reach the microphone, sounds turn into electromagnetic waves, which are then turned back into sounds when received by an ear. But throughout the changing qualities, structure of the sounds or waves, or else, remains the same. Russell says, "When we examine causal

sequences, we find that the quality of an event may change completely in the course of such a sequence, and that the only thing constant is structure" (*ibid.* 467).

The argument for believing that there is such a structural resemblance is that since the data of perception has a complex structure, so should the cause of the perception (*AMa* 249). From the principle same cause, same effect and different cause, different effect, Russell infers that there must be identity of structure between cause and effect so that we can infer the structure of a physical cause from the structure of its phenomenal effect (*HK* 254). This maxim though must be confined to the causation between mental and physical events. For example, there is a phenomenal effect on me such as having the sensation of seeing an orange. We infer that there must be a physical occurrence, an orange that caused my sensation. It is not a principle that applies to causation among physical events; for in the case of those causations, the effect most of the time does not have the same structure as the cause. I can squeeze the orange with my hand. My hand does not, and need not, have the same structure as the orange.

M.H.A. Newman (1928) criticizes Russell of *AMa*'s view that nothing but structure of the external world is known, since that would not give us any empirical knowledge about the world.

> If all we can say is, 'There is a relation R such that the structure of the external world with reference to R is W', "such a statement expresses only a trivial property of the world. Any collection of things can be organized so as to have the structure of W, provided there is the right number of them. Hence the doctrine that only structure is known involves the doctrine that nothing can be known that is not logically deducible from the mere fact of existence, except ('theoretically') the number of constituting objects (Newman 144).

Russell, in reply, admits that he should not have maintained that it is only structure that could be known about the physical world. Russell writes that he actually assumes "spatiotemporal continuity with the world of percepts, and even that one could pass by a finite number of steps (from one event to another compresent with it) from one end of the universe to the other. And co-punctuality I regarded as a relation which might exist among percepts and is itself perceptible" (Letter to Newman, cited by Demopolous and Friedman 631).

In *HK*, Russell makes the changes to his account as to what can be known about the external world. He maintains that we can know the relation of compresence and the relation of earlier and later, as well as the structure (*HK* 332).

### 3.9 Momentary Particulars

Momentary particulars consist entirely of qualities. One reason that Russell allows only qualities might be that an empirically inclined bundle theory will limit bundles to sensible properties, i.e., qualities, because according to Russell, sensation gives us only sensible properties.

But at the same time, according to Russell, we cannot know the qualities of the world. If qualities of the external world cannot be known, we cannot use the empirical reason above to maintain that only sensible qualities make up a particular. There should be another reason, not based on what we can know.

Any property that goes in should be a universal; that is a criterion. But not all universals go in; qualities do but relations don't, for reasons that we discussed in section 3.3. Russell in *IMT* and *HK* emphasizes sensory qualities, such as 'redness' or 'softness' and positional qualities such as 'centrality' in one's visual field, when he is discussing the constituents of a bundle. There is also evidence suggesting that kind qualities such as 'being a human' do go into the bundles. Russell says, "an instance of man 'has' other qualities besides humanity: he is white or black, French or English, wise or foolish, and so on" (*HK* 298).

### 3.10 Construction of Space-time

Russell again constructs physical space-time series and perceptual space-time series. Now that a momentary particular is a complex of qualities, not an event, and a complete complex of compresence, as a complex of instantaneous qualities, cannot be experienced, the physical space-time series will be constructed out of these complete complexes of compresence. A perceptual space-time series is constructed of *tome*s (total momentary experiences) (*HK* 295).

The existence of both a point-instant and a momentary particular is inferred. A momentary particular is a bundle of compresent qualities. Compresence seems to be the relation both between the qualities of a bundle, a momentary particular, and the relation between various qualities that compose a complete complex of compresence, such as when I experience spatio-temporal slices of the computer, the table and the plant all compresently.

Since Russell identifies point-instants with a complete complex of compresent qualities, if the whole group of qualities recurs that would mean the point-instant recurs, in which case we cannot construct a series of successive point-instants. Considering a momentary percept, there is no danger of recurrence because he regards the space of perception as absolute in the sense that the center of one's visual field may be taken as the reference point with spatial relations determined by reference to it. According to Russell, the qualities in our visual fields have positional qualities. "At every moment, what is in the center of my field of vision has a quality that may be called 'centrality'" what is to the right 'dexter', what to left 'sinister', what above 'superior', what below 'inferior'" (*HK* 298-9). Therefore, at least in visual spaces, it is guaranteed that when a sensational quality recurs it will also be compresent with one of the above positional qualities which will help distinguish it from other occurrences of the sensational quality in one's percept.

However, the complete complexes of physical space do not directly enjoy the advantage that perceptual bundles do in terms of avoiding recurrence. Russell accepts that "it is logically possible for [a complete complex of compresence] to occur more than once, but [he] assumes that if [the complex] is sufficiently complex, there will not in fact be recurrence" (*HK* 306). Russell will have bundles of qualities sufficiently complex that they will not recur. And he can thereby construct space-time order out of non-recurring particulars (*ibid.* 293).

What also contributes to the individuation of point-instants in the construction of the physical space-time series is that, based on the postulates of non-demonstrative

inference, we think it is highly probable that the spatio-temporal relations in physical space will be approximately corresponding to the spatio-temporal positions in perceptual spaces. That is, the spatial qualities used in individuating bundles in perceptual spaces will indirectly and approximately help the individuation of bundles to be used in the construction of the physical space-time. "Two simultaneous parts of one visual percept have a certain visual spatial relation which is a component of the total percept; the physical objects which correspond to these parts of my total percept have a relation roughly corresponding to this visual spatial relation" (*HK* 320).

Having outlined the later Russell's bundle theory of particulars, as of the next chapter we will go on to discuss the major difficulties it faces. We will start with the problem of individuation, which we have just seen arises when one gives up the view that there are bare particulars.

## Chapter 4: The Problem of Individuation

In this chapter we will discuss the problem of individuation that arises for the later Russell's realist bundle theory. Individuation seems to pose a problem for the bundle theory because it relies on the principle of identity of indiscernibles and according to this principle, two things' having the same qualities is sufficient for them to be identical. Some philosophers, led by M. Black, argue that the principle of identity of indiscernibles is false and therefore the bundle theory must be false. On the realist bundle theory, the constituents of a particular are merely qualities. Therefore, the theory has the consequence that if two particulars have all their qualities in common, then they have to be numerically identical. There is nothing among the constituents of a particular which is not a quality. Hence when two particulars share all their qualities there is nothing left to differentiate the two (Loux *Metaphysics* 108).

There are three kinds of particulars that we need to examine in relation to the problem of individuation: The problem of individuation with respect to (1) particulars which are point-instants, necessary for constructing space-time series, (2) particulars in the ordinary sense (ordinary particulars) such as Caesar as an object that has "persisted" through time, (3) particulars at a space/time point (momentary particulars) such as Caesar at point-instant *t*.

The problem of individuation with respect to (1) is that construction of a space-time series requires that we have units that do not recur. For instance, if we have complexes of qualities *a*, *b* and *c* as candidates for being distinct particulars as point-instants, we have to make sure that *a*, *b*, and *c* do not share all their properties. For if they

do, then there will not be a transitive relation of succession between them to form a temporal series. The problem of individuation with respect to (2) which is called 'the problem of identity', is determining criteria for when one ordinary particular can be regarded as the same thing over time, what changes can it go through and remain the same thing. The problem of individuation with respect to (3), is determining criteria to distinguish one particular from another at a time– others of the same kind or of different kinds.

Russell devotes a chapter to the problem of individuation in *HK*. However, what he mainly discusses is the individuation of a certain type of particular, a point-instant, i.e. a complete complex of compresence (1). For what is important to him is the construction of a space-time series, where one needs elements that won't recur. He discusses the individuation of an ordinary particular (2) as well, but he does not seem to be much concerned with the individuation of what I call a momentary particular (3). It seems to me, after a thorough consideration of all the arguments for and against the principle of the identity of indiscernibles, that the reason that he is indifferent to this problem of individuation with respect to (3) is that Russell, like O'Leary-Hawthorne later on, probably regarded it as a logical consequence of the bundle theory that if *a* and *b* are momentary particulars that share all their qualities, then they would be the same particular. So he would not be surprised if he were presented with universes with 'two' qualitatively identical bundles. In this chapter, I will exhibit this process of discovery as I discuss the principle of identity of indiscernibles with respect to (3), and in the end I will

show that the particulars (1) and (2) require a slightly different treatment than particulars (3).

### 4.1 The Problem of Individuation with respect to Momentary Particulars

A momentary particular is a complex of compresence, but not a *complete* complex of compresence, which for Russell counts as a point-instant. A momentary particular is, for instance, a spatio-temporal part of one of the books on my table. Individuation in their case, therefore, does not enjoy the same positive correlation between the number of qualities and individuation. All we have for the identity of a momentary particular is the compresence, i.e., coexistence, of certain qualities.

Armstrong gives one of the traditional arguments against the realist bundle theory based on the falsity of PII:

> If it is true that a particular is a bundle of properties, and if properties are universals, then these truths are necessarily true. If so, then, necessarily, if particulars *a* and *b* have exactly the same properties, then *a* and *b* are the very same particular. That is to say, identity of indiscernibles is necessarily true. But on no interpretation does it appear to be a necessary truth. Therefore, it cannot be a necessary truth that a particular is a bundle of universals. But if this is not a necessary truth, it is not a truth at all (Armstrong *Vol. 1* 91).

The explanation for the first premise is that bundle theorists in general hold the theory to be true of particulars necessarily, since they claim that it is impossible for there to be substrata as constituents of particulars (Loux *Metaphysics* 107). Albert Casullo challenges this claim and argues that Russell should hold the bundle theory to be only contingently true of particulars. Casullo distinguishes between weak and strong reduction and claims that Russell's reduction to particulars is a weak reduction, that is, "particulars

are only contingently identical" to complexes of properties ("A Fourth" 131). Armstrong assumes that any truth put forward as the theory explaining the nature of particulars in metaphysics must be put forth as a necessary truth. This is what he means when he says, "If this [that a particular is a bundle of universals] cannot be a necessary truth, it is not a truth at all" (*ibid.* 91). But Casullo objects that Russell did not mean to formulate a necessary truth about particulars. Russell did not claim that a particular, in all possible worlds, is a bundle of universals ("A Fourth" 131).

However, it seems to me that we need to accept the first premise as true because Russell formulated the realist bundle theory as a theory to apply to *any* particular. According to Russell, modality applies only to propositional functions, and on this view, 'It is necessary that a particular is a bundle of compresent properties' would translate into 'For all x, if x is a particular then it is a bundle of compresent properties'. And this universal claim must be what Russell had in mind when he proposed the bundle theory. He could not have proposed a theory which would only be possible: There is an x such that if x is a particular then x is a bundle of properties.

Thus, Russell is committed to the necessary truth of principle of identity of indiscernibles due to his commitment to the bundle theory. We'll see shortly that he is also committed to the necessary truth of the principle because he accepts that principle as a logical truth.

Russell did not consider identity to be a relation until 1900[38]. In 1897, he claims, "every relation involves a diversity between the related terms" ("An Essay On" §208). Since identity does not relate two diverse terms, it cannot be considered as a relation. Again in 1899, he says relations may be between two or more terms but 'identity of content' does not have this formal condition of relations, for it is "mere self-sameness" ("The Classification" 140). Diversity is required for a relation, and diversity requires at least two terms (*ibid.* 141).

In 1903 *POM*, Russell accepts identity as a relation. "Since there is such a relation as identity and since it seems undeniable that every term is identical with itself, we must allow that a term may be related to itself" (*POM* §95). Two terms are identical "when the second belongs to every class to which the first belongs" (*ibid.* §26). However, after *POM*, he decided he had to find a definition for identity. He thought principle of identity of indiscernibles together with Leibniz's Law would be the right one.

In *PM* 1910, Russell and Whitehead's definition of identity is: "$x$ and $y$ are to be called identical when every predicative function satisfied by $x$ is also satisfied by $y$" (13.01). Russell defines identity in logic and mathematics on the basis of the principle of identity of indiscernibles. Therefore, he must be taking the principle to be a logically necessary truth. However, in *PM*, the function ranges over relational properties as well as qualities; in particular, it ranges over the property of being identical to $a$. Let us use the

[38] As Griffin has pointed out, Russell probably accepted identity as a relation when he discovered Peano in 1900. Russell takes identity as a primitive idea, i.e., not defined in the system, in an article he wrote in French (1900-01) where he develops a logic of relations based on Peano's logic. This article appeared in English as "The Logic of Relations" in 1901.

abbreviation PII** for this wide notion of the principle of identity of indiscernibles[39], and PII* when predicates range over both qualities and relational properties, except for the property of being identical to *a*, and let us use the abbreviation PII for the narrow sense, when the predicate variable ranges over only qualities.

Wittgenstein objects to Russell's definition of identity by means of the principle of identity of indiscernibles. "Russell's definition of '=' won't do; because according to it, one cannot say that two objects have all their properties in common. (Even if this proposition is never true, it is nevertheless significant)" (*Tractatus* 5.5302). Ayer explains that 'in saying that this proposition is at least significant Wittgenstein means also to imply that it is not self-contradictory" (Ayer *Philosophical* 27). Since 'two objects have all their properties in common' is not self-contradictory, the principle of identity of indiscernibles cannot be a logical truth. Regardless of whether Wittgenstein had PII or PII** in mind, it seems to me that Wittgenstein ignores the fact that the phrase 'two objects' is a variable which may or may not stand for the same individual.

In his 1911 article, "On the Relations of Universals and Particulars", Russell denies PII as a logically necessary truth. Even if two particulars had the same qualities, they would be different particulars on his earlier view. Russell says, "Terms of spatial

[39] As B. Linsky has pointed out, according to *PM*, one has to assume the axiom of reducibility in order for PII** to be true. Russell explains the need for this axiom as follows: "Suppose the common properties required for indiscernibility to be limited to predicates. Then the identity of indiscernibles will state that if x and *y* agree as to all their predicates, they are identical. This can be proved if we assume the axiom of reducibility. For in that case, every property belongs to the same collection of objects as is defined by some predicate. Hence there is some predicate common and peculiar to the objects which are identical with *x*. This predicate belongs to *x*, since *x* is identical with itself; hence it belongs to *y*, since *y* has all the predicates of *x*; hence *y* is identical with *x*. It follows that we may *define x* and *y* as identical when all the predicates of *x* belong to *y*" ("The Theory of Logical" 243).

relations cannot be universals or collections of universals, but must be particulars capable of being exactly alike and yet numerically diverse" ("On the Relations" 118).

"It is logically possible for two exactly similar patches of white, of the same size and shape, to exist simultaneously in different places. Now whatever may be the exact meaning of 'existing in different places', it is self-evident that, in such a case there are two different patches of white" (112). This shows that for Russell PII was not true, but it may be that PII** was true. Once he has bare particulars, he can get identity properties from them. The `identity property' is a haecceity that can individuate two particulars. This property can be grounded on the substratum each particular has or can be emergent from the particular. If the identity property is dependent on the particular, then it would be circular to hold that a particular is individuated by its identity property. Hence, it must be the substrata that were the individuators. A particular *a* will have the property of having *a*'s substratum and *b* will lack that property. Hence, there will be a property that distinguishes the two otherwise qualitatively alike particulars. The logical truth of PII** would be preserved.

It seems to me that the later Russell holds PII to be true. According to Russell, "a particular is constituted by qualities; when all its qualities have been enumerated, it is fully defined" (*HK* 292). What constitutes particulars are qualities, not relational properties, therefore, two particulars are identical if they share all their qualities. The bundle theory of particulars, which maintains that compresence of a group of properties is sufficient for the identity of a momentary particular, commits the later Russell to PII.

Russell in *IMT* 1940 gives an argument from verifiability for holding PII to be logically true. He claims enumeration would be theoretically impossible without the principle of identity of indiscernibles. If I want to count objects A, B, C, D, E and if B and C are indiscernible, then I would give B and C the same name and count them as one, and conclude there to be only four objects. Therefore, "if there be a concept of identity which allows indiscernibles to be not identical, such a concept can never be applied, and can have no relation to our knowledge" (*IMT* 130). But I do not think this argument works because it begs the question. The only way Russell would give the same name to B and C and count them as one particular is if he already assumes that B and C are identical because they are indiscernible. According to Russell, we would give B and C the same name, because they would be composed of the same properties; they would have to be the same property-complex. And if he gives different names every time he encounters the same property-complex, one might end up giving hundreds of names to the same property-complex. It would be, according to Russell, on a par, with giving a different name to the same property each time it occurs. For instance, blue would have to have thousands of different names. But again, Russell will give the same name to the property-complexes because he is assuming that there is nothing more to a particular than its properties. If he held the substratum theory, each property-complex would have a bare, simple particular that differentiates it from other similar property-complexes, and in that case, he would not give the same name to B and C, because B and C would have different bare particulars.

Since Russell takes the principle of identity of indiscernibles to be necessarily true, his version of the realist bundle theory will face M. Black's objection to the effect that that it is not true that the principle is necessarily true. The version of the principle that Black seems to argue against is PII*, since he allows the predicate variable to range over qualities and relational properties, but he does not allow for any identity property, such as being identical to *a*. The later Russell seems to hold PII to be necessarily true, but since he invokes positional qualities, such as superiority[40], his position is closer to PII* than to PII. Black argues that it is logically possible for there to be numerically different but qualitatively identical things, thereby showing that the claim that PII* is a necessary truth is false[41]. Black imagines a symmetrical universe which consists of only two spheres. The spheres are qualitatively identical: each has a diameter of one mile, and both are made of iron and have the same temperature and colour. Every relational property of the one is also had by the other. Two such spheres cannot have properties of being in different places, because their places are qualitatively the same too, since they are in a symmetrical universe. Black says, "to say the spheres are in 'different places' is only to say that there is a distance between the two spheres" ("The Identity" 156). Since it is logically possible for there to be two different things sharing all their properties, the principle of identity of indiscernibles is false (*ibid.*). Thus, Black's counterexample seems to refute the principle as a necessary truth, therefore rendering the bundle theory false.

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[40] Being to the right of the center of a visual field.

[41] Hochberg notes that this problem was raised earlier, in 1947, by a Swedish philosopher, I. Segelberg (*The Positivist* 45).

How does Russell's bundle theory fare in the face of Black's objection to PII*? We have concluded, in Chapter 3, that qualities such as black, kind qualities such as being a sphere can make up a particular. But relational properties such as being 2 meters away from a particular sphere, B, or being 2 meters away from another black sphere cannot be constituents of a bundle. Russell does not include spatio-temporal properties in a complex in the regular sense. Instead of invoking properties such as 'being to the right of B', he allows into the makeup of a bundle qualities such as 'dexterity', meaning being to the right of the center of a visual field'. Russell calls such qualities 'positional qualities'. These qualities do not involve any reference to other particulars; hence do not pose a problem of circularity.

> I hold that a "thing" is nothing but a bundle of qualities, and that therefore, two different things cannot be exactly alike. But I hold this only because I regard position in space as defined by means of certain qualities not usually recognized as such...if I see two things at once, they cannot both be in the center of my field of vision; if one is so, the other is to the right or left of it, and above or below it...It is in virtue of these qualities that my visual field has spatial characteristics. The space of physics is partly constructed, partly inferred, from the space of visual and other immediate objects of perception ("The Problem" 260-1).

Positional qualities, however, require a perceiver or a perspective, according to which one bundle would be dexter and the other sinister. For Russell, that there are perspectives (actual or potential) is a necessary condition for there to be particulars in the physical world. If Russell were allowed to bring in a perspective, he would not have the problem of individuation between the two spheres. However, it is one of Black's conditions that no perspective is allowed. Black explains that if an observer were introduced, the spheres would have the properties of being to the left or right of the

observer which would distinguish one from the other. The spheres would have "acquired new relational characteristics" (157).

That is, Russell's reply assumes an observer. However, Black does not allow any observers or potential perspectives into his logically possible world. Black says that this would change the conditions of his counterexample. So, Russell's reply from the absoluteness of perceptual spaces cannot address cases where there is no perspective of any kind but only two objects in a symmetrical universe.

Perhaps we could reply on Russell's behalf that insisting that there can be no perspectives and therefore PII*, and therefore PII, is false is begging the question against Russell's version of the bundle theory. Hochberg makes this point when he says that Black's counterexample is not really an argument against Russell, "for it simply denies the existence of the non-relational location properties[42] or pairs of coordinate properties that are crucial for Russell's bundle analysis" (*The Positivist* 45).

Casullo attempts to defend PII by giving an argument from conceivability to show that Black's counterexample is not possible. Casullo claims that assuming that possibility is grounded on conceivability, we cannot conceive of these two spheres unless we have a mental image of them ("A Fourth" 135). Indeed, conceiving something that is essentially physical requires that we entertain an image of it. The two spheres in a symmetrical universe are physical objects. Thus, when I conceive of them I cannot help but form a

[42] By 'non-relational location properties', Hochberg means positional qualities in perceptual space.

mental image, which immediately gives me a point of reference, that is, the center of my visual field.

However, conceivability does not have to involve mental imagery. One can take a conceivable state of affairs as a set of logically consistent propositions: 1. There are exactly two spheres. 2. Any given sphere has qualities F, G, H. To this, I might reply that these are inconsistent propositions, given that a 'thing' is a bundle of properties. Thus, such a set is inconceivable. I should not be denied the assumption of the bundle theory. Insofar as we are dealing with propositions, we will have to accept some interpretation for the meaning of the words in those propositions. If I'm a bundle theorist, I'll hold that a 'thing' means a group of compresent properties. If I'm a substratum theorist, I'll hold that a 'thing' means a bare particular plus properties. Conceivability of Black's counterexample will depend on one's ontology and semantics. Thus, arguments from conceivability, understood as consistency, cannot be used in this debate between substratum and bundle theorists because they cannot agree on a common interpretation for the words they use, specifically 'a thing'.

It might be thought that the logical possibility of Black's symmetrical spheres is not a problem for a nominalist bundle theory that maintains that properties are not universals, but tropes. For the properties each sphere has would be different particular properties. When the bundles are composed of tropes there will never be two bundles that have exactly the same properties because no trope is identical to another; they are not universals, they are particulars. Therefore, the antecedent of the principle of identity of indiscernibles, 'two things share all their properties', (properties will mean tropes here)

can never be true under the trope theory, and therefore the principle can never come out as false (Loux *Metaphysics* 108).

Hochberg, however, shows that this is not the case. Hochberg explains that the two spheres cannot be distinguished on the trope view. "We can only refer to such different quality instances by referring to the spheres – 'the spherical shape of sphere x'" (*The Positivist* 47). That is, we would have to name the spheres and Black does not allow that either (157).

A way in which a realist bundle theorist might hold that the principle is a necessary truth, that is, to counter the possibility of there being numerically different but qualitatively identical particulars, is by appealing to haecceities or identity properties. Then each particular sphere in Black's example would have a property that the other does not have, namely, being that particular. The non-qualitative property of haecceity, or the non-qualitative property of being identical to 'a', may be used to differentiate between two spheres. In *PM* 1910, the early Russell argues that the property of being identical with a certain particular can individuate two things that are qualitatively the same. "It should be observed that by "indiscernibles" he [Leibniz] cannot have meant two objects which agree as to *all* their properties, for one of the properties of $x$ is to be identical with $x$, and therefore this property would necessarily belong to $y$ if $x$ and $y$ agreed in all their properties" (*PM* Introduction Ch. 2 §6). This shows that the early Russell admitted identity properties as properties that can individuate qualitatively similar particulars. This is consistent with his adoption of the substratum view in the same period. The substratum

each particular has individuates it, which is effectively the same as haecceity for the early Russell.

However, the later Russell cannot accept the identity property as an individuative property, mainly because he has now dropped the substratum view and adopted the bundle view of particulars. Another reason is that including the identity property into a bundle as an individuative property would make the account of particulars circular. The identity property assumes the concept of a certain particular. But on the bundle theory, particulars are constructed out of their constituents, so the constituents cannot presuppose the concept of a certain particular (Loux *Metaphysics* 109-110).

In any case, Black does not allow the spheres to have properties such as being identical to this sphere or that sphere. For he 'thinks treating such properties as individuative properties is just repeating the hypothesis that the two spheres are different. Black writes, "All you mean when you say '*a* has the property of being identical with *a*' is *a* is *a*... In fact you are merely redescribing the hypothesis that *a* and *b* are different by calling it a case of 'difference of properties'" (155).

Neither does Black allow subjunctive properties, such as 'If there were an observer, then one sphere would be on her left the other on her right'. Black argues that we would be "just pretending to use a name" (157).

Black considers the objection that one might argue that his counterexample is not verifiable. Indeed, one of Russell's arguments I mentioned earlier for the truth of the principle of identity of indiscernibles was from verifiability. Blanshard and Ayer make a similar criticism of Black's spheres. Blanshard argues the two spheres are not intelligible

because we are not allowed to call one 'this' and the other 'that' (397). For that would give them different locations with reference to an observer. And Ayer argues that the reason we can imagine such universes is that we "bring into the picture a point of observation with respect to which the two halves of the universe are differently situated" (33).

In reply, Black says we *can* verify that there are two spheres. "We could know *that* two things existed without there being any way to distinguish one from the other" (162). To support this claim Black appeals to the fact that we can verify that there are two stars by observing their gravitational effects even though we cannot inspect one in isolation form another. But I do not think that this example helps him because in such a case there will be properties had by one star and not by the other, namely, one will cause gravitational effect $x$ and the other gravitational effect $y$. The opponent is right that the counterexample is not verifiable. But surely, that it is not verifiable does not mean it is not logically possible.

Together with Black, Steven French argues that this objection confuses thinking about a possible state of affairs and the state of affairs itself. He admits that the 'I' who does the imagining will definitely be involved in imagining a two-sphere universe, but "it is possible for me to imagine a situation in which the universe existed but 'me' did not" (152). I agree with French that it is possible for me to imagine a world with two spheres without me in it. Thus, such a state of affairs is logically possible. But I do not think Black can also argue that it is verifiable. Verifiability, by definition, requires a verifier. But nevertheless I agree that the fact that such a universe is unverifiable does not mean

that such a universe is logically impossible. And showing a counterexample to be logically possible is all one needs to show that a principle is not necessarily true.

Hochberg claims that Black's argument does not show bundle theories to be false. All the argument establishes is that "no definite description that we can give, under the conditions assumed, will apply to only one of the spheres; hence any such description must fail". Any definite description we form will be satisfied by both spheres. So we cannot label them, for that would require a definite description such as 'Let the label A apply to the sphere such that...'. "This does not show that the spheres are indistinguishable in that they do not stand in different relations, but only that, given the limited resources we are allowed, we cannot distinguish them by description" (*The Positivist* 46). Admittedly, we cannot describe them as different. But that is exactly Black's point. We cannot describe them as two distinct things merely by appeal to their properties (including relational ones). Black claims since we can imagine these spheres as two, it is logically possible that there are two things which are indistinguishable from another.

Hacking's response to Black's challenge is to claim that the properties Black allows in his possible world underdetermine the claim that such a possible world has two individuals in it. Hacking argues that the same evidence could support either of two theories: that there are two individuals in Euclidian space and therefore principle of identity of indiscernibles is not true or that there is one individual in a Riemannian curved space and therefore principle of identity of indiscernibles is true. If the space the spheres are in were a Riemannian one, then the relational property of being a certain distance

away from would not require that another particular, i.e., a sphere, exist. For since a Riemannian space is curved, drawing a line away from one sphere would lead us back to the same sphere. So, Hacking continues, since the evidence does not singularly determine any one of these claims, the truth or falsity of the principle cannot be established by such counterexamples (249).

As a defense of Black's argument, R. M. Adams replies that a Riemannian world with one sphere would be a different logically possible world. The difference does not have to be a difference in description but can be regarded as a difference in possible realities (16). Following R.M. Adams, Ronald C. Hoy holds that one cannot claim that the same logically possible world can sometimes be described in accordance with principle of identity of indiscernibles or not described in accordance with it. "If one world contains only one ball bearing and another contains two aren't they different logically possible worlds? So a cogent complaint seems to be: Hacking is not redescribing a logically possible world; he is inventing a new one" (Hoy 279-80).

A. Denkel emphasizes the distinction between logical and physical possibility. He claims that "that there is an 'equivalent' description which assumes a non-Euclidean space is no hindrance here. For the point is that even in such a space there *could* be two distinct indiscernibles. Regardless of the nature of space, if there can be two distinct indiscernibles we have a counterexample" (Denkel fn 3). G. Landini and T. R. Foster also criticize Hacking for not distinguishing "logically possible worlds and principle of identity of indiscernibles from physically possible worlds and the principle of identity of indiscernibles" (58).

I think the best reply, which fits a realist bundle theory, comes from John O'Leary-Hawthorne. He claims that the realist bundle theory is immune to Black's objection since the properties of the bundle are immanent universals, spatio-temporally located in particulars. It follows from the qualities being immanent universals that any combination of them would also be universals, and therefore "can be fully present at many places at once. Thus it is possible by the bundle theorist's own lights that, say, the bundle consisting of F, G, and H be five feet away from itself" (O'Leary-Hawthorne 193). Black's universe would be described as "a world in which a *single* bundle of universals-the universals of solidity, mass, shape, colour, etc. collocated in one of the spheres- is *at some distance from itself*" (Zimmerman 306). That the principle of identity of indiscernibles is logically true is not a problem for the realist bundle theorist. It expresses exactly what the theory wants to maintain. In Black's imagined universe, there is only one particular, not two.

The immanent universals are such that they can be wholly present at many places at the same time. For instance, the numerically same greenness is in my cactus, in the spinach in my fridge, and in the olives hanging from a tree in Assos. Therefore, the property of greenness can be at a certain spatial distance from itself. O'Leary-Hawthorne argues that since the bundle is a group of properties, it is also repeatable. It follows that Black's symmetrical spheres do not work as a counterexample which defeats the bundle theory; on the contrary they are a straightforward and welcome consequence of the theory. There is numerically one group of properties in two different places just as there is numerically one green in many different places (O'Leary-Hawthorne 193). Just as

greenness can be a certain distance from itself, so can a bundle of properties, including greenness, be a certain distance from itself. Therefore, if we describe Black's universe as containing one bundle of universals which is at a distance from itself, then the bundle theory is not refuted (*ibid.* 194).

Against a potential objection to the effect that to say that the same group of properties is at a certain distance from itself is contradictory, O'Leary-Hawthorne replies that if being the same distance from itself is contradictory then the idea of immanent universals should also be contradictory (195). Dean Zimmerman agrees with O'Leary-Hawthorne that if the bundle theorist is granted immanent universals, then it is not inconsistent to describe the universe with only one sphere. Black would be begging the question against the bundle theorist by insisting that there are two distinct spheres (306).

Even though, Russell, for his own version of the realist bundle theory, does not need to defend the bundle theory as O'Leary-Hawthorne does, that is, without relying on any relational properties, such as, being at a certain distance from itself, O'Leary-Hawthorne's reply gives us a defense if the possibility that there is no observer is insisted on. In that case, we'll just maintain that the same bundle of qualities does recur in such a universe. This follows logically from taking properties to be immanent universals, which the later Russell does. Just as a property can be wholly at different places at a time, so can a group of them wholly be at different places at a time.

When a complex of qualities recurs, on Russell's theory, they would probably be part of the same causal chain that makes up an ordinary particular. Consider a spatio-temporal slice of one of my books on my table within my *tome* (total momentary

experience). Let us call it book-slice$_1$. When and if I perceive some other momentary particular, book-slice$_2$, (as part of a different *tome*[43]), which has the same qualities as book-slice$_1$, they will probably both be parts of the same ordinary particular, the book on my table. This inference is based on Russell's postulates of scientific inference, specifically the law of quasi-permanence[44]. Book-slice$_1$ and book-slice$_2$ will be the same particular only if the positional quality of the book-slice$_1$ is the same as that of book-slice$_2$ as well as its other qualities. For instance, if I look at my table from the same angle two seconds later, the book-slice$_2$ would have the same positional quality. But surely, if that positional quality changes, then the next bundle that resembles book-slice$_1$ will be another momentary particular. And its close similarity to book-slice$_1$ will give us some clue that it should belong to the same ordinary particular, the book on my table.

Interestingly, the early Russell had given an argument similar to Black's. Russell had argued against the bundle theory. The following is his argument from "On the Relations of Universals and Particular" (1911).

> It may be said that two patches are distinguished by the difference in their relations to other things. For example, it may happen that a patch of red is to the right of one and to the left of the other. But this does not imply that the patches are two unless we know that one thing cannot be both to the right and to the left of another ("On the Relations" 117).

1. Two patches of red are distinguished by the difference in their relations to other things. (Supposition- bundle theorist's claim)
2. Red (redness) both has the relation of being to the left of X, i.e. some reference point, and the relation of being to right of X. (from 1)
3. One thing cannot be both to the left and to the right of X. (Supposition)

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[43] The possibility that there may be another book-slice in the very same *tome*, with the same qualities, is ruled out by Russell's positional qualities. Such similar book-slices would not be sharing *all* their qualities if there indeed are two distinct book-slices in my *tome*. One would have a positional quality that the other lacks. For instance, book-slice$_1$ would be dexter and book-slice$_n$ would be sinister.

[44] See Chapter 3.

4. Therefore, there are two reds.

Russell argues that (3) is false. If red surrounds X completely, then red would be both to the left and to the right of X. Therefore, (4) does not follow[45]. Therefore, two things cannot be distinguished by their relations. Therefore, the bundle theory is wrong.

One problem with this argument is that the supposition (1) would be wrong on the later Russell's account. The bundle theory does not maintain that *relations* individuate qualities or bundles of qualities in perceptual space. It maintains that coordinate *qualities* do. Dexterity and sinisterity are qualities, not relations. So if red is dexter, that means two qualities, i.e., redness and dexterity, are compresent. It may be the case that red is also compresent with sinister. There is nothing in the bundle theory that excludes that. For red is the same thing when compresent with dexterity and when compresent with sinisterity.

Another problem is that it attributes a position to the bundle theory that it actually rejects. The bundle theorist does not assume (3). On the contrary, the bundle theory denies (3). It is the characteristic of immanent qualities that they can have spatio-temporal relations to themselves.

The worst problem is that it is begging the question against the bundle theory, just like Black does. The early Russell's argument seems very similar to Black's argument. Two things that are qualitatively alike are the spheres with certain shared qualities, and the corresponding "two things" in Russell's example are the two red patches. Both the

[45] Russell explains that on the scenario that *x* is completely surrounded by red, and supposing that a *y* which is qualitatively identical x is completely surrounded by black, then *x* and *y* will be distinguished by having different relations because one will be surrounded by black and the other by red. But Russell's answer to this is that we will need to know that something cannot be surrounded by red and black at the same time and this, according to Russell, presupposes the numerical diversity of *x* and *y* ("On the Relations" 117).

spheres and red patches are presumed to share their relational properties as well. Black shows how this is possible with his symmetrical universe. If the universe is symmetrical, then one sphere can be a certain distance from another sphere, and hence the two spheres will share their relational properties as well. And the early Russell points out that one thing, i.e. red patch, can have the same relations with another if red surrounds X, the center of one's visual field. Thus, red will have both the properties of being to the left of and to the right of, and hence those properties will be shared by 'both' reds. Therefore, relational properties do not help individuate the spheres or the reds. But just like Black does, the early Russell assumed at the outset that there are two reds. So, we end up with the bundle theory unable to explain how there are two things, i.e., two reds or two spheres.

However, on the bundle theory, if "two" reds do share all their properties, then they would be the same red, and not two. Similarly, Black's spheres are one according to the bundle theorist, not two. The later Russell uses positional qualities to distinguish qualitatively alike things. But when a perspective of any kind is not allowed, as in Black's imagined universe, Russell is rid of this solution. In such cases the later Russell will have one bundle, while a substratum theorist will insist that there are two.

So far, we have examined the problem of individuation with respect to momentary particulars. I conclude that i) to insist against Russell that it is logically possible to have a universe with no perspectives whatsoever is to beg the question against his version of the bundle theory of momentary particulars. ii) Nevertheless, if (i) is denied, we can, by appeal to O'Leary-Hawthorne, show that on a realist bundle theory, if

the same complex of properties recurs, it will have to be the same particular, not a different one. Now, we need to examine how these conclusions fit with particulars (1) and (2).

### 4.2 The Problem of Individuation with respect to Point-instants

On the individuation of point-instants, Russell says that another complex with the same properties can recur but never will; he only maintains that it is empirically impossible for the same complex to recur. He accepts that "it is logically possible for [a complex of compresence] to occur more than once, but [he] assumes that if [the complex] is sufficiently complex, there will not in fact be recurrence" (*HK* 306). The more complex the compresence, the less likely that the same particular will recur. But surely, as with all kinds of particulars on the bundle theory, there is the logical possibility that it may because it is composed of universal qualities.

A complete complex of compresence is a *tome* within the perceptual space. Everything I perceive, or a camera captures, at a moment would comprise a complete complex of compresence. This would include the qualities of various momentary particulars. For instance, my *tome* right now includes the qualities of the frontal view of my computer, a couch on the right of my visual field, books and pens all over the table, the humming of the stove, etc. This *tome* is complete when all the qualities perceived (rather, perceptible) are included in it and there is no other quality outside of the *tome* which is compresent with every quality in the *tome*. This complexity of a *tome*, a complete complex of compresence, makes it highly unlikely that it should recur.

The later Russell, having given up on certainty as to knowledge of the external world, is not concerned over the logical possibility of the recurrence of a complete complex of compresence. He is content with constructing a space-time series out of point-instants, which have a high degree probability of nonrecurrence.

### 4.3 The Problem of Individuation with respect to Ordinary Particulars

The problem of individuation with respect to (2), that is, what is in general called 'the problem of identity' is the question of determining criteria for when one ordinary particular can be regarded as the same thing over time, what changes it can go through and remain the same thing. Ordinary particulars, for Russell, are things that probably persist. We know them as chains of bundles of qualities, which are causally connected to each other. Hence, Russell's answer to this problem would be that two particulars should be regarded as the same ordinary particular if there are causal chains connecting one to the other, which would track the loss and gain of various qualities in time.

In the next chapter, we'll discuss whether the bundle theory has the consequence of making all true propositions about particulars necessarily true.

## Chapter 5: The Problem of Necessity

There is a reductio argument against the bundle theory that the theory implies that all the properties of a particular are essential to its identity, so that all propositions ascribing properties to a particular, that is, subject-predicate propositions (S-P propositions) become metaphysically necessary truths. But not all S-P propositions express necessary truths. Therefore, the bundle theory must be false. Van Cleve formulates this objection to bundle theories in general as follows:

> It [is] not true of any individual that it might have existed with properties other than the ones it actually has: we cannot suppose that a complex whose constituents are F, G, and H might have existed with F, G, and J as constituents instead. Thus, the bundle theorists' world ... is a Leibnizian one in which every individual has just the properties it does necessarily. Adam need not have existed at all, but once in existence could not have done otherwise than eat the apple ("Three" 99).

The argument claims to show that one cannot get contingent predication on the realist bundle theory. If we suppose that *a* might have been consisted of F, G, and J, we'll have identified two complexes with different properties. In this chapter, we will discuss how we can defend Russell's bundle theory against this objection.

Van Cleve's own solution is to *eliminate* particulars (individuals) in favour of bundles of qualities as logical constructions, instead of *reducing* particulars to logical constructions of qualities. Individuals are eliminated, and every sentence about an individual is to be translated into one exclusively about properties ("Three" 103). When individuals are eliminated, as on Van Cleve's view, the problem of accidental or necessary predication also disappears, for there are no individuals which could have their

properties essentially or contingently. But we cannot follow Van Cleve, because Russell does not eliminate particulars altogether. Russell merely wants to explain them in terms of qualities. Russell identifies individuals with a bundle of compresent qualities, but does not eliminate them. I argued in Chapter 3 that particulars are inferred entities for the later Russell, not logical constructions. But in this discussion it does not matter whether we take them as constructed or as inferred as long as we are agreed that particulars are not eliminated when identified with either constructions or inferred entities.

In the objection above, (3) is not false, unless (1) reads 'A particular is necessarily identical to a bundle of compresent qualities'. Thus, in order for this objection to be plausible, the bundle theory must be taken to be asserting a necessary identity between a particular and the compresence of certain qualities. This would be the case if bundles were classes, or if bundles were taken to be mereological sums (i.e., if one adopts mereological essentialism) or if one adopts the view that all identity statements express necessary relations. Otherwise, there is no reason why the qualities of a bundle would have to be essential to it. I will show that none of these assumptions are, or need to be made on Russell's version of the bundle theory.

But before we discuss these assumptions, we should review Russell's view on necessity and possibility so that we can anticipate how he would respond to the charge that there is no room on the bundle theory for contingent predication.

## 5.1 Russell's Views on Modality

Russell underplays modal notions. He denies that properties have any further features of being essential or accidental.

> There seems to be no true proposition of which there is any sense in saying that it might have been false. One might as well say that redness might have been a taste, and not a colour. What is true, is true; what is false, is false...The only logical meaning of necessity seems to be derived from implication (*POM* §430).

In his 1905 article, "Necessity and Possibility", Russell considers several theories of necessity available to him at that time. (1) The theory that confounds metaphysical necessity with aprioricity. (On this view, we tend to think that what we know empirically could have been otherwise so we call those truths contingent and we think what we know a priori could not have been otherwise, and we call those truths necessary.) (510). (2) The theory according to which a proposition is necessary if it is implied by another proposition (512). (3) A necessary proposition is an analytic proposition, where analytic propositions are those "which are deducible from the laws of logic" (516). (4) The view that necessity can only properly apply to propositional functions[46], not propositions.

Russell denies (1) because on this view propositions do not have any "notable *logical* characteristics" that make them necessary or possible (*ibid.* 510). He denies (2) because on this view all propositions become necessary, since any proposition will follow from another (512). Russell rejects (3) because there are propositions which seem to be necessary, but which are not analytic, such as "If a thing is good, then it is not bad", (517).

[46] Propositional functions are "expressions in which there are one or more variables and which are such that, when values are assigned to the variables, the result is a proposition" (*MPD* 124).

(4) is the view Russell espouses[47]. A proposition is necessary "when it is an *instance* of a type of propositions all of which are true" (517). Russell imagines taking a London cab which has a number plate with five figures, and then he thinks, 'This London cab could have had a 4-digit number plate'. What is meant by this proposition is "This is a London cab, and some London cabs have numbers consisting of four figures" (518). The subject of the proposition is to be regarded as an indeterminate object, represented by a variable, according to Russell. That is why he claims necessity is properly a predicate of propositional functions, not propositions. To determine whether a proposition is necessary or not, we need to replace constants with variables, and determine if it is true that the property attributed to the constant is true for all values of the variable. Take, 'Socrates is mortal'. The propositional function would be 'x is mortal', and its universal closure, 'For all x, x is mortal' is necessary throughout the class human. "The propositional function 'x has the property $\phi$' is necessary if it holds of everything; it is *necessary throughout the class u* if it holds of every member of *u*" (518). Then on this theory, a proposition about a particular, as derived from its corresponding propositional function, cannot be necessary per se, but has to be necessary relative to a class. Russell writes, "'x is mortal' is necessary throughout the class *man*" (518). But that is odd, for then a propositional function can be both necessary and possible depending on which class we take as our reference. Take, 'Socrates is smart'. If I take the class of men as the class *u*, then the corresponding propositional function will be possible because some men

[47] Russell keeps to this view of modality as only applying properly to propositional functions in his later work, as we see in "Philosophy of Logical Atomism" (1918 p. 231) and *AMa* (1927) (2001 ed. pp. 169-170).

are smart, but not all. But if I take the class *u* to be the class of eminent philosophers, then it would be necessary.

This account of modality, then, seems to take modality to be a relation between two classes. And this sounds very close to the later Russell's view of probability as a relation between propositional functions. Perhaps that is why even in 1905 he considers the possibility of explaining modalities in terms of a theory of probability.

> The subject of *probability* is one which is naturally associated with modality: the probability of a proposition's being true may be supposed to be a measure of its greater or less degree of possibility. Thus, it would be necessary, in order to show that modal distinctions are never required, to produce a theory of probability in which no such distinctions are invoked. I am not prepared, in this paper, to advocate any view on such a thorny question as probability; and I confess that I do not know any view which strikes me as tenable ("Necessity" 519).

As we have seen in Chapter 3, Russell in 1948 (*HK*), discusses a tenable theory of probability by Keynes. However, he does not connect probability to modality in *HK*. But it seems to me that this is the most fitting theory of modality for his later philosophy, although I will not attempt to show it in this thesis. I will only note that such a theory of modality is hinted at by Bigelow, Collins and Pargetter in "The Big Bad Bug: What are the Humean's Chances?", showing the possibility of linking modality to probability: "...thinking of '$Ch_{tw}$ (–) =1' and '$Ch_{tw}$ (–) > 0' as modal operators like necessity and possibility. That is, we interpret '$\Box$A' as meaning '$Ch_{tw}$ (A) =1', and take '$\Diamond$A' to mean '$Ch_{tw}$ (A) > 0'"[48] (458).

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[48] '$Ch_{tw}$ (–) =1' reads as 'The chance of a proposition at time t in world is equal to 1', that is, the proposition is necessary. '$Ch_{tw}$ (–) > 0' reads as 'The chance of a proposition at time t in world w is greater than 0', that is, the proposition is possible.

Let us examine what it would mean for the bundle theory of particulars to be necessarily true according to Russell's notion of modality. In accordance with Armstrong's argument[49], I accept that Russell puts forward his bundle theory as a necessary truth about particulars: It is necessary that a particular is a bundle of compresent properties, which means, for all x, if x is a particular, then it is a bundle of compresent properties. Nothing so far indicates that something has to consist of the very properties it does happen to consist of.

Let us take the bundle theory to be true of a certain particular with certain properties and predicate necessity of the "proposition" expressing this, as Van Cleve claims. In accordance with Russell's notion of modality, we'll replace the individual A with a variable:

> It is necessary that A is a bundle of F, G, and H in a compresence relation.
> 1. It is necessary that x is a bundle of F, G, and H in a compresence relation.
> $\Lambda x\ (Px \rightarrow x = K\ (F, G, H))$[50]

When we specify the certain qualities a certain particular has, as in (1), we end up with a necessity claim such that for it to be true all particulars would have to be composed of the very properties F, G, and H, and no others. This is absurd. So perhaps we should try,

> 1'. It is necessary that if x is identical to *a*, then x is a bundle of F, G, and H in a compresence relation.
> $\Lambda x\ (Px \wedge x = a \rightarrow x = K\ (F, G, H))$[51]

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[49] See Chapter 4.

[50] For all x, if x is a particular then x is identical to the compresence of F, G, and H.

[51] For all x, if x is a particular and x is identical to *a*, then x is identical to the compresence of F, G, and H.

Necessarily, if a particular is identical to *a*, then it is a bundle of properties F, G, and H. This expresses the later Russell's bundle theory of particulars correctly. On this symbolization, the claim that all properties of a particular are essential does not follow from the necessary truth of the bundle theory of particulars.

Thus, it is not true for the later Russell that all the properties of a bundle are essential properties. On the later Russell's account of particulars, the properties are not essential in the sense that some properties of the object are essential and other properties accidental. Rather, Russell's particulars have all their properties "constitutionally", that is, all the specific properties of a particular determine its identity. There is nothing to the particular beyond being a group of compresent properties. Every property has to have equal weight in the identification of the particular of which it is a part.

Now let us examine whether we might have to accept the conclusion that all properties of a particular are essential to it, owing to either one of the required assumptions we mentioned earlier.

### 5.2 If Bundles Were Aggregates (Classes)

One formulation of the reductio argument against the bundle theory to the effect that all properties of a bundle are essential to it is based on the assumption that bundles are classes. If bundles were classes, then the truth of the bundle theory would imply the necessity of its properties. As J. V. Cleve puts it, "if a thing were a set of properties, all of its properties would be essential to it: not only could it not change its properties, but it

could not have different properties to start with. This is because it is essential to a set that it contains the very members it does" ("Three" 96).

The qualities of a bundle would be essential to it, as Van Cleve argues, if bundles were taken to be classes of qualities. But I'll show that Russell's bundles are not classes.

Russell explains that there are two kinds of wholes: 1. Aggregates[52]: An aggregate is a whole which is definite as soon as its constituents are known. "Classes [i.e. sets] are to be interpreted as aggregates", except when a class contains one term or none (*POM* §139). 2. Unities: A unity is a whole which is not completely specified when its parts are all known. Unities "contain relations or ... predicates, not occurring simply as terms in a collection, but as relating or qualifying" (*ibid.* §135 & 136). A unity is not a class. The parts of a whole as a unit are identified by analysis (*ibid.*).

Russell's bundles, both as ordinary particulars and as momentary particulars, are wholes in the sense of unities, not aggregates (*HK* 297). Enumeration of the properties in a bundle does not suffice to determine the bundle. The properties need to be in a compresence relation. The compresence relation itself is not a member of the bundle but it is a relation that binds the qualities in a bundle. And ordinary particulars, as we explained in Chapter 2, are causal lines, momentary particulars linked to each other with causal chains. It is a contingent fact that an ordinary particular consists of the momentary particulars it does consist of (Casullo "A Fourth" 130). The causal chain could easily have had different momentary particulars as links.

[52] Russell took classes to be aggregates, but today 'aggregate' is regarded as a non-class, something not abstract. K. Fine, for instance, takes 'aggregation' to be a form of nonstructural composition, as in some sand of grains forming a quantity ("Compounds and Aggregates." *Nous*. Vol. 2. June 1994. pp. 137-158).

But bundles understood as classes or aggregates would yield the result that every property in the class is necessary. The reason that properties end up being necessary when a bundle is a class is that the identity between a class and its members is necessary. If two classes differ even in one member, they are not identical. But as we explained just now, bundles are not identical to classes on Russell's version of the bundle theory. If we take bundles as unities, as we should, then the necessity of properties of a particular will not follow.

### 5.3 Mereological Essentialism

Van Cleve claims that the objection that all properties of a particular are essential still applies when bundles are regarded as "wholes of which properties are parts" ("Three" 95). Van Cleve argues that for a bundle to be a whole could mean either that it is a mereological sum or that it is a logical construction out of properties (*ibid.* 97). And if a particular is a mereological sum, it implies mereological essentialism (ME), which is the principle that "for any whole x, if x has y as one of its parts then y is part of x in every possible world in which x exists," or "every whole has the parts that it has necessarily" (Chisholm, "Parts" 66). On Van Cleve's view, the bundle theory implies ME even when a particular is identified with a logical construction of properties when identification is taken in the sense of *reduction*, and I think he is led to this conclusion because he regards identity between a particular and a bundle of properties to be a necessary relation.

When particulars are identified with bundles of properties, either as mereological sums or as *reduced* to logical constructions, Van Cleve argues that "it will not be true of

any individual that it might have existed with properties other than the ones it actually has: we cannot suppose that a complex whose constituents are F, G, and H might have existed with F, G, and K as its constituents instead" ("Three" 99). Van Cleve claims that the relation of compresence cannot help here. What the compresence relation provides is only a defense against the necessary existence of a particular. "Of any individual, it will be true that it might not have existed at all, since the properties constituting it might not have been co-instantiated" ("Three" 99). But when it comes to whether a whole could have had different properties than it actually has, compresence is of no help.

We know that Russell rejects mereological essentialism (Casullo "A Fourth" 130). As I explained in Chapter 3, Russell would not acknowledge a particular to have any essential properties, other than its property of self-identity. And if we had to accept that he is committed to ME, I do not think there is any way out of the problem of all the properties of a particular being essential to it. Chisholm gives a defense of his ME, arguing that ME does not actually imply that all the properties of a particular have to be essential to it, i.e., that an individual would have to have the same properties in all possible worlds if ME were true.

Chisholm mentions one of the arguments against ME: (1) I could have had blond hair. (2) If I did have blond hair, then my body would have different parts than it has right now. So, (3) my body could have had different parts than it has now. (4) My body is such that in some possible worlds, it has parts other than the ones it actually has. But (5) ME implies that my body should have the same parts that it actually has in every possible world in which it exists. Therefore, (6) ME is false (Chisholm 67).

Chisholm claims that this argument fails because it equivocates. Premises 2 & 3 use 'part' in the ordinary sense, and premise 5 uses it in the strict sense. To say, in the ordinary sense, (3), that is, my body could now be a thing having blond hair, is to say that "something which now constitutes a part of [my body] could be joined with something that now constitutes [my hair]" (74). That is, to use the example which Chisholm gives, if we say in the ordinary sense of 'part', "that my automobile could have a certain tire as one of its parts, we are not saying that there is a possible world in which that automobile does have that tire as one of its parts. We are saying, rather, that something that constitutes a part of my automobile and something that constitutes the tire are such that there is a possible world in which they are joined together" (74-5). And when (3) is analyzed thus, (4) does not follow. "From the fact that my automobile *could*, [in the ordinary sense], have a certain tire as a part, it does not follow that my automobile is such that in some possible world *it* has that tire as a part" (75).

From the way Chisholm defends ME, it sounds like ME does not actually claim what we generally think it does. ME supposedly maintains that a whole has its parts necessarily, but when we read Chisholm we see that this is not true. In his analysis of a modal claim, there is no mention of the whole anymore. Assuming F and G are the only parts of a whole A, to say in the ordinary sense that 'A could have had J as a part', is to say that F and J are joined in some possible world, or G and J are joined together in some possible world, we end up not being able to make any claim about A. I think Chisholm evades the objection merely by redefining ME.

Assuming that ME does imply that the properties of a particular are essential to it, it will have a problem with transworld identity. If my having blond hair in another possible world is analyzed as the sum (all of my body parts minus my hair plus blond hair), this assemblage of properties will not be identical to the assemblage of properties that constitutes me in the actual world with brown hair, even though we might want to say that it is the same person in question in both worlds. I think Chisholm's ME leads to the counterpart theory; he will have to maintain that me with blond hair is not identical to me with brown hair; it is another, very similar, individual.

Russell would not espouse ME and neither does the bundle theory require him to do so. If Russell had to categorize properties as either essential or accidental, he'd maintain that all properties are accidental, except for self-identity. And we should note that self-identity is not the property of being identical to a certain particular, say *a*. They are distinct properties; self-identity is a property had by everything, but the property of being identical to *a* is had only by *a*. The bundle theory does not require that all the properties of a bundle are essential to it on the grounds that its identity requires all its intrinsic properties. That a bundle requires all its intrinsic properties for its identity only means that these properties are constitutive of its identity. And that a whole is constituted by its parts does not imply that the parts are necessary to it, unless one espouses mereological essentialism, which Russell does not. A bundle could have had properties other than the ones it actually has.

### 5.4 The Relation of Identity: Necessary vs. Contingent

Another way in which the properties of a particular may be regarded as essential to it follows from the assumption that the identity relation between a particular and a bundle of compresent properties is a necessary relation. I'll first try to show that for Russell the identity between a particular and the bundle of properties which make it up is contingent. According to Russell, the identity relation is necessary only in the case of self-identity, but it is contingent when one or both of the relata are descriptions: a bundle of compresent properties can be referred to by definite description. Secondly, we'll discuss Barcan-Marcus's and Kripke's argument for the necessity of all identity relations and whether it forces us to admit that all identity statements are necessary.

The necessity of the properties of a particular (bundle) would follow if the identity relation between a particular and the complex of compresent properties is taken as a necessary relation. For an individual then would be identical to the same bundle of compresent properties across all possible worlds. If an individual *a* is necessarily identical to a bundle of compresent properties F, G, and H in the actual world, it will also have to have the same properties in any other possible world in which it exists.

A particular *a* is not necessarily a bundle of properties F, G, and H. Russell has proposed the bundle theory as a necessary truth about particulars, but this does not mean that a certain particular has to be constituted of the very properties that happen to constitute it.

According to Russell, identity statements are not necessary unless the identity in question is self-identity. Russell distinguishes between logically proper names and

ordinary proper names. Bundles of compresent properties will typically have ordinary proper names. And ordinary proper names, for Russell, are disguised definite descriptions. Hence, identity statements where ordinary proper names are involved are identity statements where the relata are definite descriptions. Such identity statements are contingent on Russell's view. "The principle of identity itself [i.e., x = x] fails to hold for descriptive terms, although it continues to hold for variables and name letters" (Kalish, Montague, and Mar 396).

Russell says that if one asserts 'Scott is Sir Walter' they would probably use those names as descriptions, not names: "One would mean that the person called 'Scott' is the person called 'Sir Walter'" (*The Philosophy of Logical* 246). But if one uses the names in the sense of logically proper names then the statement would be a tautology. 'ιxSx = ιxWx', i.e., the person called 'Scott' is identical to the person called 'Sir Walter', would, on Russell's analysis, be analyzed as $\forall y \forall z ((\Lambda x (Sx \leftrightarrow x = y) \wedge \Lambda t (Wt \leftrightarrow t = z)) \rightarrow y = z)$.

However, Barcan-Marcus ("The Identity" 2.32) and later Kripke have argued that all identity statements are necessary. If they are right, then we cannot defend Russell by appeal to the contingency of the identity relation between a particular and a bundle of properties. The reason is that if *all* identity statements, including the ones where one or two of the relata are definite descriptions, then the proposition, '*a* is identical to a bundle of properties F, G, H' will express a necessary truth.

The following is Kripke's symbolization.

1. $\Lambda x \Lambda y((x = y) \rightarrow (Fx \rightarrow Fy))$ Indiscernibility of Identicals (LL)

| | |
|---|---|
| 2. $\Lambda x \Box (x = x)$ | Self–identity is necessary |
| 3. $\Lambda x \Lambda y ((x = y) \rightarrow ( \quad (x = x) \rightarrow \quad (y = x)))$ | 1, Substitution |
| 4. $\Lambda x \Lambda y ((x = y) \rightarrow \quad (x = y))$ | 2, 3 "The clause (x=x) drops out because it's known to be true" ("Identity" 136). |

Russell's reply to the argument, as Kripke symbolized it, would be to reject that the quantifier in Leibniz's Law ranges over properties such as being necessarily identical to *a*. In fact, according to Russell, objects do not have any property necessarily. Russell, in the quoted text below, claims that one cannot accept predicates that properly apply to propositional functions as properties of individuals:

> Much false philosophy has arisen out of confusing propositional functions and propositions. There is a great deal in ordinary traditional philosophy which consists simply in attributing to propositions the predicates which only apply to propositional functions, and. Still worse, sometimes in attributing to individuals predicates which merely apply to propositional functions. This case of necessary, possible, impossible, is a case in point...Propositions are only true or false" (Russell "The Philosophy of Logical Atomism 231).

E. J. Lowe argues that Kripke and Barcan-Marcus have assumed that objects have some properties necessarily, instead of proving it. Lowe puts this point more clearly in the argument below (85):

| | |
|---|---|
| (0) $a = b \rightarrow \Box a = b$ | Kripke's and Barcan-Marcus's assertion (CD) |
| (1) $\Lambda x \Box (x = x)$ | Necessary self-identity |
| (2) $\Lambda x \Lambda y((x = y) \rightarrow (Fx \leftrightarrow Fy))$ | Indiscernibility of Identicals (LL) |
| (3) $a = b$ | Premise |
| (4) $\quad a = a$ | 1 |
| (5)[53] $\quad (= a)\ a$ | 4 |
| (6) $a = b \rightarrow \Lambda F\ (Fa \rightarrow Fb)$ | 2 |
| (7) $\Lambda F\ (Fa \rightarrow Fb)$ | 3, 6 MP |
| (8) $\quad (= a)\ b$ | 5, 7, UI |
| (9) $\quad a = b$ | 8 |

[53] *a* has the property of being necessarily identical to *a*. (This symbolization is suggested by Nicholas Griffin.)

Lowe argues that (5), 'It is true of *a* that it is necessarily identical with *a*', does not follow from (4), 'It is necessarily the case that *a* is identical with *a*'. What should follow from (5), according to Lowe, is (5)*, 'It is true of *a*, in particular, that it is necessarily identical with *itself*'. Lowe claims, "to assume that we can conclude [5] is, it may be said, effectively just to assume that any truth of identity concerning *a* is a necessary truth, which is the very thing to be proved (Lowe 86-7).

But it seems to me that if one allows (1), then one has to allow the move from (4) to (5) because (5) is merely an instance of (1). Hence, I think the problem starts right at (1). (1) assumes that the necessity of self-identity, i.e., '□ Λx (x =x)' is equivalent to 'Λx □ x = x'. Once you accept (1), (5) follows from (1) and (4).

Self-identity is, (i) 'It is necessary that for all x, x is identical to itself'. But Kripke and Barcan-Marcus have taken it to be equivalent to (2), 'For all x, x is necessarily identical to x'. For only then can (1) and (4) can yield (5). And in Kripke's symbolization, (3) works as a substitution only if we assume that (i) and (2) are equivalent. That is, if one accepts that self-identity means the same thing whether the box is outside of the universal quantifier, or inside of it, then the conclusion follows.

Thus, the property of being necessarily identical to *a* will not follow from the argument if we deny the first premise. However, one may have other grounds for accepting such properties as being necessarily identical to *a*.

It seems that the following reasoning is another way Kripke gets at the property of being necessarily identical to *a*: *a* is identical with *a*. Ordinary proper names are Millian.

(The only function of '*a*' is to refer to a). Ordinary proper names are rigid designators. ('*a*' designates *a* in all possible worlds in which *a* exists). Therefore, a particular, *a*, has the property of being necessarily identical to *a* (*Naming* 3).

That is, it is because names are taken to be rigid designators that there is such a property as being necessarily identical to *a*. If that is the case, the conclusion that all identity statements are necessary will not follow if one rejects rigid designation, and nor will the property of being necessarily identical to *a*.

Another reason that Kripke gives for holding identity statements to be necessary is that he thinks philosophers such as Russell have confused the way we learn or know that two things are identical with the way they are related to each other metaphysically. Kripke holds that one learns of the truth of an identity by empirical means, which leads philosophers like Russell to think that identity is a contingent relation. But Kripke points out that the fact that we learn of the identity by empirical means is an epistemological fact, not a metaphysical fact (*Naming* 101; Fitch 91). Kripke believes that the puzzle about identity statements is "based upon a failure to carefully distinguish the metaphysical status of a statement from its epistemic status" (Fitch 97). But I do not think that that was Russell's problem. He plainly attributes this view of modality to others, Meinong in particular, in his 1905 article. Russell simply does not think that necessity applies to propositions. According to him, it does not make sense to say, 'It is necessary that *a* is *a*'; what would make sense is, 'It is necessary that x is x'.

We have seen that in order for the objection concerning necessity to work, one would need to make any one of the assumptions discussed above: that all identity

statements express necessary relations, or that bundles are aggregates, or that mereological essentialism, is true. And none of these assumptions are made, or need to be made, on Russell's version of the bundle theory. Therefore, the reductio argument against Russell's bundle theory does not hold.

Before moving on to the next section, we should note that Kripke claims he has a solution to the problem that identity statements where descriptions are involved seem to express contingent truths, and not necessary truths. His example is, 'The man who invented bifocals is the first Postmaster General of U.S'. Kripke says we should take the necessity operator to have a narrow scope:

> We have quite an adequate solution to the problem of avoiding paradoxes if we substitute descriptions for the universal quantifiers in [$\Lambda x \Lambda y$ ((x = y) $\rightarrow$ $\Box$ (x = y))] because the only consequence we will draw for example, in the bifocals case, is that there is a man who both happened to have invented bifocals and happened to have been the first postmaster General of US, and is necessarily self-identical. There is an object x, such that x invented bifocals, and as a matter of contingent fact an object y, such that y is the first Postmaster General of US, and finally, it is necessary, that x is y. What are x and y here? Here, x and y are both Benjamin Franklin, and it can certainly be necessary that Benjamin Franklin is identical with himself. So, there is no problem in the case of descriptions if we accept Russell's notion of scope ("Identity" 139).

Thus, the lesson a bundle theorist is supposed to draw from Kripke's solution above is that we can analyze '*a* is necessarily identical to a bundle of properties F, G, and H' as

$$\forall x (\Lambda y ((Fy \wedge Gy \wedge Hy) \leftrightarrow y = x) \wedge \Box x = a)$$

What does '$\Box$ x = a' mean really? Kripke's answer will again have to be they each are necessarily self- identical. Now if all we were going to attribute to a particular was that it is necessarily self-identical, we did not need to predicate necessity to all identity

claims. □ Λx (x = x) would be just fine, or even Russell's Λx (x = x). Besides, I do not think Kripke's Russellian analysis of an identity statement with descriptions gives the same meaning as the original necessary identity statement. If someone asserts that Franklin is necessarily identical with the inventor of bifocals, they mean things could not have been otherwise; Franklin had to invent those bifocals. They do not mean that someone in particular invented bifocals and Franklin and that someone are identical and Franklin and that someone is each necessarily self-identical.

In other words, if in the end we were going to analyze a necessary identity statement involving a description in such a way that all we can say about the two are that they are identical and each is self-identical, then it was pointless to argue that all identity is necessary in the first place. It seems to me that Kripke did this just so that he could have his rigid designation. Thus, I do not think the solution Kripke provides is a genuine one. Therefore, if Kripke's and Barcan-Marcus's argument does show that all identity statements are necessary, then this result would affect the bundle theory.

### 5.5 Russellian Bundles in the Contemporary Modal Discussion

I have so far defended the later Russell against the charge that all propositions about particulars express necessary truths using Russell's tools. Now, I'd like to see if we can have a Russellian bundle theory of particulars in the contemporary discussion of possible worlds. We'll discuss what kind of view of possible worlds would be most suitable to the bundle theory and Russell's general attitude towards de re modality. We'll give up Russell's view of modality as applying to propositional functions so that we can predicate

a proposition about an individual with necessity. We'll keep his view that only self-identity is necessary, other identity statements are not.

In the following, I will use Kit Fine's distinctions to categorize Russell's views. Fine claims that one can have two main positions on the nature of individuals: metaphysical haecceitism, where one would be a either a substance or a substratum theorist; and metaphysical anti-haecceitism, where one would hold some version of the bundle theory of individuals. Fine also distinguishes two such positions with regards to the nature of necessity. Accordingly, one could be a modal haecceitist and hold that an individual *a* is necessarily identical to *a* in every world in which it exists, or one could be a modal anti-haecceitist and maintain that an individual *a* is to have at least some of the same properties wherever it exists. Modal anti-haecceitism is the view that possible worlds must ultimately be identified merely by properties (Fine 31). Moreover, one could have a combination of either these modal and metaphysical views. For instance, modal haecceitism is not incompatible with metaphysical anti-haecceitism. One could be a metaphysical anti-haecceitist, i.e., hold that an individual is a bundle of properties but at the same time be a modal haecceitist, i.e. hold that a particular *a* in the actual world is necessarily identical to *a* in every possible world in which it exists (Fine 33).

Russell, then, is a 'metaphysical anti-haecceitist': This is a position which "states that the identity of individuals is to be explained in terms of their purely qualitative features or their qualitative relationships to other individuals" (Fine 31). One natural development of Russell's views leads to a combination of metaphysical and modal anti-haecceitism since he would like to explain particulars, both in the actual world and in

possible worlds, in terms of properties. And such a Russellian view is developed by David Lewis. But first, Lewis's view has the disadvantage of positing actual possible worlds (Lewis "Possible" 183). Russell would disagree with this view because it is not ontologically parsimonious. Secondly, the need for contingent predication leads to accepting the counterparts of actual individuals in possible worlds. Say that an individual *a*, has properties F, G, and H in the actual world. Its identity will be determined by the compresence of these properties both in the actual world and any possible world in which it exists. *A* cannot be identical to a different bundle in another world, hence there can be no contingent predication. So, Lewis explains contingent predication by adopting the counterpart theory. To give an account of, 'Harper could have been a better Prime Minister', we would have to appeal to some counterpart of Harper to make sense of such de re modal sentences ("Counterpart" 113). And critics of the counterpart theory argue that it does not capture what we mean by such a modal sentence; we want to say of Harper that he could have been a better Prime Minister, not of someone who resembles the actual Harper (Kripke *Naming* 45 fn. 13).

Another major problem related to contingent predication is transworld identity. On any non-deflationary view of possible worlds, we need to answer the question as to what the conditions are for an individual *a* in one world and some other individual in another to be one and the same. On Lewis's model, the criterion of identity is sameness of properties. That is why if *a* has properties F, G, and H in the actual world, another individual in another world could be *a* iff it has those properties ("Counterpart" 126).

Another option might be to opt for a combination of metaphysical anti-haecceitism and modal haecceitism. On such a view, the solution to the problem of transworld identity will be modal haecceities, e.g., *a*'s being necessarily identical to *a*. Modal haecceity will provide transworld identity. Modal haecceities logically depend on the existence of particulars in the actual world. The notion that corresponds to modal haecceitism in the realm of philosophy of language is 'rigid designation': a name picks a certain individual in every world in which the individual exists.

But the problem this view poses for us is that it requires us to accept identity as a necessary relation, whereas we need an individual to be contingently identical to a bundle of properties in order to explain contingent predication. For a modal haecceity is a property that an individual necessarily has; it has the property of being identical to *a* in every world in which it exists, in order that it can serve as a criterion for transworld identity of an individual. But once we accept the necessary property of being identical to a certain particular, we'll have to accept Kripke's and Marcus's argument to the conclusion that all identity is necessary. So, accepting modal haecceitism will mean accepting at least one property that an individual necessarily has, and therefore we'll have to accept the conclusion of the argument that all identity statements express necessary relations.

Russell cannot hold names to be rigid designators since the necessity of all identity statements seems to be a requisite premise. And Russell cannot make that move, mainly because that a particular is contingently identical to a bundle of properties is one of the immovables on his account. It might be thought that since for Russell ordinary

proper names are disguised descriptions, the only names that would rigidly designate would be logically proper names such as 'this' and 'that'. But the referents of those names are not what we often want to make a modal claim about. It is rather the ordinary particulars. So we should find a way of using names in the ordinary sense and at the same time having some tool like rigid designation to be able to talk about the same individual across all possible worlds.

Hence we cannot suggest a combination of metaphysical anti-haecceitism and modal haecceitism. Instead I propose that we continue to interpret Russell as a metaphysical anti-haecceitist, but combine that with a qualified version of modal haecceitism, according to which it will by stipulation be necessary that *a* is identical to *a* in all possible worlds, but it won't follow from this that '*a* is necessarily identical to *a*', or that *a* has the property of being necessarily identical to *a*. On this construal, the identity of individuals in the actual world will be determined by their properties, but there will not be any need for laying out identity conditions for individuals across possible worlds, since we will merely stipulate that a particular *a* is in a possible world. Hence, contingent predication will not pose a problem on this view, that is, an individual will not have to have all its properties necessarily.

The only identity condition we will require will be whether a certain particular *a* is actually *a* in the actual world. The identity of an individual in the actual world is determined by a compresence of its properties, we saw that in Chapter 3. An individual picked by a certain name can be stipulated to be in any possible world and modal claims may be made about it. As Kripke says, we do not have to have all the possible worlds laid

out in front of us, as if we were looking through a telescope and check which individuals in which worlds are identical (*Naming* 44).

But we need to find some notion similar, but not identical, to 'rigid designation' for Russell's theory, which will not commit us to modal haecceities, but will capture the idea that we will stipulate that a name picks an individual of the actual world in any possible world. We do not want Kripke's notion of rigid designation because that implies necessary identity properties, which in turn implies that all identity statements are necessary and Russell would accept neither that all identity statements are necessary nor that there is a property an individual necessarily has. Russell should deny the necessity of all identity statements to be able to hold the bundle theory of particulars, according to which the identity between a particular and a group of compresent properties is contingent. Hence, the need for a qualification for modal haecceitism.

Thus, let us introduce 'stipulative designation', whereby a proper name picks an individual in the actual world in any other possible world, but just because we stipulated it to do so. On stipulative designation, it will be true that 'It is necessarily true that 'a' refers to *a* in every possible world in which we choose it to', but it won't be necessarily true *of a* that it has the property of being identical to *a* in every possible world in which in which we choose it to.

When ordinary proper names are stipulative designators, the name of an individual *a*, will pick out the same object in any accessible world by stipulation. Suppose *a* is contingently identical to a bundle of properties F, G, and H in the actual world. We can stipulate that *a* is in some possible world and there it is identical to

another complex of properties, F, G, and J. Therefore, *a* will have all or some of its properties contingently.

Actually we may not need to introduce a new term, such as stipulative designation, if Fine is right that rigid designation and de re modality do not have to imply each other, as Kripke seems to hold. Fine notes that the way Kripke has argued for de re modality mistakenly suggests that adopting rigid designation solves the problem of de re modality:

> Kripke seems to argue that 'it is because we can refer (rigidly) to Nixon, and stipulate that we are speaking of what might have happened to him (under certain circumstances), that transworld identifications are unproblematic in such cases; and his constant appeal to rigidity in establishing essentialist claims would appear to suggest that the intelligibility of those claims, at the very least, could be made to rest on the existence of the appropriate rigid designators...[philosophers] have often felt that the use of genuine names removes the old Quinean difficulties over de re modality (Fine 24).

Fine argues that rigid designation does not have to go hand in hand with the acceptance of de re modality. One can have a rigid theory of names and hold that attribution of necessary properties to individuals requires a descriptive intermediary. The question in metaphysics of modality "is whether the mechanism of necessary attribution requires a descriptive intermediary, of whether one can attribute a necessary property to an object independently of how it is described"; and this is different from the question in philosophy of language: "whether the mechanism of reference requires a descriptive intermediary" (Fine 29). But I think modal haecceity, without a qualification, precludes the option of interpreting necessity as merely part of our descriptions of the object. For modal haecceity brings with it the property of being necessarily identical to *a*, and the

necessity of this identity property seems to belong to the particular; it does not seem to arise from the way we describe it.

That's why I think we should not accept rigid designation as it is, but use another theory of proper names in the modal realm, which would allow us to make stipulations, but not commit us to the necessary property of being identical to a certain particular. We can accept only self-identity as a necessary relation, i.e., '□ Λx (x = x)', and therefore it is necessary that *a* is identical to *a*, i.e., '□ a = a'. But we will deny that that there is such a property as being necessarily identical to *a* follows from '□ a = a'. That is, everything will have the necessary property of being identical to itself, but not the necessary property of being identical to a certain particular.

So we can still counterfactually think about particulars even though all the properties of a particular constitute its identity in the metaphysical sense, if we treat ordinary proper names as stipulative designators. To hold this view, we need to deny Russell his theory of names as disguised descriptions. On the Millian view of ordinary proper names, reference does not require any descriptive intermediary. An ordinary proper name, according to Russell, is short for a definite description, which expresses one of its relational properties, for instance, the description 'the teacher of Alexander' expresses the relational property of being a teacher of Alexander. When we say, 'Aristotle could have been a non-philosopher', by 'Aristotle' we would mean 'the teacher of Alexander' or some other definite description, in which case, we would say of this individual that answers to the property of being Alexander's teacher that he might have been a non-philosopher. But the problem is that if we hold that definite descriptions can

be substituted salve veritate for proper names, the definite description will pick out different individuals in possible worlds. But we want to introduce stipulative designation so that we can talk about the same individual counterfactually. Hence, we cannot maintain Russell's view that an ordinary proper name is equivalent to a definite description. Definite descriptions will be non-rigid designators, i.e., they will pick whatever satisfies the predicates in any possible world, not the same individual (Kripke *Naming* 49).

In this chapter, I have tried to show that the argument against the realist bundle theory to the effect that it renders all subject-predicate propositions necessary is not successful. I have also suggested a combination of metaphysical anti-haecceitism and a qualified modal haecceitism, according to which the notion of stipulative designation replaces the notion of rigid designation so that we are not committed to the property of being necessarily identical to *a*. This view would mainly stay close to Russellian principles, sacrificing only the equivalence of an ordinary proper name to a uniquely identifying definite description.

## Chapter 6: The Problem of Analyticity

Substratum theorists charge that the bundle theorist cannot explain subject-predicate discourse. Since a bundle theorist has denied a holder of properties, there is nothing that the attribute is ascribed to. What this objection amounts to is that the bundle theorist needs to explain what is going on when an attribute seems to be ascribed to a particular (Loux *Metaphysics* 103). Take the sentence, 'Caesar had curly hair'. The questions are: what is the attribute said to be related to and what is the relationship between them? On the later Russell's theory the attribute is related to the particular referred to by the name 'Caesar'. The relation between the two is a part-whole relation; the attribute is one of the constituents of the particular. And the relation between the attributes that constitute a particular is compresence relation.

When the bundle theorist answers that attribute ascription consists in pointing out that an attribute is one of the constituents of a whole, the substratum theorist argues that this implies that those propositions, when true, are analytic truths. One could get the result that the bundle theory makes all propositions about particulars analytic if one makes either of these assumptions: (1) Take bundles to be classes. But I explained earlier that they are not on Russell's version of the theory[54]. (2) Adopt a theory of definition (meaning), according to which the meaning of a word is revealed by its analysis.

[54] Hochberg also notes that the objection to the effect that S-P propositions become analytic partly arises from "thinking of a complex of qualities as a class of qualities and of predication as reduced to class membership" ("Things and Qualities" 89). Hochberg claims that the bundle theory does not identify a

I will first show that (2) was true for the early Russell, but it is not true for the later Russell. Next, I will present the later Russell's defense against the charge, which consists of pointing out that we actually define proper names by a definite description, not by analysis. Finally, I'll argue that the later Russell's defense does not work because some sentences about particulars still turn into analytic propositions even though they are not. And being analytic propositions, they become necessary. I'll suggest we adopt a Millian theory of proper names, where names do not have any meaning at all and therefore cannot be defined.

According to a classical account, going back to Kant at least, a proposition is analytic if the property attributed to the subject is contained in the meaning of the subject term. Analyticity applies primarily to a certain type of propositions. Russell, like Leibniz before him, calls them 'the genus-species type', e.g., 'Red is a colour'. The definition of the subject term contains the predicate term. Another type of proposition where a property is attributed to a particular is called of the species-individual type, e.g., 'Socrates is Greek' (*The Philosophy of Leibniz* 15-17). An analytic proposition, according to Leibniz, must be of the genus-species kind. Russell explains that "this is the reason why every proposition about actual individuals is, in Leibniz's opinion, contingent" (*ibid.* 17). However, the early Russell argued that some of Leibniz's premises force Leibniz to the conclusion that even species-individual type propositions are analytic. Similarly, the later Russell's realist bundle theory faces a version of this objection.

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particular with a class of qualities, but it identifies a particular with certain qualities in a 'unique kind of relation' (*ibid.*).

When we come to the Identity of Indiscernibles, we shall find that Leibniz himself, by holding a substance to be defined by its predicates, fell into the error of confounding it with the sum of these predicates. That this was from his standpoint an error is sufficiently evident, since there would be no ground for opposing subjects to predicates, if subjects were nothing but collections of predicates. Moreover, if this were the case, predications concerning actual substances would be just as analytic as those concerning essences or species (Russell *The Philosophy of Leibniz* 50).

The later Russell, in *Human Knowledge*, explains that the premises which led to the conclusion that the species-individual type propositions were analytic on Leibniz's account were (1) the principle of identity of indiscernibles, and (2) the claim that every proposition has a subject and a predicate (*HK* 299). Similarly, on the face of it, it seems that PII alone leads to the analyticity charge for the later Russell's bundle theory, but it needs to be conjoined with other premises to lead to the conclusion that all propositions about particulars are analytic:

The following is an analogous argument against the realist bundle theory: A particular is defined by all its qualities (derived from PII). Therefore, any proposition where a predicative quality is attributed to the subject is analytic.

Russell denies that all propositions are of the subject-predicate form[55]. Russell maintained that propositions in which one term is related to one or more terms, as in 'Socrates is shorter than Plato', should not be treated as subject-predicate propositions. So once relations were no longer part of the particular, many propositions about particulars in which a relational property is attributed to a particular would be synthetic. And the remaining propositions where a quality is attributed to a particular, such as 'Socrates is white', would not be analytic for the early Russell because he had the

[55] But both the early and the later Russell accept that 'White is a colour' is a subject-predicate proposition.

substratum view. The later Russell, however, would treat 'Socrates is white' as a relation between a whole and its part. It seems that denying that relational properties are part of the particular reduces the number of species-individual type propositions that become analytic but does not eliminate them. We are still left with the consequence that propositions in which a quality is attributed to the particular, as in 'Socrates is white', will be analytic, unless we adopt the substratum theory. The reason is that the early Russell required that the meaning of a word be given by a philosophical definition, i.e., analysis. On a realist bundle theory, the analysis of the particular yields all its qualities. Therefore, a sentence where a quality is attributed to a particular, or where a quality is claimed to be a constituent of a particular, becomes analytic if one holds the view that the meaning of a proper name is given by the analysis of the particular the name stands for. In contrast, on a substratum view, a sentence where a quality is attributed to a particular does not become analytic even if one assumes the view that meaning of a name requires analysis, because the analysis of the particular yields a mere bare particular or substratum. So, the assumption required in order to mount the charge of analyticity against the realist bundle theory is not the assumption that all propositions are of the subject-predicate form. As long as one defines, or gives the meaning of, a proper name by listing all its qualities, it may be argued that the proposition 'Socrates is white' is analytic, even though one treats all propositions in a relational form. For when we take 'Socrates is white' to be a relation, one part, i.e., whiteness, is a constituent of the whole, Socrates. If one assumes that the definition or meaning of the whole consists of analyzing

the whole, then the part will be revealed as a mere result of conceptual analysis; hence the proposition will be analytic.

The early Russell, in opposition to the later Russell, subscribed to such a notion of analyticity according to which a proposition is analytic if the predicate concept is contained in the definition of the subject term (*Philosophy of Leibniz* 17). Russell thought that "definition is only possible in respect of complex ideas. It consists, broadly speaking, in the analysis of complex ideas into their simple constituents" (*ibid.* 18). The definition of a subject term, for the early Russell required an adequate analysis of it, which included all the properties that could be truly attributed to the subject, though not its relations (Griffin *Some Remarks* 80). Russell writes, "If A and B are component parts of the concept in question, both are always necessary to definition; if they are relations, neither is necessary" ("The Axioms of Geometry" 410).

The early Russell (1899) distinguished between two kinds of definitions: the philosophical and the mathematical. He thought the meaning of a word would be given only by the philosophical definition, i.e., definition as analysis.

> A mathematical definition consists of any relation to some specified concept which is possessed only by the object or objects defined. In this sense, the projective straight line was defined above by its relations to points and planes. ... Philosophically, a term is defined when we are told its *meaning*, and its m*eaning* cannot consist of relations to other terms. It will be admitted that a term cannot be usefully employed unless it means something. What it means is either complex or simple. That is to say, the meaning is either a compound of other meanings, or is itself one of those ultimate constituents out of which other meanings are built up. In the former case, the term is philosophically defined by enumerating its simple elements. But when it is itself simple, no philosophical definition is possible. The term may still have a peculiar relation to some other term, and may thus have a mathematical definition. But it cannot *mean* this relation ("The Axioms of Geometry" 410).

For instance, if we define "this table" by listing all the qualities this table is constituted by, such as hardness, brownness, and squareness, this would be a philosophical definition of the table. But if we define "this table" as the thing in the middle of my room, this would be a mathematical definition, since I would specify the table as a unique particular by its relation to other things. So when a mathematical definition is given for a term, no such analysis is involved; only a correct uniquely identifying description is given.

Since the philosophical definition of a term includes all the qualities of the thing, one consequence seemed to be that the meaning of the subject term includes the meaning of the predicate term, unless the proper name does not have a meaning, as would be the case if it referred to a bare particular or substratum. Even though he never cared for essences, Russell in his early career seemed to be stuck with them due this analytical notion of definition.

With his new theory of denoting (1905), Russell ceases to demand that a definition of a term involve an analysis of the term. In a letter written in 1953 to R. S. Hartman, who was seeking an explanation for Russell's distinction between philosophical and mathematical definition employed in *POM*, Russell replies,

> I cannot at this date justify the passage on page 63 of *The Principles of Mathematics* about which you inquire. At the time when I wrote that passage I still believed what I had been taught that a definition should be a conceptual analysis and that one definition could be better than another even when both uniquely determine the same object. All this seems to me now a confused legacy of the muddle-headed concept "essence". What I think about definition now is put forth in the Introduction to *Principia*

*Mathematica* [56]... You will realize that *The Principles of Mathematics* was written before I arrived at my theory of descriptions which I published in *Mind* of October 1905. That theory made everything that I had previously said about definition obsolete (May 17, 1953).

So before 1905, when his new theory of descriptions appears, he had to accept a bulky essence with all the qualities of a particular. But with his new system of treating descriptive phrases, he could regard ordinary proper names as definite descriptions, so he could use them to define an ordinary proper name and thereby get a chance to reject the 'I know not what'.

For the later Russell a proposition is analytic iff it is a logical truth (tautology) or can become a logical truth by substitution of mathematical definitions. By a logical truth, Russell means propositions which can be proved by logic, i.e., "they show that certain different classes of symbols are different ways of saying the same thing, or that one class says part of what the other says...It is obvious that a proposition which is a tautology is so in virtue of its form, and that any constants which it may contain can be turned into variables without impairing its tautological quality" (*AMa* 171-2).

We also see Russell invoking the mathematical definition for meanings of words in his later work *Human Knowledge*. For when defending his bundle theory against the analyticity charge, he appeals to definite descriptions we use for ordinary proper names. Consider 'This is red'. By 'this' Russell says he does not mean his *tome*. He means a certain part of his visual field. 'This' we refer to is a whole, a complex, and red and

[56] Russell, in *PM* (1910), writes, "A definition is, strictly speaking, no part of the subject in which it occurs. For a definition is concerned wholly with the symbols, not with what they symbolize. Moreover, it is not true or false, being the expression of volition, not of a proposition" (11).

probably other qualities are parts of this complex. Russell says "'this' is equivalent to a description; e.g., 'what is occupying the center of my visual field'. To say that this description applies to redness is to say something which is clearly not analytic. But since it employs a description instead of a name, it is not quite what we set out to consider" (*HK* 300). And when there is a proper name, we can define it by a definite description. Consider 'Caesar crossed the Rubicon'. We don't define the word "Caesar" by enumerating all the events that comprise Caesar, partly because we don't know all his experiences (*ibid.* 301). We define "Caesar" by some of his prominent characteristics. Russell writes, "Suppose P is some property which has belonged to only one person; then we can say, 'I give the name 'A' to the person who had the property P'. In this case, the name 'A' is an abbreviation for 'the person who has the property P'. It is obvious that if this person also had the property Q, the statement 'A had the property Q' is not analytic unless Q is analytically a consequence of P" (*ibid.*). That is, if we define "Caesar" with only a subclass of his qualities, such as the man who ruled Rome and was killed by Brutus, then the property of having crossed the Rubicon would not be contained in the definition of Caesar. Russell even gives a nominal theory of definite descriptions: "Every person has a number of characteristics that are peculiar to him; Caesar, for example, had the name 'Julius Caesar'" (*HK* 301). So the name 'Caesar' is an abbreviation of 'the person whose name was "Julius Caesar"'.

Hence, the later Russell does not hold statements about particular facts, i.e., propositions where a property is ascribed to the particular, to be analytic (*HK* 497). Synthetic propositions "include not only all statements of particular facts but also all

generalizations which are not logically necessary, such as 'All men are mortal' or 'All copper conducts electricity'" (*HK* 497).

Russell holds the description theory of proper names both as a theory of meaning and as a theory of reference. As a theory of reference, definite descriptions are the means by which a link between a proper name and a particular is established[57]. As a theory of meaning, the semantic contribution a proper name makes to a sentence in which the name occurs is through a canonical definite description. For his defense against the analyticity charge, the later Russell only needs the description theory as a theory of meaning to use it in defining proper names. But this view is not tenable either.

Kripke argues against the description theory both as a theory of reference (he accepts in some cases of initial baptism, however, that a description does fix a referent) and as a theory of meaning for proper names (*Naming* 106). One of Kripke's arguments against the description theory as a theory of names is that it describes modal facts wrongly. Russell's version of the description theory allows one to substitute a single description for a name, and Searle's version allows a disjunction of definite descriptions to be substituted for a name. In either case, Kripke argues, substitutions result in making the properties of the particular necessarily belong to it. "If one has the description 'the man who taught Alexander" as the description of Aristotle, then the statement 'Aristotle taught Alexander' will be tautologous, although it is not actually tautologous for "it is something we could discover to be false" (*Naming* 30). This proposition about Aristotle becomes analytic, and therefore becomes a necessary proposition. And if we substitute

[57] Note that we had to deny the description theory as a theory of reference in Chapter 5 as a result of the kind of stipulation we need for ordinary proper names across possible worlds.

'Aristotle' for a disjunction of definite descriptions, attribution of most of Aristotle's properties to him would result in an analytic proposition, and therefore a necessary truth, as Searle accepts: "It is a necessary fact that Aristotle has the logical sum, inclusive disjunction, of properties commonly attributed to him: any individual not having at least some of these properties couldn't be Aristotle" (172).

Russell would have to accept that in those cases when the definite description is the same as the predicated property, the sentence is analytic, and therefore necessary. Russell admits this when providing a reply to the criticism he himself raises against Carnap's view, where Napoleon is described as a region of space-time, the sentence 'Napoleon was for a period of time in Elba' becomes analytic. Russell gives retort to the criticism: Yes, that statement is analytic but other statements about Napoleon are not, such as 'Napoleon wore a cocked hat' or 'This position of space-time is a person' (*HK* 80).

Philosophers such as W. Kneale (1962), B. Loar (1976), and K. Bach (1981) have suggested a nominal description theory instead of the regular one, so that the name "Aristotle" would be substituted with 'the person called "Aristotle"' or 'the bearer of "Aristotle"'. On this version of the description theory, the only analytic truth one would have to attribute to a particular would be its name, if at all. Russell probably would accept this view because as we have seen in the quote above he regards, "the person who was called 'Julius Caesar'" as a definite description which could give the meaning of "Caesar". However, against nominal descriptions as a theory of meaning, Kripke argues

that 'being called "Caesar"' is nonrigid, since the man we pick out as "Caesar" in this world might have a different name in another world (*Naming* 49).

I suggest we follow Kripke[58] and adopt a Millian theory of proper names. For then we would not have a problem of analyticity either in the traditional sense with definition of a word understood as analysis, or in the logical sense, as the later Russell takes it. A proposition attributing a property to a particular can be analytic in the above logical sense only if one either accepts that proper names are abbreviated descriptions or one accepts that names have senses as well as referents. For only then one could substitute descriptions as definitions of proper names and thereby check if the proposition in question can be reduced to a logical truth. If a name is Millian, that is, if all there is to a name is its referent, then a sentence with a proper name in it cannot be analytic in the logical sense, except when the proper name is itself predicated as in 'Caesar is Caesar'. In this sense, Millian ordinary proper names are actually similar to Russell's logically proper names.

This solution, i.e., that the bundle theorist needs to deny that proper names have meaning, is supported by Hochberg. According to Hochberg, a proper name is simply an indicator like 'this': "One is almost tempted to say it has a referent but no meaning, for the talk of meaning and reference lies at the core of the puzzle" ("Things and Qualities" 93). To the question 'What is Caesar?' we must answer 'this', instead of listing its properties, but at the same time do not endow the 'this' with existence, as substratum theorists do. Defender of the bundle theory needs to "separate the purely indicating

[58] With the provision that our ordinary proper names are stipulative designators, not rigid designators, as discussed in Chapter 5.

function of proper names of complexes from the question of specifying the composition of such objects" (*ibid.* 93-4).

Before we end this chapter, we should also note that there's another related objection to the realist bundle theory to the effect that propositions ascribing a property to a particular would be uninformative on the grounds that one who knows what the term used to refer to a particular means would already know the property attributed to it (Loux *Metaphysics* 103). On the later Russell's theory of understanding one does not need to know all the components of the referent of a term in order to know what the term means. Russell explains that we can know a complex without knowing its parts. Here's how he expresses the point in *HK*:

> I maintain that I can perceive a complete complex of compresent qualities without necessarily perceiving all the constituent qualities. I can give the name 'this' to such a complex, and then by attention observe that redness, say, is one of its constituent qualities. The resulting knowledge I express in the sentence, 'This is red', which, accordingly, is a judgment of analysis, but not, in the logical sense, an analytic judgment[59] (Russell *HK* 302).

That we can know the complex without knowing its parts is not a view that the later Russell has formulated just to defend his bundle theory. For even in 1913, Russell accepted that we can know complexes without knowing their constituents: "Analysis only raises problems because we may be acquainted with a complex without knowing what its constituents are" (*TK* 120).

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[59] "Russell makes the same point in *IMT*: "We do not have to grasp all the constituents of a bundle in order to understand what the name refers to. When we name a bundle as 'W', we do not necessarily know all its parts; therefore the judgment is not analytic. Russell claims that his theory implies that "we cannot express our knowledge without names for complex wholes, and that we can be acquainted with complex wholes without knowing of what constituents they consist" (128-9).

I have argued in this chapter that the later Russell does not have to accept the consequence that all propositions ascribing properties to particulars are analytic. One way in which this consequence would follow is if the later Russell defined ordinary proper names analytically. I showed that the later Russell appeals to denotational definitions of names as their meanings, so that substitution of definite descriptions for names of particulars would not yield analytic propositions. But as Kripke shows, this solution does not work for all propositions where a property is attributed to a particular. As a solution, I suggested that we assign Russell a Millian theory of meaning of proper names, where proper names do not have any meaning, but merely refer to particulars. So, on this theory no proposition about particulars can be analytic, for there is nothing to the meaning of a proper name that could contain the predicate attributed to it.

## Chapter 7: Conclusion

One of Russell's ontological aims was to give a parsimonious account of the ultimate kinds of reality. His earlier account of particulars admitted particulars as well as universals as the fundamental kinds of reality. The need to explain the unity and individuality of objects forced upon the early Russell the acceptance of bare particularity as an ultimate kind of reality, yet he could not reduce properties to particulars with the goal to economize his ontology because there are some relations that resist nominalistic explanation. So when he formulated the bundle theory he reached his goal. There is one kind of ultimate reality, that of qualities, and the individuality of particulars can be explained as well as their generality, without having to admit bare particulars.

The bundle theory takes qualities as ultimate, so they are the bricks of a particular. Only qualities constitute a particular. Qualities are universals, but immanent universals, that is, they are "in" the particulars, not separated from particulars.

Relations, according to Russell, are part of reality as well, but he had trouble finding an adequate place for them. Logically relations have to relate things, so regarding them as part of a particular tends to bring the things that they are related to with them. That is, they become particularized relations, which Russell shows is not tenable. It also leads to circularity in the notion of a particular for then we explain a particular by appeal to another particular, and that other will be explained by appeal to another, and so on. Thus, relations need to be outside of bundles. But this means that we'll have to put them in some third realm, which requires that we bring in our old friend, the exemplification

relation. But given the above tensions revolving around relations, I argued that admitting relations as transcendent relations is the best explanation we can give of them.

I have argued that the early Russell (1903 – 1914) held the substratum view of particulars. I provided textual evidence to the effect that the substrata served several roles. (1) They explained why it is logically possible that there may be two qualitatively alike ordinary or momentary particulars. (2) They provided non-recurring particulars for his construction of space-time series, when his theories of space and time were relational (3) They served as logical subjects in which qualitative predicates could inhere, without making all subject-predicate form sentences analytic. The problem with this view was having to maintain that there is something which cannot be known, but which is merely supposed to exist to fit our purposes. A substratum, as Russell called it, was a peg from which the predicates hang.

The bundle theory of particulars, in his later philosophy (as of 1940), helped him abandon the unknown bare particular. At first sight, it seems as if this theory wipes out all the advantages of the substratum theory we mentioned above. For instance, now that a particular is merely a complex of compresent qualities, the logical possibility that two things that share all their properties, and yet be different particulars, seems to be left unexplained. But I pointed out, by appeal to O'Leary-Hawthorne and Russell himself, the fact that two bundles of qualities may recur is merely a consequence of the bundle theory itself. Since the qualities forming a particular are such that they can occur at many places at different times, it logically follows that a bundle of them should have the same nature of multiple occurrence. If the qualities that make up a momentary particular do recur,

then we have to admit that it is the same particular. This is true for all kinds of particulars, but I have noted that ordinary particulars and point-instants require further explanations as to how they are individuated. When it comes to ordinary particulars, which persist over time, Russell still admits the logical possibility of recurrence, but holds that it is highly unlikely that the same ordinary particular should recur given the postulates (assumptions) he makes about the nature of the world. The point-instants of space-time are defined as complexes of compresence which are complete; i.e. all the qualities in a group are compresent with each other, and there is no quality outside the group that is compresent with every member of the group. Such a complete complex of compresence results in a very high probability of non-recurrence, needed for the construction a linear space-time series.

The logical subjects on the bundle theory are the bundles themselves as a whole. But this does not imply that all subject-predicate form sentences will become analytic because the later Russell does not employ the notion of definition or meaning as analysis in the later period. That is, the meaning of the name of a particular does not require the analysis of the particular. Therefore, the predicate term will not be one of the analysans and thereby make the sentence analytic. However, I have explained that the later Russell's own notion of meaning of proper names is not completely free of the analyticity charge either. According to his description theory of names, when we replace the name of a particular with a canonical definite description, if the predicate attributed to the particular happens to be in the description the sentence becomes analytic. Worse, it therefore becomes necessary. In order to avoid this consequence, I suggested that we

reject Russell's description theory of names, but adopt a Millian view instead, so that there would not be any meaning belonging to the name of a particular, and thereby a sentence about a particular would be free of the charge of analyticity. I claim that the description theory of names can be sacrificed to defend the bundle theory against the analyticity charge. For it is not only that some proposition about particulars will become analytic, but also that those propositions will be necessary.

Another problem that the bundle theory seemed to face was that because it claims that it is necessarily true that a particular is composed of compresent qualities, the properties of a particular must be essential to it. But I argued that this is not the case by first making the underlying assumptions that led to this objection evident and showing that these assumptions are not, or do not need to be, made on Russell's account of the bundle theory. Two of these assumptions were either of (1) the particular is a set of properties and (2) the particular is a mereological sum, where all its parts are essential to the whole. I explained that these assumptions about Russell's theory are false and that a bundle is a complex. As such a bundle is more than a totality of some qualities.

However, I pointed out another way in which true propositions about a particular may be argued to express necessary truths, namely, when the identity relation between a particular and the bundle it is composed of is considered to be necessary. Such identity statements are not necessary according to Russell. But I pointed out that if there are good arguments for the conclusion that such identity is necessary, then the bundle theory has a problem. With the goal of evading this possibility, I suggested that we adopt a notion of 'stipulative designation', whereby the identity of a particular across possible worlds

would only be a matter of stipulation, so that no claims to the necessity of the identity relations can be made. For I noticed that the arguments for the necessity of all identity relations rely on taking these two propositions to be equivalent: (i) It is necessary that for all x, x is identical with itself' and (ii) 'For all x, x is necessarily identical with itself'. (ii) entails (iii) *a* is necessarily identical with *a*. And (iii) in turn leads to the conclusion that all identity is necessary. So the motivation behind stipulative designation is to block the inference to (iii). When we hold names to stipulatively designate, we merely accept (i) and what follows from it, i.e., (iv) It is necessary that *a* is identical with *a*. But we reject (ii) as equivalent to (i) and therefore reject (iii).

I have also explained some of Russell's epistemological views, because they play important roles in the bundle theory of particulars. I have argued, for instance, that the postulates of scientific inferences play a role in the individuation of ordinary particulars. I have also argued that particulars must be inferred, not constructed, because a particular is a complex and a complex is of the same logical type as its constituents, whereas if it were a construction it would have to be of a different logical type.

The most troubling question for Russell in epistemology was what, if anything, can one know with certainty about the world external to her mind? In *The Problems of Philosophy*, he has a view which is similar to his later views in *Human Knowledge* in the sense that in both works he maintains that we can know that there are material objects by inference. In his early work the argument is an inference to the best explanation of our experiences. In both works he admits that such knowledge comes in degrees of probability, except that in his later work he discusses theories of probability in detail and

makes it central to his account of our knowledge of the external world. However, around 1914 (*OKEW*) he attempted to get at certain knowledge by means of logical construction of the objects of the external world. But later on he realized its limitations and went back to working out the kind of non-demonstrative inferences we need. Russell specified five assumptions that we need to make about the world that would ground our inferences that we do make in common sense and science. But these assumptions themselves are only probably true; Russell does not put them forth as necessary truths about the world. Some of them directly ground our inductive inferences. After discovering that in order to make an inductive inference which will give us probable truth, it is not enough that we collect and categorize data into classes and see if there are any correlations between two classes. We also need to have some reason, before we make the inductive inference, to believe that the claim that we want to reach as the conclusion of an inductive inference has a good chance of being true. One such postulate allows us to assume that there probably is a similarity between the structures of what we can observe and what we cannot, and this gives us grounds to justify our inferences from experiential data to what actually exists in the external world.

Thus, the later Russell's bundle theory of particulars, combined with his emphasis on the role of non-demonstrative inference in acquiring knowledge about particulars, is a strong and consistent theory which should be given its due place in the contemporary literature on theories of particulars. I hope that my endeavour in this work to give a systematic account of his ontological and epistemological views has served this purpose. Furthermore, my work on the later Russell's views in these areas is not independent of

his more popular, earlier views. So I believe this work should also be of historical interest to the philosophers who know the ontological and epistemological problems Russell grappled with, and how he solved these problems with the bundle theory.

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