

**HANNAH ARENDT'S CRITIQUE OF MODERNITY:
THE REVERSAL OF ACTION AND CONTEMPLATION**

**By
CRAIG PERFECT, B.A.**

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AUTHOR: Craig Perfect, B. A. (McGill University)

SUPERVISOR: Dr. Zdravko Planinc

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ABSTRACT

This study is comprised of an exegesis and critical assessment of Hannah Arendt's account of modernity in the final chapter of *The Human Condition*. In this crucial chapter, Arendt contends that behind the manifest changes of the modern revolution is a reversal of the traditional relationship between the *vita activa* and the *vita contemplativa*. Particular attention is paid to Arendt's critique of modern science, Cartesian philosophy, and her claim that three axiomatic events stand at the threshold of the modern period and determine its character.

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Introduction

What is modernity? What are the fundamental human capacities, and what is their proper arrangement? In her magnum opus, *The Human Condition*, Hannah Arendt conducts her unique analysis of modernity at the intersection of these lines of inquiry. The effectiveness of her analysis lies in its ability to pinpoint the character of modernity by its radical reinterpretation and revaluation of the traditional understanding of unchanging human capacities. It is precisely this revaluation that underlies the manifest changes of the modern revolution. The revaluation has been so complete that the traditional understanding of human capacities has been rendered opaque to the modern understanding. Work and labour are modes of the *vita activa* which had been eschewed since Plato, but each attained unprecedented dignity with the arrival of the modern period. Arendt characterizes modernity as a period in which work and then labour ascended to the pinnacle of human capacities, so that contemplation was no longer considered the highest human activity, and it virtually disappeared, leaving “thinking”—understood in a narrow sense—in its place, as an assistant to the *vita activa*. The revaluation was consummated in a reversal of the traditional hierarchy of action and contemplation.

In her attempt to understand the modern period, Arendt joins an established line of inquiry, as old as the period itself. Attempts to characterize the period have been diverse: for some thinkers, modernity is the age of scientific enlightenment, the triumph of reason; for others, it is a dark period during which God is absent from the hearts and minds of human beings. Hegel anticipated an end of history in a secular, rational, homogenous state, while Weber feared an “iron cage” of instrumental reason.

Still others locate the essence of modernity in Machiavellian politics, in the rule of technology, in the logic of capitalism, or in the rise of the nation-state. Hannah Arendt is aware of these possible descriptions of modernity, and the problems inherent in each.

Arendt avoids some of these problems by grounding her inquiry in demonstrable human capacities and tangible, historical events. Her final chapter begins with a description of three great historical events “standing at the threshold of the modern age” (225).¹

Throughout *The Human Condition* her comparison of the modern period to previous epochs is done primarily through a comparative study of that which should be most familiar to human beings: the fundamental human capacities. In these ways Arendt avoids creating a distance between her work and the diverse phenomena she attempts to explain.

The elements of the modern period are most easily identified and studied at the outset of the modern era. To this end, Arendt discusses the three characteristic events of modernity in the opening lines of the final chapter of *The Human Condition*:

Three great events stand at the threshold of the modern age and determine its character: the discovery of America and the ensuing exploration of the whole earth; the Reformation, which by expropriating ecclesiastical and monastic possessions started the twofold process of individual expropriation and the accumulation of social wealth; the invention of the telescope and the development of a new science that considers the nature of the earth from the viewpoint of the universe (227).

These three great events, and their legacy in worldly history and the history of ideas, form Arendt’s point of departure. The three great events contain early forms of distinctly modern assumptions, experiences, and developments, and in this way they encompass and foreshadow the character of the era which followed them. The historical legacy of these events is not so straightforward that simple cause-and-effect language can

be used; Pieter Tijmes notes that it is not Arendt's aim "to offer a classic treatise of causes and effects in connection with our situation. It is rather our situation that sheds light on the past. These three characteristic events have been crystallized into modernity."² What they have been crystallized into is an age that was unanticipated and unpredictably novel. The greatness of the three events lies in the way they contained and foreshadowed features of the modern age, and so determined its character. The emphasis she puts on the three great events—on the telescope in particular—advances her historical account of the new worldview, but as we shall see it relies on contestable or unexplained distinctions, and causes inaccuracies elsewhere in her study.³

Arendt begins *The Human Condition* with a now famous tripartite distinction between the fundamental human activities of labour, work, and action; these are the modes of the active life. The ostensible goal of her analysis of the three modes of the *vita activa* is quite simply to "think what we are doing"⁽⁶⁾. The method of her phenomenological anthropology is necessarily more complex, and achieves far more than the stated goal. The goal of the present study, by contrast, will not be an account of the tripartite distinction of the *vita activa*, but rather it will follow Arendt's account of the distortions and dangers of the modern period which evince an improper arrangement of the modes of the *vita activa*. It is important to keep in mind that for Arendt, the distortions, the arrangement, and the character of modernity itself can be said to be a consequence of historical events, and not of a change in ideas.

The opposition of worldly history to the history of ideas—events versus ideas—plays an important role in Arendt's critique of modernity. The opposition informs the way she understands the movement of history, and consequently it shapes her method, her

characterization of the modern period, her final chapter's point of departure, and her conclusions. The opposition of events to ideas is so integral to Arendt's critique that she has two intertwined but distinct methods or types of analysis to treat them. For great worldly events such as the three which ushered in the modern period, she begins with a straightforward historical and empirical description. These are undeniably worldly historical events, and are treated as such. Although events occur or are enacted in the world, they have consequences in worldly history and in the history of ideas. Each event can be described from the outside, in terms of tangible events, or from the inside, in terms of ideas. Although she begins with the first type of description, Arendt contributes her greatest insights from the inside, in her conceptual description of events and their consequences. Her analysis in the latter case moves between approaches which are alternatively theoretical, philosophical, psychological, anthropological, and interpretive.

Just as a great worldly event has consequences in the world and in the realm of ideas, both types of analysis are present and overlapping in Arendt's critique.

While the two types of analysis can be separated, and to a certain extent *are* separated in *this* study, they are present and overlapping throughout Hannah Arendt's life work.

Throughout her career, she was concerned with the interplay of the *vita activa* and the *vita contemplativa* through history. In works focusing on the *vita activa*, of which *The Human Condition* is representative, the empirical and historical description is the more important type of analysis. In works focusing on the *vita contemplativa*, of which *The Life of The Mind* is foremost, the philosophical and conceptual description is primary. Of course, both types of description are present and intertwined in both these works. At this point, it becomes apparent that the following pairs of terms generally correspond in

Arendt's work: events and ideas, historical and philosophical description, and the *vita activa* and *the vita contemplativa*. However, this generalization can be misleading; for Arendt every event has a twin legacy and can be described in terms of ideas and in terms of events.

Hannah Arendt's opposition of ideas and events is unusual because she denies that ideas possess causal efficiency; for her, ideas simply do not and cannot take initiative in the world, because ideas are never unprecedented. However, she is no more a historical materialist than idealist. It is her view that only humans can cause events; only humans have the power to begin because only they can act.⁴ Accordingly, Arendt locates the outset of modernity not in new ideas but in three great events that arose out of the unpredictability of human action. In "The *Vita Activa* and the Modern Age" she studies the worldly history and especially the history of ideas which followed from the events. She reminds the reader of the distinction that should be made between ideas and events at key places in her analysis, but never goes into depth.⁵ By avoiding a comprehensive treatment of opposition of ideas and events, Arendt avoids the empty dichotomies and blind allies pursued by historical idealists and materialists, Hegelians and Marxists, and so on. She uses events and ideas as descriptive terms, not as analytic categories, so that the absence of a comprehensive treatment is not conspicuous. Arendt attempts to go beyond the empty dichotomies; her attempt is vindicated in at least two ways. The first is her use of action, which offers a new possibility for the movement of history beyond ideas, material factors, and forces. Unpredictable human action leads to events, but action does not exclude ideas, for they can be embodied in action. Arendt's use of the traditional terms of the *vita activa* and the *vita contemplativa* presents a second attempt to go beyond polar opposites. The

traditional two lives are not mutually exclusive, in fact they overlap and allow Arendt to describe history in a more broad and integrated way than many of her predecessors.

The cornerstone of Arendt's analysis of modernity is her famous tripartite division of the modes of the *vita activa*. According to this division, labour is the mode closest to nature; it fulfills biological needs, is bound to necessity, and corresponds to the human condition of life. Work corresponds to the human condition of worldliness; work provides an "artificial" world of things shaped by individual humans but which outlasts them and provides continuity and stability through the generations. Action is the third mode of the *vita activa*; it is "the only activity that goes on directly between men without the intermediary of things or matter..."⁽⁹⁾ Action corresponds to the human condition of plurality; it is what man does in concert with other men. Action discloses and makes distinct an actor who is similar but not the same as any other actor, and in conjunction with freedom, action is the first condition of political life. Through political action, human beings can perform prodigious deeds, be they truly great or truly terrible. Barry Cooper, who has written extensively about Arendt's account of modernity, warns that "the great strength of the process of action is that it is both irreversible and unpredictable. And that is also its great burden..."⁶ Arendt contends that Plato, Aristotle, and the tradition which follows from them undermined political action and deprived it of this greatness.

Labour is similar to work in its subordination to the *vita contemplativa*. From the Greeks to the late Medieval period this hierarchy remained unshaken; the *vita activa* was judged by the standards of—and according to the extent to which it made possible—the *vita contemplativa*. With the modern period came the revaluation and elevation of work and labour, which entailed a reversal of the traditional hierarchy and the elimination of

contemplation from the range of possible human activities. Arendt wants to free the *vita activa* of contemplation's alien standards, but laments the loss of contemplation and the ascent of work and labour.

Before treating the modern reversal, Arendt attempts to clarify—using the tripartite distinction—the modes of active life, which she contends have been misconstrued since Plato, and to demonstrate the need for a public space in which action, especially political action, can take place. Arendt contends that “the enormous weight of contemplation in the traditional hierarchy has blurred the distinctions and articulations within the *vita activa* itself and... this condition has not been changed essentially by the modern break with tradition and the eventual reversal of its hierarchical order in Marx and Nietzsche.” (17) The reversal of the modern period raised work and then labour to the position of the highest human capacity, each time creating new distortions and misunderstandings. The modern reversal has failed to bestow similar dignity upon the third and greatest mode of the *vita activa*—action, including politics and speech—and the proper arrangement of human capacities has never been realized. Arendt's position on the relative dignity of the modes of the *vita activa* is clear: action is the greatest mode, and labour the lowest. Her position on the relationship of the *vita activa* to the *vita contemplativa* is never clearly demonstrated, so that one cannot help but question the source of a normative arrangement or relationship which allows her to judge both the traditional and modern arrangements.⁷

Traditionally, contemplation was characterized as a perfect mental stillness in which truth appeared and disclosed itself to the mental eye of the beholder. In contemplation, the soul fulfilled its highest capacity, receiving truth untainted by the

distortions and limitations of matter. With Cartesian doubt the common creed dissolved and contemplation disappeared from the range of ordinary human experiences. Today, contemplation is dismissed as “thought in a vacuum,” the kind of thought most ridiculed by those who require “hard proof.” According to Arendt, it is a modern conviction that “nothing indeed could be less trustworthy for acquiring knowledge and approaching truth than passive observation or mere contemplation” (263). To acquire knowledge in the modern period, nature must be apprehended in a new way. Rather than the passive observation and contemplation of nature, which allows truth to appear of its own accord, truth must be actively sought. Nature must be acted upon and forced to give up her secrets, by interfering with, amplifying, measuring, and reproducing her processes. Proof must be demonstrable, rigorous, value-free, and objective; this “theory” of knowledge is applied to *all* modern endeavours, from its origin in science to the purchase of the best detergent. The hidden assumption is that nature can only be known through action.

In the traditional understanding of human capacities, the *vita contemplativa* was unfettered by necessity, and this was one source of its superiority over the *vita activa*. Although there were thought to be parallels between contemplation and making, making could only imperfectly imitate the true forms which were beheld in their perfect state in contemplation. Cooper describes how “[t]he former primacy of contemplation over activity rested on the conviction that no work of human beings could equal in beauty and truth the cosmos whose eternal rhythms were disclosed to mortals only when all movements, including mental ones, had come to rest.”⁸

Arendt’s understanding of the meaning and development of contemplation begins with the Greek conception of philosophy and politics. Before the Socratic school of

philosophy, political action was perhaps the highest of the modes of action. With the deep-seated mistrust of politics in Plato and Aristotle, this hierarchy of action was undermined. According to Arendt, their mistrust gave them extra impetus to attribute more dignity to work than to political action. In his *Metaphysics*, Aristotle ranks contemplation (*theoria*) as the highest type of human cognition, followed by the science of fabrication (*episteme poiétique*), while practical insight and political science (*dianoia* and *episteme praktike*) are the lowest. But more important than their mistrust was the affinity of contemplation and fabrication. This affinity, very familiar to Greek philosophy, was the result of the element of contemplation—the beholding of the eternal—present in fabrication. A craftsman making his product imitates an “idea,” a model not made by him but beheld by him, enabling him to know what to make at the outset, and to judge the completed product.

Arendt finds two strands in the historical meaning of contemplation. One is the famous *thaumazein*, the awe and amazement at the wonder of Being, which is the beginning of philosophy for both Plato and Aristotle. The content of this experience could not be put into words, and likewise, “the essentially speechless state of contemplation was the end of philosophy. *Theoria*, in fact, is only another word for *thaumazein*; the contemplation of truth at which the philosopher ultimately arrives is the philosophically purified speechless wonder with which he began” (276).

The second strand of contemplation is most perfectly set out in Plato’s descriptions of the realm of ideas. This is the type of contemplation familiar to the craftsman. From the philosopher’s point of view, the craftsman’s imitation of the idea is not an actualization but rather a degeneration of the perfect and eternal model. Only when one renounces imitation and lets the ideas appear in the mind’s eye can one fully

participate in their perfection and eternity. It is Arendt's contention that this second strand of contemplation is part of the fabrication process, even though one has renounced all making. The model or idea no longer guides the process, but rather it is "prolonged and enjoyed for its own sake" (276).

According to Arendt, the second strand of contemplation became the most common one, primarily because it was accessible to a greater number. But this more common glance at the eternal was not done from the true standpoint of contemplation, but rather from the standpoint of "*homo faber* in disguise; it was man the maker and fabricator, whose job it is to build a permanent home for himself..." (277). As we shall see, the loss of contemplation occurred when the goal of fabrication changed from the product to the process of production, and the reproduction of the eternal model changed to the reproduction of a natural process. The implication of these changes was that contemplation was no longer considered to provide access to truth, and it fell from the range of human experiences.

With the demise of contemplation in the modern period, philosophy has lost its beginning and its end. The intellectual dispositions characteristic of modernity—doubt, denial of self-evidence, chagrin at having been fooled—effectively blocked philosophical awe or *thaumazein* at its source, ending the great philosophical questions. The doubt has endured, and has determined the projects of modern philosophy, namely, introspection, epistemology, and studies of cognition and consciousness. Descartes' most convincing and fertile distinction is between the "sphere of the doubtful"⁹ and the one truth that escapes all doubt, the existence of one's own thoughts. This was meant to be the cornerstone for a philosophy based on certainty, but only the *cogito* has achieved greatness in modern

philosophy, and accordingly, “philosophy suffered more from modernity than any other field of human endeavour” (268).

According to Arendt’s analysis, modernity is not a complete break with tradition, but a dramatic reorientation of traditional categories.¹⁰ The active and contemplative lives are possible for all human beings in every historical era; however, in modernity their respective dignity, claims to knowledge, and presence have changed dramatically. *The Human Condition* documents the complex and problematic ascendancy of work and labour and some of the distortions, damages, sacrifices and misunderstandings that result from the primacy of these modes of the *vita activa*. Arendt contends that the results of this problematic ascendancy include world alienation, the atrophy of human capabilities and knowledge, the loss of tradition,¹¹ of substantive freedom,¹² and even the human loss of reality itself (238).

Given its focus on the ascent of work and labour, the German edition of *The Human Condition* was more appropriately entitled *Vita Activa*. In this book, Arendt does not concern herself with world-transcendent realities. Her doctoral thesis, on Augustine’s concept of love, demonstrates that she is not ignorant of such realities, but in *The Human Condition* she is interested in human worldliness. For this reason, the absence of any serious account of the *vita contemplativa* is not immediately problematic. This is a book about the modern period, which is the age of the *vita activa*; contemplation is, by her own definition of the age, no longer within the range of meaningful human activities. It becomes clear, then, that Arendt’s work relies heavily on distinct ages or historical epochs, and the substantiation of these historical distinctions is one of her endeavours. The

problems inherent in this reliance will reveal themselves in the course of the present study, and will receive explicit examination in the final chapter.

Hannah Arendt is unique among the other important thinkers with whom she is often grouped, who include Strauss, Voegelin, Jonas, Benjamin, and Heidegger. This grouping is the result of certain philosophical similarities among the thinkers; however, the aim of this study is not to compare Arendt to her peers, nor is it intended to prove the widely accepted uniqueness of Arendt's contribution to modernity-criticism.¹³ The aim of this study is, rather, to give an exegetical and critical analysis of a crucial chapter, "*The Vita Activa and the Modern Age*." This chapter, which relies on the distinctions and conclusions of the earlier chapters, is not only the watershed of *The Human Condition*, but it contains in compact form the patterns, concepts, concerns and themes characteristic of the totality of Arendt's work. More specifically, "*The Vita Activa and the Modern Age*" is a point where Arendt's crucial pairs of terms all converge: ideas versus events, philosophical versus historical description, and the *vita activa* versus the *vita contemplativa*. A carefully detailed account of this chapter is the most satisfactory way to approach these converging concepts, and thereby Arendt's lifelong concerns, in a brief manner.

The structure and validity of Arendt's understanding will be examined using an implicit and simple series of questions: "What is she saying?", "How well does this account for the character of modernity?", and finally, "How consistent is this?" The four chapters of exegesis stay within the confines of the first question, demonstrating the content and strength of Arendt's argument. In the final chapter will approach her argument from a critical standpoint. Each chapter of the present study focuses on an

element of modernity which is integral to the ascent of the *vita activa* and the concomitant decline and disappearance of the *vita contemplativa*. The first chapter focuses on world alienation, which is an integral part of the modern worldview, and can be traced back to each of the three great events. The second chapter examines modern science, which has its origins in Galileo's use of the telescope, and is the single greatest determinant of the character of the modern age. The third chapter investigates Descartes' doubt of the senses, an immediate consequence of Galileo's great discovery. As we shall see, doubt was both the most plausible response to Galileo's discovery, and an unavoidable implication of the new worldview. The fourth chapter describes the conceptual changes behind these manifest events of the modern age; changes which are described by Arendt as a reversal in the traditional hierarchy of action and contemplation. In the final chapter inaccuracies, errata, absences and other small matters which have consequences for Arendt's broader project will be examined.

Chapter One: Alienation

i) Modern World Alienation

The three great events which occurred at the dawn of the modern period foreshadowed its general character, and each event had consequences for the particular feature of the period identified by Arendt as “world alienation.” The discovery of America and the exploration of the earth were the first steps towards the representation of the earth as a globe, which could be held in one’s hands and looked upon as if one resided at a distance. Following the Reformation, the accumulation of wealth in the hands of capitalists created the conditions for a new economy in which all worldly goods were consumed and recreated. And modern science, which followed from Galileo’s discovery, was the single greatest factor in the development of both world alienation and the modern period in general. Arendt’s account of these first two events—the exploration of the earth and the Reformation, and their legacy—will be this chapter’s object of study.

Hannah Arendt finds the modern individual to be alienated from the world and from the earth. This claim of world-alienation is an unusual one; most thinkers generally consider the attributes of modernity to be secularism, materialism, hedonism, and phenomenalism, which seem to point unanimously to the worldliness of modernity. In the differentiated vocabulary of Arendt, the world is not the physical world, but rather it is the human world. The world is a realm of civilization that makes humans at home with their surroundings, protects them from nature¹⁴ and raises them above it. Nature is the earth as it would be without the human creation of the world;¹⁵ it includes the cyclical processes of the seasons, sunrise and sunset, and the biological processes of birth, growth, death and decay. By contrast, the world is the sphere of human construction—she also calls it the

“world of things” and the “human artifice,” and it has much in common with the term “civilization”—which includes not only buildings, roads, manufactured goods, and land reworked by human hands, but also the institutional dimension of human existence. Part of the impetus for the creation of the world is that human nature requires the satisfaction of needs beyond those of an animal, and the world allows the satisfaction of some of these higher needs. Pieter Tijmes summarizes Arendt’s view:

“Man is naturally artificial. According to Hannah Arendt, not the natural, but the artificial is specifically human. Civilization gives man the opportunity to transcend the animal species and consists precisely in building a world: a world of ploughed fields, roads and hedges instead of a wild landscape, a world of buildings instead of the open air, a world of language and culture, of communities and traditions, a world of art, law, religion and all the rest of the man-made things that outlive the men who made them and form the inheritance of the human race.”¹⁶

The world, although created by individuals, is more permanent and larger than each of them, so it presents a stability and continuity to the passing generations. Every human life begins in this prearranged web, lives in it, adds to it, and passes it on. Individual experiences, senses, and identity are given objective reality, since they are shared and experienced by all and are related to common standards. For this reason, the human world is often called the “touchstone of reality.”¹⁷ The world and worldliness are integral to the human condition; deprived of this stable world and point of reference, human life loses its orientation and direction, human identities are not formed or maintained, and human action loses its greatness because it is not made immortal in stories. The common sphere shrinks or disappears, and humans are thrown back upon themselves. They cannot trust their senses, their reality, or even their reason. Without a common world, humans have only nature in common. Without the stable human world,

the meaning of human life is of the same order as the meaning of the cycles of nature, and this has occurred in the modern period.¹⁸ Tijmes assert that it “is Hannah Arendt’s view that the common world—the world as artificial and durable—has been overpowered by the cyclical life process to which man is bound by necessity and which threatens to absorb all manifestations of humanity.”¹⁹

In premodern times, the world had been a nearly permanent shelter for human beings, allowing them to fulfill their higher nature, and protecting them from the exigencies of nature. Nature herself protected human beings from the exigencies of the cosmos. Humankind was at home on the earth because it lived with the nature that had made it, and the world that it had made. Because nature and the world were taken to be permanent homes, humans had a sense of place, a sense of belonging that is impossible to achieve without assuming nature and the world to be unchanging absolutes. Arendt does not attempt to substantiate what she claims was the conceptual permanency of nature for pre-moderns, an absence which is especially problematic in characterizing the Christian tradition.²⁰

Arendt finds the deprivation of the stable world to be the root of modern alienation. The Reformation and the ensuing expropriation-based capitalist economy are the two events to which Arendt attributes *world* alienation. By contrast, modern *earth* alienation is attributed to the events surrounding the telescope, and the exploration of the earth. World alienation best describes the changes of the sixteenth to nineteenth centuries, in particular the rise of the social and the new economy, while earth alienation corresponds to the beginning of the twentieth century, and the victory of *animal laborans*. Apart from these contrasts, the two types of alienation have much in common, and generally speaking,

earth alienation “represents an intensification of the trends identified with world alienation.”²¹ Arendt sometimes uses the term “world alienation” to refer to both types of alienation.

Modern world alienation is integral to Arendt’s account of modernity; in fact, Arendt calls it “the hallmark of the modern age” (231). Modern world alienation, which is a conceptual distancing and estrangement of the human mind from its immediate environment, is a consequence of tangible events in history.²² Worldly events lead to effects in the realm of ideas; according to Arendt this is a case in point of both the way history works, and of the relationship between events and ideas.²³

An unforeseeable affect of the Christian Reformation was the creation of the conditions suitable for the development of modern capitalism. With the expropriation of ecclesiastic possessions and the “liberation” of the peasantry, there came into being the two conditions necessary to transform this wealth into the working system of the capitalist economy: capital and labour. From the outset—long before the industrial revolution—this system showed a vast increase in human productivity. The increase in productivity resulted not from the application of new technologies—as in the case of the industrial revolution—but rather from the tremendous “force inherent in ‘labour power,’ that is, in the sheer natural abundance of the biological process, which like all natural forces—of procreation no less than of laboring—provides for a generous surplus over and beyond the reproduction of young to balance the old” (231). The peasantry, who were “liberated” from everything that did not concern their hand to mouth existence, had expropriated from them the only thing they could offer: their labour, the excess which resulted from the life process itself.

The Reformation resulted in a transfer of wealth which became the capital at the basis of a new economy. Concomitant with the breakdown of Western orthodoxy was the breakdown of the feudal system. Together, they created the conditions for modern capitalism, which is categorically different from the commerce of the premodern world because its expropriation and wealth accumulation did not result in new wealth or even a new distribution of that wealth. Instead, the modern capitalist feeds new wealth back into the system of wealth creation, that is, back towards expropriation, expansion, and improvements in productivity.

What seemed at the outset to be a novel way to generate wealth, after centuries of development has taken on a radical character and massive proportions. In the modern waste economy in which Arendt convincingly argues we live, all worldly things are relentlessly depreciated, destroyed, discarded, and replaced. Under these conditions, it is not the destruction but conservation of worldly goods which threatens prosperity. The “economic miracle” of postwar Germany is proof of this feature of modern economic processes: the destruction of worldly objects and the annihilation of cities turns out to have the effect of stimulating the creation and accumulation of wealth. Wealth in the waste economy derives its wealth not simply from natural resources and food production—the stuff of life—but from the process of production and consumption itself.

Expropriation is the key to Arendt’s account of the development of the new capitalist waste economy. She describes expropriation in the context of early mass labour as “the deprivation for certain groups of their place in the world and their naked exposure to the exigencies of life...” Those groups became the “new laboring class, which literally lived from hand to mouth” and which stood “directly under the compelling urgency of

life's necessity" (231), thereby was alienated from everything that did not grow out of this urgent necessity.

Capitalism's success is based in part on the calculated reinvestment of profit,²⁴ reinvested in further expropriations and greater productivity, which render great profits. Greater profits are reinvested yet again, completing the positive feedback mechanism. This process, left to follow its own internal logic, never stops upping the ante, because there is no final goal, only the shortsighted one of continuing the process. The process is oblivious of real human needs (although it can create new needs to create new markets) and the balance of nature. The process started with the labour of the peasantry, but did not remain restricted to them. Nor did the process stop once real human needs had been met. Unlike the great civilizations of history, the accumulation of wealth in the modern period has not lead to economic stagnation; quite the opposite is true. The process has infiltrated every aspect of life, still firmly rooted to the principle of world alienation from which it germinated. According to Arendt, "the process can continue only provided that no worldly durability and stability is permitted to interfere, only as long as all worldly things, all end products of the production process, are fed back into it at an ever-increasing speed" (232). For this process to continue unabated requires no small sacrifice on the part of human beings: they must give up their worldliness, their natural relationship to the world itself.

Much of Arendt's analysis is derived from Marx, particularly the assertion that the changes in the economy—which were disastrous for the labourer—lay in the transformation from stable property to fluid capital. This loss of stability and permanency amounted to a loss of the world. Rather than building a world, which involves creating goods which are durable or beautiful, the modern "economic process [is] directly

analogous to a process of nature.”²⁵ Labour is the activity closest to nature; by making it the center of their lives, modern humans have lost the human world and have reverted to nature. In direct opposition to so many modern idealists, Arendt argues that the processes of modern economics are analogous to mere nature, and sadly, moderns have lost their specifically human—which is to say, artificial²⁶—world. With it, they have lost their worldliness and their mastery over nature.

In the early stages of modernity the peasants were uprooted from their land and made into wage-labourers. Later, they were compelled to give up their class and family identity for that of the nation and its people. Since “blood and soil...[are] the requisites for the nation-state”(233) they became the assumed identity of its populace. Finally, national interests gave way to the abstract concepts of mankind and the earth. Underlying each phase of this development is an increasing element of world-alienation; it is obvious that “men cannot become citizens of the world as they are citizens of their countries, and social men cannot own collectively as family and household men own their private property”

(233).

ii) Modern Earth Alienation

Up until the fifteenth century, popular knowledge of the extent of the earth had been frustratingly and temptingly finite. The impression this left on the premodern mind could only heighten the excitement with which the first news of the exploration of distant lands was received. Ignorance of the extent of the earth was soon replaced by knowledge of the kind Archimedes so intensely desired. Once the exploration and mapping of the earth had begun, it was only a matter of time before its magnificent lines could be reproduced on a globe and so become familiarized and admired by everyone.

In what initially seems paradoxical, Arendt claims that it was “[p]recisely when the immensity of available space on earth was discovered, the famous shrinkage of the globe began...” (227) Of course, the mapping of the continents took centuries, and continues to this day. What is more, the great explorers and seafarers who first set out across unknown stretches of land and water did so to *enlarge* the earth, not to *shrink* it. The ensuing closing-in of the earth would have been incomprehensible to them, for “[o]nly the wisdom of hindsight sees the obvious, that nothing can remain immense if it can be measured” (227). It is in the nature of human surveying capacity that two distant points are made to seem closer, if one can remove oneself far enough to see them at the same time.

Once circumnavigated, the earth had ceased to be unfathomable. Its continued shrinkage was assured by increases in the speed of transportation and communication. With the improvement of these technologies, distance gradually lost its significance, until it became possible to say that “[s]peed has conquered space; and though this conquering process finds its limit at the unconquerable boundary of the simultaneous presence of one

body at two different places, it has made distance meaningless...” (227) Today it takes less than a day to reach any place on earth. But before the conquering of space and the shrinkage of the earth with ships, trains, and airplanes, there was an earlier and more effective type of shrinkage, a shrinkage brought about by the use of symbols. It is well known that man is a symbol-bearing animal, and in this case he used powerful symbols, models, and numbers to condense the massive terrestrial sphere into something he could easily handle and understand. Before he could buy a ticket to sail around the world, he could buy a globe and hold the world in his hands.

Another feature of the human surveying capacity, which has exacerbated modern earth alienation, is the distance it requires. ‘Distance’ has a double meaning. Man can survey and measure the earth better as he moves away from it, but in so doing he moves away from worldly space. He can see the earth clearly and objectively only when he disengages himself from his cares for worldly affairs. To see everything, he must be close to—in proximity to—nothing. The distance required by the human surveying capacity is mental, conceptual, and physical. For Arendt, the fact “that the decisive shrinkage of the earth was the consequence of the intervention of the airplane, that is, of leaving the surface of the earth altogether, is like a symbol for the general phenomenon that any decrease of terrestrial distance can be won only at the price of putting a decisive distance between man and earth, of alienating man from his immediate earthly surroundings” (228).

The prologue to *The Human Condition* expresses the crux of the work in a reflection on Sputnik, which is already loaded with the most important conclusions about modern world alienation. She describes Sputnik as “an earth-born object made by man” that was “launched into the universe” where it orbited “according to the same laws of

gravitation that swing and keep in motion the celestial bodies” (1). Arendt indicates that the expected emotion on this occasion was a triumphant joy, and a pride in human ingenuity and mastery of matter. In fact, the emotional outbursts which accompanied this great event, expressed “relief about the ‘step toward escape from men’s imprisonment to the earth.” She observes that this “strange statement” has in fact “been commonplace for some time” and bears resemblance to an earlier Russian epitaph: “Mankind will not remain bound to the earth forever” (2).

This sentiment is in harmony with the science of the modern age. Both the sentiment and the science are radically new, for “although Christians have spoken of the earth as a vale of tears and philosophers have looked on their body as a prison of mind or soul, nobody in the history of mankind has ever conceived of the earth as a prison for men’s bodies or shown such eagerness to go literally from here to the moon” (2). The idea that the earth is a place to physically escape from is unprecedented. What started as a turning-away from God has developed into “an even more fateful repudiation of an Earth who was the Mother of all living creatures under the sky” and “the very quintessence of the human condition” (2). The earth is the only place known to produce and sustain life and intelligence, and it does so in a way that should inspire awe. The naturalness and perfection of life as it has been given to humans has been rejected as an idea and as reality. Humans have done their best to replace nature with a reality that they create. Traditionally, the human artifice was thought of as a completion and perfection of what is naturally given, but part of the modern project is to replace nature altogether. However, this line of argument seems to contradict Arendt’s other assertion that humanity in its absorption in labour has come to close to nature, and has lost what is specifically human.

According to Barry Cooper, nature and the earth generally present different aspects to human beings, depending on their mode of activity. For *homo faber* (man in mode of work), the earth is not an abundant mother, but rather a lifeless resource, a sterile stockpile of raw material which has no inherent value except as a future commodity. This potential worth is actualized only when the raw material of the earth is reshaped by the human hand, by *homo faber*. For Plato, Aristotle, and the tradition that follows, this state of affairs is an abomination, a view expressed most perfectly in Plato's refutation of Protagoras' argument that "man is the measure of all use things."²⁷

It is through its durability that the world of things makes humans at home on the earth. According to Cooper, "things give the human artifice stability and solidity necessary to house mortal (and so, unstable) humans."²⁸ Work creates the things which constitute the human artifice, and insofar as things are durable, they make a home for mortals and make possible human worldliness. Things which are created and used with durability in mind do not quickly disappear. Consumer goods, however, complete their lifespan so quickly, they do not make worldliness possible; worldly goods which are merely temporary cannot form a stable world. Of course, even durable objects can be used up or destroyed, but Cooper says this is "incidental" to their use, while destruction is "inherent in consumption."²⁹

Artists provide us with the most durable objects of all. According to Cooper, the "durability, or rather the permanence, of art represents the stability of the world, the human artifice as such."³⁰ The permanence and representative power of the objects of *homo faber*, whether artist or toolmaker, privileges him in such a way that *homo faber* "conducts himself as lord and master of the whole earth" (139), and "acts as a god capable

of creating and destroying reality itself.”³¹ Although his products make worldly life possible, his mode of action, given free rein, will turn the world and all the earth into a stockpile of use objects, denying them their own inherent worth.

Homo faber is responsible for the immortality of the world. He creates objects of durability which connect the generations of humans; he makes the earth their permanent home. According to Cooper, “[w]ithout *homo faber* in his or her highest capacity, as poet and monument builder, historian and artist, the stories human beings enact and tell would not survive after the moment of action and speech.”³² When humans come to believe, as they generally have in the modern era, that the world is unstable, or fear that it may be destroyed or at least consumed before the next generation, they will no longer be interested in acting as *homo faber* in his or her highest capacity. Cooper framed the crisis succinctly: “When humans no longer care for immortality they no longer care for the world...[so] eat, drink, and be merry for tomorrow not only do we die but the world comes to an end.” Cooper feels that Arendt captured “the vulgarity, stupidity, and thoughtlessness”³³ of this crisis with the pronouncement: “Worldlessness, alas, is always a form of barbarism.”³⁴

Modern “history making” and modern “nature making”, which are perhaps the greatest and most terrible achievements of *homo faber*, are both ways of acting which undermine the conditions of action and life itself. For Cooper, “making” history would be no different than ending history, for if it were possible it would preclude spontaneous human action. Humans have had greater success in “making nature” though the results are the same: an elimination of the permanence of worldly things, world alienation, and the destruction of the human life and habitat. Throughout this argument, Arendt depicts

alienation as a specifically modern phenomenon; she neglects to consider whether it could be a permanent feature of human nature.³⁵

The question concerning technology as Arendt formulated it was not the hackneyed question of the relationship between humans and their machines: “Who is the master?” According to Cooper, her question asked if technology simply furnished humankind more efficiently with “the things of the world,” creating the conditions for worldliness with less exertion and less slavery to necessity. She found that technology and the concomitant human ‘technological’ consciousness has instead destabilized the human artifice. This is surprising because what originally made the worldliness of humans possible—the things or objects of *homo faber*—eventually alienate them from the world. This, of course, was not intentional, but rather a result of the unpredictability of human action. Cooper finds that the result of technology “is an increase in worldlessness even though it is accompanied by more of the good things of life.”³⁶ It is possible that an abundance of “the good things of this life” is even incompatible with worldliness.

Chapter Two: Science

i) The Telescope and Modern Science

For the Europeans who lived during the three great events at the outset of the modern period, the event which most likely caught the popular imagination was the exploration of the planet, with its tantalizing stories and artifacts from unknown lands. The Reformation was certainly the most spiritually distressing event of the age. Compared to these two great events, the invention of the telescope went relatively unnoticed. At the time, the telescope seemed to be no more than an “addition of a new implement to man’s already large arsenal of tools, useless except to look at the stars, even though it was the first purely scientific instrument ever devised” (226). Despite this modest beginning, the developments which stem from the act of peering through a telescope have changed the face of the earth and the content of the human mind. The speed at which this new understanding developed and spread during the centuries since Galileo took the this first step towards a new understanding of the universe is unparalleled in human history. Even the impacts made by the exploration of the planet, the Reformation, and the endlessly expanding new economy pale in comparison to the legacy of the telescope.

The modern period is a radically new epoch; this is generally uncontested, regardless of questions of when it began, how it was put into motion, and how it is to be judged. Arendt notices the “strange pathos of novelty, the almost violent insistence of nearly all the great authors, scientists, and philosophers since the seventeenth century that they saw things never seen before, thought thoughts never thought before...” (226). At the beginning of his highly influential book, William Burt muses: “How curious, after all, is the way in which we moderns think about our world! And it is all so novel, too. The

cosmology underlying our mental processes is but three centuries old—a mere infant moment “which led Copernicus to consider a new point of reference in astronomy was his discovery that the ancients had disagreed about the matter. Ptolemy’s system had not been the only theory advanced.”³⁷ The posthumous publication of Copernicus’ “wild appeal” to a pre-existing idea *does not constitute a revolution*.

Galileo’s great paradigmatic act, which constitutes an event greater than any other, at least since the dawn of Christianity, was something quite unnoticed. Perhaps it is only fitting that something so subtle and sublime yet radically new should go unnoticed. What was this great act performed by Galileo? He peered through his telescope at the night sky. By using his telescope in this way, he did what had never been done before: he brought the universe which lay outside human perceptual capacity into the realm of the senses. Facts about the celestial sphere were brought home to human perception, in Galileo’s own words, “with the certainty of sense-perception”.³⁸ For the first time, the nature of the universe beyond the human environment was no longer an object of speculation, but rather an object of observation. It was the introduction of “an earth-bound creature and its body-bound senses” (236) to the cosmos beyond. The character of this introduction—that it was mediated by an instrument, that it assumed laws were universal, that the daily sensory experience was denied, and that it enabled an earthly creature to imaginatively look down upon the earth—contained all the elements of the modern worldview.

Modern science was set in motion by this abolition of the distinction between the earth and the sky. Galileo figuratively brought the cosmos into the terrestrial sphere, and in a sense achieved “a unification of the universe” (238). From this point onwards, all worldly occurrences were treated as cosmic processes. Since the earth was proven to be

part of a much greater whole, it was subject to the laws of the whole. Laws discovered on earth were manifestations of the laws of the universe. Arendt points out that “a universally valid law...means, among other things, valid beyond the reach of human sense experience...valid beyond the reach of human memory and the appearance of mankind on earth, valid even beyond the coming into existence of organic life and the earth herself” (238). From this point forward, the laws of physics—whether astrophysics or subatomic physics—are formulated by scientists who look upon the earth as if from the Archimedean point. To look upon the earth as Archimedes wished, from an omniscient distance, is to look upon it “from the standpoint of the One who made it” (269). All of the achievements of modern science—when we stimulate our research and development with knowledge attained through experimentation during space flights, when we analyse the earth’s core with data on neutrinos which have passed through on their journey outward from the sun, when we send probes into and out of the solar system and beyond to gather information about places which no human eyes have seen, when we observe the universe with telescopes in orbit around the earth, when we analyse meteorites for signs of alien life, when we reproduce solar processes to heat or cool our own homes, when we turn matter into energy or energy into matter, when we use lasers to play music or correct our vision—are the products of minds which treat the terrestrial sphere as outsiders, as deeply alienated inhabitants of the earth. It is a stunning tribute to the complexity of the human mind that physicists, who are daily subject to the needs and conditions of their earth-bound bodies, are able to look upon and manipulate earthly processes from the Archimedean point, a point outside the earth. Echoing Kafka, Arendt refers to the ways we have used our knowledge against ourselves, and points to immediate risks such as

nuclear warfare, where “even at the risk of endangering the natural life process we expose the earth to universal, cosmic forces alien to nature’s household” (238). As we shall see, less dramatic but more insidious are the ways we use our knowledge against the capacities of our own minds.

Astronomers in the twentieth century have proposed that heliocentrism is no more valid than a system where the sun revolves around the earth; both systems account for the movement of the celestial bodies. This is not a rebirth of the famous debate between Cardinal Bellarmine and Copernicus, where the two competing hypotheses were mutually incompatible. This time, the difference lies only in the point of reference; the human imagination has become so adept at placing itself in the Archimedean point that it can move the point to any location. The human imagination left the earth centuries ago, but now it no longer needs even the sun; it places itself wherever it needs to be. For this reason Arendt asserts that “only now have we established ourselves as ‘universal’ beings, as creatures who are terrestrial not by nature and essence but only by being alive, and who therefore by virtue of reasoning can overcome this condition not in mere speculation but in actual fact” (239). The movement from a geocentric to heliocentric to a constantly changing centre has undoubtedly contributed to the modern acceptance of relativism in many forms. Modern relativism may have found its fullest expression in the Einstein’s theory of general relativity, but Arendt traces its heritage back to Galileo, Newton, and seventeenth-century theories which assert that colour is only a “relation to a seeing eye” and heaviness only a “relation of reciprocal acceleration.”³⁹ Galileo “stated that the non-mathematical properties are all entirely subjective. They have no existence at all apart from our senses. Thus colours, sound, odours, and so on exist, as such, wholly in our minds.”⁴⁰ This form

of relativism can only exacerbate human alienation from the planet, because it denies the human terrestrial experience its unquestioned and often naïve objective reality. When human experience is relativized there can be no given; nothing is self-evident.

It is Burtt's view that the events of the sixteen and seventeenth century introduced several different points of reference, which provided the standpoints for the most open minds of the age to transcend and re-think their intellectual tradition, and prepared them for the modern versions of the concepts of heliocentrism and relativism. Foremost was the Renaissance, which exposed the learned population to the worldview of classical antiquity. Secondly, as early capitalists left the saturated market of Europe for the exotic untapped trading centres of Asia, Africa, and the New World, it became apparent that Rome was not the (only) religious centre of the world. Burtt claims that "there was a renouncement, in all these respects, of man's former centres of interest and a fixation on something new. In this ferment of strange and radical ideas, widely disseminated by the recent invention of printing, it was not so difficult for Copernicus to consider [heliocentrism]."⁴¹ Burtt finds Copernicus' defense to the objection that if the world spins quickly, objects would be thrown off, to be a crucial one. Crucial not so much for its specific defence as for its implication that stars are subject to the same laws of motion and force as the earth. Although he does not state it in the same vocabulary, he has located the abolition of the distinction between the heavens and earth in this very early event.

Moreover, the modern period followed from the proof—proved, that is, by the telescope, with the certainty of sense-perception—that the Copernican metaphor of "the virile man standing in the sun...overlooking the planets"⁴² was actually indicative of the true state of affairs. Of course man had not become an inhabitant of the sun, but he could

choose to look upon the solar system as if from its centre. Even more incredible than this is what Arendt calls the “human ability to use cosmic laws as guiding principles for terrestrial action” (240). This ability, which required a certain conceptual distance from the earth, allowed the new scientists to apply what was learned from the heavens to the earth and nature, creating almost infinite possibilities for action on earth. This conceptual distance is at the basis of science and of the modern approach to nature; as we shall see, the earth-alienation underlying the course of modern science makes the earth-alienating affects of the shrinkage of the globe and the new economy small by comparison.

Standing at the outset of the new science, the leaders of the Catholic Church understood very clearly that Galileo posed a radically different challenge to their authority than Copernicus. Copernicus’ heliocentric system was useful for mathematicians and astronomers, but it was essentially no more than an hypothesis. For this reason it met no objections from the Church. Galileo, on the other hand, struggled throughout his life with the Church, and spent his last eight years under house arrest. The different treatment resulted from the Church’s awareness of the threat posed by Galileo; Cardinal Bellarmine explained to him: “to prove that the hypothesis... saves the appearances is not at all the same thing as to demonstrate the reality of the movement of the earth.”⁴³ This demonstration, or proof—Galileo’s act of extending his earth-bound sight first to the moon and later out into the solar system—was the first genuinely modern act. His use of the telescope to “demonstrate the reality of the movement of the earth” foreshadowed a new epistemology, a new standard of knowledge, and above all, a new science that uses instruments to imitate and manipulate phenomena in order to attain knowledge of nature and the universe. Two characteristic outcomes, which are by no means exclusive, were

present in this event which stood in the threshold of modernity: the despair of the modern mind, and the triumph of modern science.

ii) The New Approach to Nature

It is generally accepted that during the medieval period very little was added to the West's scientific knowledge. Whitehead asserts that "except in mathematics, the men of the Renaissance practically started from the position which Archimedes had reached."⁴⁴ Like the first few centuries following the Nativity, the character of the period following Galileo's great event has been far from conclusive; and even today, forty years since *The Human Condition* was first published, there is still no consensus in sight. The ascent of the new science, however, seems beyond dispute, and almost as pervasive is the belief that the new science has quickly expanded human knowledge and well-being. With the ascent of the *vita activa* has come the ascent of the new science, followed by ascent of technology, the increase in applications, the number of important discoveries, and the increase in speed at which all these things happen—the truism that history has accelerated. Writing in the 1920s, Whitehead had already recognized that "[w]e live in a world of faster and faster transformation."⁴⁵ The transformation of the world, and to some degree the transformation of the human mind, stem from the same constellation of experiences and assumptions as the scientific experiment. In a very limited sense, the structure of the experiment is analogous to, and helped determine, the structure of the modern physical worldview.

Behind the ascent of science Arendt finds a vastly improved ability to symbolize natural phenomena; this stunning ability was entailed in the Archimedean point, a new way of looking upon nature. Humankind's ability to symbolize and apply concepts which had previously been outside the realm of human understanding (and despite appearances,

continued to be), and “to reckon with entities which could not be ‘seen’ by the eye of the mind” (241), was an ability that at once outshined all the other scientific innovations and breakthroughs of the age and was present in them all. But what was even more important for the development of modernity was the entirely novel way of contacting and relating to nature that was also engendered by the stunning human ability to symbolize. This radically new relationship to nature was developed and expressed by the scientific experiment. According to Arendt, in “the experiment man realized his newly won freedom from the shackles of earth-bound experience; instead of observing natural phenomena as they were given to him, he placed nature under the conditions of his own mind, that is, under conditions won from a universal, astrophysical viewpoint, a cosmic standpoint outside nature itself” (241).

The modern scientific experiment exists and is performed to show how something came to be. This purpose is at the basis of the modern notion of experimentation, and science itself. It would be impossible to change this essential feature of the experiment without changing the structure of modern science and the modern meaning of knowledge itself. The process-oriented search for how a thing came to be underlies the modern physical world view. And further, because the experiment is a product of the human mind, and is structured and precluded by the hidden teleology of the hypothesis, it always gives rise to an outcome which is structured in association with the human mind. This is the case even when the outcome of the experiment is not what the hypothesis anticipated, for even the anomaly has its role preconfigured by the prior existence and configuration of the anticipated result. The loaded question has already been asked, the distinction between

'correct' results and anomalies has already been made, and anomalies were defined in relationship to the 'correct' results.

Cooper writes that "[e]xperimentation shows how a thing came to be, not what from all eternity it is."⁴⁶ The knowledge produced by the experiment is of "genesis, of the process by which the thing, perhaps temporarily, came into existence."⁴⁷ This type of knowledge is very different from knowledge of the thing itself. Cooper contrasts the premodern artisan, for whom the production process was no more than the means to the desired end product, to the modern scientist, whose end material product is a side effect. The scientist performs the experiment to attain knowledge of genesis and process; the activity of making took precedence over what was made, and the process replaced the product. It is in this reversal of priority that Cooper locates the final elimination of contemplation, because neither "the thing made, which can be visibly beheld, nor the nonexistent, eternal pattern, which can be beheld by the mind's eye, mattered any longer."⁴⁸ Of course, the unquestioned assumption is that truth can and must be apprehended by experimentation in particular, and the *vita activa* in general.

Modern scientists, and to an extent all modern individuals, are armed with this unquestioned assumption, a new way to approach nature and catch it unaware, and the conviction that to know is to *make sure*. The supposed proof of the supremacy of this perspective lies in the successful and repeatable manipulation of nature, regardless of the human ability to comprehend the success. Jonathan Swift was an early satirist of this new worldview. According to Cooper, "Swift's point... is that if the new science is allowed to flourish without restraint, it both destroys the natural perspectives of human beings and establishes a tyranny."⁴⁹ Swift lived in an age when creating satire was both humorous

and possible. Today it is neither: "Today reality is sufficiently grotesque to make satire impossible: after all, how could it be exaggerated?"⁵⁰ Among the natural perspectives of human beings destroyed by the scientific worldview is the perceived relationship to nature. The meaning of nature is undermined by the modern universal scientific worldview, and "[e]vidence for the atrophy of experiences of meaning in nature are several hundred years old."⁵¹

Arendt finds the devices of modern algebra, which are perhaps the greatest tools of the new science, to be probably the earliest and clearest element of the earth alienation of the modern period. The development of algebra has allowed mathematics to operate without reference to geometry (that is, earth measurement) and even space itself. Arendt contends that "[m]odern mathematics freed man from the shackles of earth-bound experience and his power of cognition from the shackles of finitude"⁽²⁴⁰⁾. Arendt finds in this subordination of geometry to algebra an expression of the "modern ideal" of reducing all knowledge of the earth to mathematical symbols. On the surface, it might seem that the famous Pythagorean doctrine that the world is made of numbers has been realized, but in fact it is a perfect reversal. What the Pythagoreans meant by numbers was limited units of earthly space; for them the cosmos was made up of geometrical units, but for the modern understanding, the earth can be described and reduced to terms of the universe. The modern understanding is witnessed in Galileo's geometrical compass, published in 1597, "which consists of a detailed set of rules for reducing irregular to regular figures...this geometrical reduction, so characteristic of mathematics in the sixteenth century, is [also] fundamental for our understanding of Copernicus. It is an essential factor in his doctrine of the relativity of motion."⁵²

For the early geniuses of the new science, mathematics was believed to be the key to the universe. By choosing from the wide range of experienced phenomena those elements which exhibited quantitative features, phenomena were reduced and abstracted to the point that they could be symbolized mathematically. With the amazing successes of this method, the curious but distorted belief came into being that “[t]he real world is the world of mathematical characteristics. In fact, our minds are so constructed, Kepler said, that they can know nothing perfectly except quantities.”⁵³ The hierarchy implicit in the separation of primary qualities from secondary reflects this problematic beginning of mathematics.

Arendt claims that without the reduction to non-spatial mathematics Newton would have lacked the mathematical language which allowed him to unite astronomy and physics, and to metaphorically abolish the division between the earth and sky by showing that both are subject to the same laws of gravitation. The mathematical symbols which allowed Newton to do this were part of a great leap in humankind’s application of its stunning ability to represent symbolically, and thus use, concepts and dimensions which had previously been thought to be beyond the limits of the human mind. The applications of these symbols—the fact that humans could work with them—seemed to erase the limits of the human mind.

The primacy of mathematics in the age of modern science is in no way to be confused with the high regard in which Plato held geometry. In the *Republic* Socrates describes the knowledge attained through mathematics, which is of “what is always, and not at all what is at any time coming into being and passing away”⁵⁴ and mathematics “make it easier to make out the idea of the good.”⁵⁵ Mathematics is a noble science, the

last phase of education before, and second only to the dialectic of philosophy.

Mathematics was thought to be a suitable propaedeutic to philosophy because it provided an introduction to mathematic ideal forms, and as such gave systematic and reliable access to the realm of pure Being. This eternal realm is free of decaying material and mortal, sensual human impurities, and the “contradictions that lie hid in opinions based on mere sense-knowledge.”⁵⁶

Mathematics, for Plato, gave the reasoning element of the soul access to the realm of Being; ideal forms were given to the mind’s eyes much the same way worldly forms were given to the body’s eyes. In what is a monumental rejection of Plato’s evaluation of mathematics, modern algebra is a product of the intellect; it isn’t concerned with Being or even appearances; “but becomes instead the science of the structure of the human mind” (242). This movement of mathematics out of *res extensa* and into the mind is characteristic of the movement of the modern revolution.⁵⁷

The character of the modern revolution is closely tied to the developments of the new science. The conceptual human distancing from the earth and the concomitant universalizing and relativizing of the human worldview has geographical, mathematical and scientific parallels. Axiomatic for Arendt is the change in the nature of science following the great scientific advances of the early modern period: Galileo’s use of the telescope, the discovery of the Archimedean point, and the affirmation of Copernicus’ heliocentrism. She typifies this change in the nature of science as a movement from geophysics to astrophysics, or from “natural” science to “universal” science.

At the outset of the modern era “every science, not only physical and natural science, so radically changed its innermost content that one may doubt whether prior to

the modern age anything like science existed at all” (240). Although its beginnings lay Galileo’s use of the telescope, this change in the nature of science took centuries before it was actualized at all levels of human existence. Today it has changed the face of the earth and the content of the human mind; today we “have come to live in a world thoroughly determined by a science and a technology whose objective truth and practical know-how are derived from cosmic and universal, as distinguished from terrestrial and “natural,” laws”(244). In this context, the novelty of modern science is the way it collects and applies knowledge. Knowledge is collected by imaginatively placing oneself in a place outside the earth, and is applied to that which lies inside the earthly sphere: nature and the world of things. As Arendt indicates, the collection and application of this knowledge are ordered with a view to master nature. George Grant has shown “that what was known in the physics of the Greeks was not knowledge of the kind that put the energies of nature at their disposal,”⁵⁸ whereas all modern physics is applied physics.⁵⁹ Writing in the 1950s, the first years of the mass production of nuclear weapons, Arendt also points to the obvious risk of destroying nature and man himself by introducing cosmic processes into nature’s garden. Nuclear weapons would wipe out all humans ever, and “make everything into nothing”⁶⁰ using cosmic processes.

As terrible as humanity’s capacity for destruction had become, its capacity for creation was no less audacious. Arendt uses the word ‘creation’ to describe the capacity “to perform what times before us regarded as the greatest, the deepest, and holiest secret of nature, to create or re-create the miracle of life” (245). For a reader in the late twentieth-century this capacity probably does not smack of blasphemy, but regardless of the particular traditional framework from which it is judged—religious, philosophical, or

theological—it is always blasphemous. For Arendt, attempts to recreate life through biotechnology represent “a rebellion against the very factuality of the human condition,”⁶¹ a desire to change life as it is given. Arendt makes an illuminating comparison of this capacity to create life with the entire project of modern science, and concludes that the charge of blasphemy is somewhat misguided. According to her comparison, the fact that Archimedes posited his point means he understood perfectly—though he lacked the means to reach his point—that “no matter how we explain the evolution of the earth and nature and man, they must have come into being by some transmundane, “universal” force, whose work must be comprehensible to the point of imitation by somebody who is able to occupy the same location”⁽²⁴⁵⁾. Of course, the point is no more than an assumed location that allows humans to imitate processes alien to nature’s household. These processes are cosmic, for they are processes in which matter comes into being. Nature’s household is shelter against such processes; they are alien to it; nature is a realm of stable matter. Arendt’s distinction between nature and the universe is the source of the distinction between natural science and universal science, and of geophysics and astrophysics. Understood in this way, her distinction is not unlike the premodern division of the earth and the sky. Of course, there is immense power⁶² in the application of universal science in the realm of nature; universal science treats the earth as a special case, but the earth is still subject to the same universal laws. Arendt writes that it “is indeed in the very nature of the thing that... “universal science”...should have been able to penetrate the last secrets of the earth and nature”⁽²⁴⁵⁾.

The word “universal” took on a rather new and very distinct meaning with Galileo and especially with Newton: it took on the meaning “valid beyond our solar system”⁽²⁴⁶⁾.

In a similar vein, the word “absolute” as used in modern physics is used to distinguish occurrences and measurements present in the universe from earthly ones, which are “relative.”⁶³ The change in the meanings of these words is proof of the change which took place at the dawn of the modern era. Today, earthly occurrences are merely relative, and they are expressed as such, because the relative position of the earth to the universe is the basis of all measurement. The earth, the cradle of humanity has ceased to be the mind’s reference point, it has been lost its objective reality and been relativised, and it has ceased to be a home.

It would seem that human beings are universal by nature, since they have so readily and so easily taken on the universal standpoint without ever leaving the earth. Arendt points to the anticipation of this fact in both theology and philosophy. Theologians, she muses, have always held to the belief that humans must sojourn in this world as foreigners, as aliens, but have their true origin and home somewhere else. With the modern discovery of the Archimedean point, we finally “have we established ourselves as ‘universal’ beings, as creatures who are terrestrial not by nature and essence but only by being alive, and who therefore by virtue of reasoning can overcome this condition not in mere speculation but in actual fact” (239). In a similar vein, she finds the interest that philosophers have always had for the universal to be an anticipation of the modern period, when humans have “universalized” their minds: they still live upon the earth’s surface, but at the same time can look down up it from any point of reference.

Despite the apparent parallel between the aspirations of philosophy and the achievements of modernity, there has been no consummation, no watershed. Instead there has been a trade-off, a reversal. According to Arendt, the problem is “that while man can

do things from a “universal,” absolute standpoint, what the philosophers had never deemed possible, he has lost his capacity to *think* in universal, absolute terms, thus realizing and defeating at the same time the standards and ideals of traditional philosophy” (246). The distinction between the earth and sky has been abolished, but it has been replaced by an equally unbridgeable gulf between “man and the universe, or between the capacities of the human mind for understanding and the universal laws which man can discover and handle without true comprehension” (246). Similarly, in the prologue to *The Human Condition*, Arendt proposes that “...it could be that we, who are earthbound creatures and have begun to act as though we were dwellers of the universe, will forever be unable to understand, that is, to think and speak about the things which nevertheless we are able to do” (3).

Chapter Three: Doubt

i) Descartes and Doubt

The new science changed the face of the earth and the content of the human mind, but the latter succumbed much faster. It took hundreds of years for science to develop and infiltrate all aspects of human life; in contrast, it took less than a generation for the new science to take affect on the minds of contemporaneous intellectuals. Arendt contends that the *intelligentsia* of the seventeenth century foreshadowed with their own dramatic change the change of mind of all modern men, which has only become evident this century, so that “truths for many centuries accessible only to the few have become realities for everybody” (248).

Galileo’s great event, with its radical method and implied assumptions about the character of the universe, was keenly understood by the learned men of Europe, and most acutely expressed in philosophical language by Rene Descartes. Despite the importance she attaches to Descartes, Arendt makes it clear that it was the three great events, and not Descartes’ idea, that stood at the threshold of the modern period (227). She considers Descartes the father of modern philosophy, and Galileo the ancestor of modern science. These men died before the gulf between philosophy and science had become too great for any thinker to bridge in a meaningful way.

Descartes was intimately aware of the changes occurring in the science and the worldview of his day. He knew of Galileo’s victories and tribulations, and Arendt tells us that when Descartes found out about Galileo’s recantation, he had half a mind to burn all his writings, because “if the movement of the earth is false, all the foundations of my philosophy are also false.”⁶⁴ Descartes wrote the *Meditations* a year before Galileo died.

Strangely, there was no exultation following Galileo's great deed. There was, however, "a sudden change in mood which overtook the learned world after the confirmation of Galileo's discovery" (236). Descartes, and soon all philosophers, raised their philosophical reactions and change in mood "to the level of uncompromising thought" (248). With astounding philosophical sensitivity, Descartes' writings resound with the dramatic change of mood and the "enormous shock" (248), and anticipate the problematic nature of the new universal standpoint. Arendt observes that the scientists of the period were too busy with their new discoveries and new knowledge to consider the problems inherent in their new standpoint; precisely this standpoint was making possible whole new avenues of thought, and solving age-old riddles. Why worry about its shortcomings? Arendt sees in the paradoxes of twentieth-century science the resurfacing of these problems, which could only be successfully ignored for so long. Arendt finds in Descartes' writings one of the earliest surfacing of the new worldview:

Modern philosophy began with Descartes' *de omnibus dubitandum est*, with doubt, but with doubt not as an inherent control of the human mind to guard against deceptions of thought and illusions of sense, not as skepticism against the morals and prejudices of men and times, not even as a critical method in scientific inquiry and philosophical speculation. Cartesian doubt is much more far-reaching in scope and too fundamental in intent to be determined by such concrete contents (249).

According to Arendt, doubt is as central to modern philosophy as *thaumazein*, the wonder of being, was to Greek philosophy. In fact, just as it is often stated that western philosophy is a series of footnotes to Plato and Aristotle, Arendt states that "modern philosophy since Descartes has consisted in the articulations and ramifications of doubting" (249). Cartesian doubt, an eloquent reaction to a great event, has determined the

content and character of the modern mind, and ordered the standard modern definitions of truth, knowledge, and existence. The most outstanding feature of Cartesian doubt is its universality. No modern thought or experience can escape its universal influence.

It is Arendt's contention that "[t]he immediate philosophic reaction to this [proof of the earth's movement] was not exultation but rather the Cartesian doubt by which modern philosophy—that "school of suspicion," as Nietzsche once called it—was founded" (236). Arendt locates the consummation of that school of suspicion in Bertrand Russell's claim that "only on the firm foundation of unyielding despair can the soul's habitation henceforth be safely built."⁶⁵

Cartesian doubt was a plausible response to a new reality, to a great event. There was a straightforward relationship between the event and the response it received. Descartes and his contemporaries recognized that new reality that had arisen was something that undermined, and given time would replace *in toto*, the traditional framework. But what occurred in society over the centuries occurred almost immediately in the philosophical writings of the period. Beginning with Descartes, the "philosophers understood at once that Galileo's discoveries implied no mere challenge to the testimony of the senses and that it was no longer reason, as in Aristarchus and Copernicus, that had "committed such rape on their senses".⁶⁶ Had this been the case, the philosophers would have only had to choose from among their own natural faculties "the mistress of their credulity."⁶⁷ But this was not the case; the traditional challenge of reason to the senses faded in comparison to the challenge of this new reality. The telescope "actually changed the physical world view;" and upset the "old opposition of sensual and rational truth"(249-250).

The new reality and the new physical world view stemmed from the telescope. The traditional ways of achieving knowledge—contemplation, observation, and speculation—were undermined by the telescope, a man-made instrument. No longer could humans trust that if they perceived phenomena diligently and reasoned corrected, truth and reality would appear of their own accord. In fact, the “obvious implication” of Galileo’s discoveries was “that neither truth nor reality is given, that neither of them appears as it is, and that only interference with appearance, doing away with appearances, can hold out a hope for true knowledge” (250).

The ancient fear that our senses might not be perfect reflections of reality was consummated by the telescope. By showing that the night sky had been very dimly apprehended by humans, Galileo proved that our vision is fundamentally flawed and limited, and by extension his telescope cast doubt upon all uses of all the human senses. If there is far more to the moon than what we see with the naked eye, there must be far more to reality than what we see, hear, smell, touch and taste. The answer to the ancient question was that humanity had played the credulous fool all along. What was worse, it was not man’s reason—the traditional rival of the senses—that had won out. The victory of one human faculty over another could not have generated the “enormous shock” that followed Descartes’ discovery. It was, rather, an instrument, the product of *homo faber*, that won out over the human senses.

With the victory of the instrument over reason and common sense came a realization of the “extent to which reason and faith in reason depends not upon single sense perceptions, each of which may be an illusion, but upon the unquestioned assumption that the senses as a whole—kept together and ruled over by common sense,

the sixth and highest sense—fit man into the reality which surrounds him” (250). Suddenly all of human knowledge, from mundane daily experiences to the knowledge of the highest things, was thrown into question; it seemed that “everyday experience was a constant source of error and delusion”⁶⁸ and even the existence of the obvious was no longer granted. Once Being and appearance drift asunder, “and this—as Marx once remarked—is indeed the basic assumption of all modern science, then there is nothing left to be taken upon faith; everything must be doubted” (250).

The traditional tension between reason and the senses was outshined by the challenge to both of them by a man-made instrument, the telescope. From this time forward, the scientific instrument became the hallmark of truth. It seemed that man with his earlier ability to sense, observe, speculate, and reason, was not very well suited to reality; after all, he’d been foolish enough to believe the sun revolved around the earth. The truth and reality of nature do not readily avail themselves to man; he must interfere with nature—catch her unaware—for the truth to be known.

Galileo and his use of the telescope demonstrated that humanity had entertained serious errors about the nature of the heavens since the beginning of time. For Descartes, this cast uncertainty upon the ability of human senses to accurately apprehend any phenomena. Descartes recognized the radical doubt which seemed to be a reasonable and almost necessary response to the erroneous nature of the senses, and he made doubt the centre of a philosophy which excluded the phenomenal realm from the realm of things about which certainty is possible. Soon doubt would become the cornerstone of all intellectual projects, and a definitive part of the modern predisposition.

Cartesian doubt was a radical break with tradition, and it helped define

the break of modernity with tradition. Up until this break, it was assumed that human beings had a unique capacity to apprehend truth; that Being revealed itself to humans. With the proliferation of the new and radical doubt and the loss of what is naturally given came what Arendt maintains is a “demonstrable” increase in human despair and nihilism.

Cartesian doubt begins with the loss of self-evidence; this is radically new, for “all thought had always started from what is evident in and by itself—evident not only for the thinker but for everybody” (251). Doubt was first directed at the senses, but soon reason was doubted too, and finally belief. Of course, doubt was nothing new. Human beings have often doubted their ability to know all there is to know, and whether there exist certain truths which transcend human capacities. But with the loss of self-evidence, this new Cartesian universal doubt makes a radical break from tradition: it implies “that intelligibility to human understanding does not at all constitute a demonstration of truth, just as visibility did not at all constitute a proof of reality” (251). The traditional apprehension of truth is undermined at three distinct points by doubt: whether “such a thing as truth exists at all,” whether “it will appear of its own accord, and [whether] human capabilities are adequate to receive it” (251).

Through the squinting eyes of doubt nothing is self-evident, not the senses nor phenomena nor reason nor faith. According to Arendt, modern philosophy—Descartes’ lineage—is vehemently opposed to tradition, “making short shrift of the enthusiastic Renaissance revival and rediscovery of antiquity.” Traditional philosophy was denounced because the “common creed of pagan and Hebrew antiquity, of Christian and secular philosophy” was that “truth reveals itself” (251).

Much of Arendt's argument is unique, but her characterization of modern philosophy certainly is not. William Burtz gave a particularly clear account of the shift in philosophy to epistemological issues since the time of Descartes. The problems of knowledge have been inflated, and all other ultimate issues are now contingent upon them. The primacy and recurrence of these problems are manifestations of a shift in thinking which took place at the outset of the modern period. According to Burtz, "The central place of epistemology in modern philosophy is no accident; it is a most naturally corollary of something still more pervasive and significant, a conception of man himself, and especially of his relation to the world around him."⁶⁹ Anticipating Arendt, he asserts that knowledge posed no insurmountable problems for the philosophers of the Middle Ages, and "that the whole world which man's mind seeks to understand is intelligible to it was *explicitly taken for granted*."⁷⁰

Burtz postulates that certain assumptions were accepted at the outset of the modern period, assumptions which necessitated epistemological quandaries. Unsound premises preclude correct conclusions, and lead thought into blind alleys, as is often the case with modern philosophy. These assumptions have found their way into the modern bent of mind. Where did these assumptions come from, and why were they accepted?

Burtz asserts that in "the last analysis it is the ultimate picture which an age forms of the nature of its world that is its most fundamental possession. It is the final controlling factor in all thinking whatever."⁷¹ Modern metaphysics is dramatically different from its medieval counterpart. In the Middle Ages, "man occupied a more significant and determinative place in the universe than the realm of physical nature," while in modernity, "nature holds a more independent, more determinative, and more permanent place than

man.” On the surface, modern metaphysics seems to undo the Christian reversal of a mortal world and immortal humanity.

In the Middle Ages, the entire natural realm was thought to be teleologically oriented towards man’s destiny. Nature existed as it was for man’s use, instruction, and enjoyment. Because nature existed for man’s sake, it was safe to assume that man could know it; nature was “immediately present and fully intelligible to his mind.”⁷² In the modern understanding, humanity is

“but the chance and temporary product of a blind and purposeless nature, an irrelevant spectator of her doings, almost an alien intruder on her domain [again, anticipating Arendt] just as it was thoroughly natural for medieval thinkers to view nature as subservient to man’s knowledge, purpose, and destiny; so now it has become natural to view her as existing and operating in her own self-contained independence, and so far as man’s ultimate relation to her is clear at all, to consider his knowledge and purpose somehow produced by her, and his destiny wholly dependent on her.”⁷³

In the early part of the twentieth century, such a cosmology was called “naturalism”, as if these were truths which would become naturally apparent to a mind free of hidden assumptions and superstitions.

One of the ways Burtt distinguishes modern from premodern science is by its dramatic shift in terminology. Previous categories of scientific thought were substance, accident, causality, essence and idea, matter and form, potentiality and actuality. Modern scientific categories are force, motion, mass, space and time. The modern mind has great difficulty understanding precisely what is most crucial for Burtt: the irrelevance of modern categories to medieval science. “Spatial and temporal relations were accidental, not essential characteristics. Instead of spatial connexions of things, men were seeking their

logical connexions; instead of the onward march of time, men thought of the eternal passage of potentiality into actuality.”⁷⁴

Burt asserts that the problems of modern philosophy are due to the prior acceptance of certain unfounded assumptions and modern scientific categories which preclude the aims of philosophy. The assumptions—which Burt has trouble pinpointing—are present in the new categories and terms of science, and the type of knowledge they make possible. One of the consequences of these modern assumptions is the failure of any attempt to understand humankind’s correct relationship to nature.

The new relationship of Being and appearance is more complex than indicated by the claim that they drifted asunder. Not only did they drift apart, but they each took on new characteristics which mirrored the fateful loss of human confidence in human abilities. With traditional skepticism, Being and appearance were taken as fairly fixed in their relationship to one another. Appearance was always a guise covering true being, hiding it and making it go unnoticed by the human beings who live in the realm of appearance. Once they drifted apart, however, their relationship changed. Being became “tremendously active and energetic: it creates its own appearances, except that these appearances are delusions. Whatever human senses perceive is brought about by invisible, secret forces, and if through certain devices, ingenious instruments, these forces are caught in the act rather than discovered—as an animal is trapped or a thief is caught much against their own will and intention...” (251) The corollary to this new understanding of Being is that anything it allows to be received as human sense data is necessarily false, and any conclusion based on such data is also false. Humans can sense only appearances, which are illusions emanating from Being. This new understanding included an assumption that man-

made instruments could go where the human sensory and even reasoning abilities could not: into the realm of true Being. Although Arendt has attempted to distinguish the skepticism of modern science from earlier forms of skepticism, she has not made a strong case for her the fundamental and ubiquitous doubt of the senses which she claims is part of the modern worldview.

Descartes' philosophy is "haunted by two nightmares which in a sense became the nightmares of the whole modern age" (252). It would be wrong to assert that the modern age has become persuaded by Descartes' philosophy, and for this reason has taken his nightmares on as its own. What actually happened, in Arendt's estimation, is an equally simple process. Just as Descartes' was the first thinker to understand and respond to this new physical world view, the modern age had little choice but to take these nightmares on as its own once the implications of this new standpoint were understood.

It is not surprising that the two nightmares are common experiences, and quite similar to one another. Both stem from mistrust of the senses, of common sense, and of reason. In one, the existence and reality of the world and human life is doubted. What is commonly taken for reality might be a dream or a fantasy. Second is the possibility of a *Dieu trompeur* who intentionally bestows on humans a false sense of perception, knowledge and truth. Given the nature of Galileo's discoveries and the new relationship of Being and appearance, a spiteful and purposefully misleading evil spirit seemed a more plausible deity than the traditional God. Arendt sees the irony in this condition of humanity: "The consummate devilry of this evil spirit would consist in having created a creature which harbors a notion of truth only to bestow on it such other faculties that it will never be able to reach any truth, never be able to be certain of anything" (252).

In a revealing aside, Arendt shows how the loss of certainty has been the basis of modern morality. She qualifies the claims made up to this point by explaining that it was not the basic human faculties that were lost in the modern age. Human beings continue to be capable of sensing and of reasoning, of recognizing truth and reality, and even of faith. What has been lost, Arendt carefully qualifies, is the certainty that had previously attended them. For religion, “it was not belief in salvation or a hereafter that was immediately lost, but the *certitudo salutis*—and this happened in all Protestant countries” (252). In countries where the Catholic Church had fallen, there was no institution or vestige of traditional authority to mitigate the affects of modernity on the population. Just as Max Weber showed the affinity between Protestantism and “a new zeal for making good in this life...so the loss of certainty of truth ended in a new, entirely unprecedented zeal for truthfulness” (252). Arendt observes that none of the major religions—with the exception of Zoroastrianism—has included lying among the mortal sins, and she wonders whether, before puritan morality, lying was ever considered a serious offense. It seems that “man could afford to be a liar only so long as he was certain of the unchallengeable existence of truth and objective reality, which surely would survive and defeat all his lies” (253). Once the existence of a universal order of truth and morality is doubted, lying takes on a whole new meaning. It comes as no surprise that the original impulse towards this dramatically new morality of success, industry, and truthfulness came from the new scientists. It was in this same type of man that the modern physical world view first took hold. These were the epoch-makers; their outlook and the moral requirements of their craft became the outlook and morality of the modern period.

These epoch-makers, the greatest minds of their generation, were involved in perhaps the greatest task ever undertaken by humankind. They organized themselves into highly influential learned societies and various academies for one purpose: to develop the methodological and technical skills by means of which nature could be “trapped by experiments” and “forced to yield her secrets” (253). As part of their project, they contributed to the formation of the modern conceptions of morality, truth, knowledge, and judgement. Arendt describes the formation in this way: “Where formerly truth had resided in the kind of “theory” that since the Greeks had meant the contemplative glance of the beholder who was concerned with, and received, the reality opening up before him, the question of success took over and the test of theory became a “practical” one—whether or not it will work” (253). At the hands of these epoch-makers, classical “theory” was transmogrified and reduced to the scientific hypothesis, and the success of the hypothesis became the new standard of truth. Success as the standard of truth of the new science stood irrespective of successful practical application. Today we have become accustomed to evaluating the success of research by its potential application, but Arendt does not find a concern for practical applications in this new standard; nor was success the standard of all goodness worshipped by our “upwardly-mobile” society. Success was the demonstrable standard of proof in the new science; success substantiated science’s truth-claims and brought it the support and resources to continue its endeavour. The success of the new science was everywhere thought to be “a veritable triumph of human ingenuity against overwhelming odds” (253).

ii) Descartes and Introspection

Descartes attempted to solve his twin nightmares—that our daily life is a dream and reality does not exist, and that an evil spirit rules the world and deceives humanity—by turning to what Arendt considers to be “similar in method and content” to the new science and morality, which consisted in “the turning away from truth to truthfulness and from reality to reliability” (254). What seems like a subtle shift in orientation was in fact a whole new way of understanding human capacities. Descartes held that “though our mind is not the measure of things or of truth, it must assuredly be the measure of things that we affirm or deny.”⁷⁵ The affinity between Descartes’ solution and the new scientific ethos is remarkable: human beings can be truthful and reliable, regardless of the existence of truth and certainty. The solution to the doubt of human capacities had to lie in humans themselves, even in the human ability to doubt. Modern salvation is thought to reside in humanity, and the solution to doubt is thought to reside in more doubting. Even when existence itself is doubtful, it is still possible to be certain that doubt exists; according to Descartes “nobody can doubt of his doubt and remain uncertain whether he doubts or does not doubt.”⁷⁶ It is Arendt’s belief that this certainty of doubt was the cornerstone of Descartes’ project, and not, as is the popularly opinion, his famous formulation “*cogito ergo sum*” (“I think, therefore I am”). If the latter opinion were true, “thought would have acquired a new dignity and significance for man...” but in fact thought did not have a “self-certainty”, and the *cogito* was “a mere generalization of a *dubito ergo sum*” (254). From the “mere logical certainty” that in the act doubting the doubter is conscious of the

act of doubting, Descartes extended a type of certainty to all the mental processes, and affirmed the possibility of studying them through introspection.

As long as the doubter confronts nothing but his own mental processes, doubt can provide a type of certainty, because the doubter confronts something he has made himself. There can be no interference by an evil spirit without the awareness of the doubter; the world can be a dream but the doubter still doubts. Introspection provides a small realm of certainty, at the expense of no longer being capable of reflecting on the world, the otherworldly, nor even on the state of the “soul or body, but the sheer cognitive concern of consciousness with its own content (and this is the essence of the Cartesian *cogitatio*, where *cogito* always means *cogito me cogitare*)...” (254) Armed with this powerful account of Descartes, Arendt contends that modern philosophy has “made sure in introspection that man concerns himself only with himself” (255) and that introspection was the precedent to the problem in the sciences of whether humans actually encounter, know, and understand anything except that which they have made.

For Descartes, human beings carry their certainty within themselves; though they cannot be sure about the reality of the world, they can be sure about the processes of their own mind—doubt, sensations or reasoning. Arendt likens this type of certainty to bodily processes which, when one is conscious of them, can be reliably thought to exist and to function. But this line of reasoning could be used to prove the reality of dreams, because every dream is contingent upon the existence of a dreamer and a dream. The problems arise when one tries to infer from one’s consciousness of bodily processes the shape and features of a body, even one’s own. For this reason “it is impossible to reach out from the mere consciousness of sensations, in which one senses his senses and in which even the

sensed object becomes part of sensation, into reality with its shapes, forms, colors, and constellations” (255). With Descartes’ formulation, the small realm of cognitive certainty is acquired by sacrificing the possibilities for knowledge of external reality. The sensations of the object one sees or even dreams can be affirmed in the mind, but the reality of the object—that which had previously been self-evident—can no longer be proven.

In response to the problems of the Cartesian formulations (which themselves responded to the new reality of the telescope) arose what Leibniz coined “theodicies,” which were entirely modern justifications of God’s nature. Having experienced the denial of the self-evident sensory truths and the sundering of being and appearance, Descartes and Leibniz were compelled to prove not that God exists, but that he is good, that he does not deceive humanity, and that this world is in fact the best possible world. God’s existence is assumed, and instead, the relationship he created between humanity and the world is under investigation. The theodicies responded to the doubt of the fundamental goodness of God. The idea of a *Dieu trompeur*—a God who misleads, deceives, and mocks—was a consequence of the experience of the new physical worldview, and in particular the opposition of this new worldview to daily experiences such as the sunrise and sunset. With this in mind, we can agree with Barry Cooper that “[t]he end point is a kind of double vision: we see with our eyes that the sun rises in the east, but we see in our minds that the earth revolves about the sun. In the words of the modern cosmologists Lennon and McCartney:

But the fool on the hill
Sees the sun going down
And the eyes in his head
See the world spinning round.”⁷⁷

What was equally unfortunate for modern man was the plausible but misguided conclusion that without the chance discovery of the telescope, humankind would have continued to be deceived and mocked forever. Further, with the new understanding of the universe, it became more and more difficult to locate man's place within it; "the more man learned about the universe, the less he could understand the intentions and purposes for which he should have been created" (256). For this reason, Arendt considers the goodness of God in the theodicies —so crucial to the philosophy of both Descartes and Leibniz—to be merely a quality of a *deus ex machina*.

Cartesian introspection has become the intellectual and spiritual foundation of the modern age. Its importance lies in its ability to use "the nightmare of non-reality as a means of submerging all worldly objects into the stream of consciousness and its process" (256). With the separation of Being and appearance, the objects present in consciousness which are known through introspection ceased to be the same objects which are given to the senses. In other words, the awareness of the smell and sight of a rose ceased to be identical with the rose itself. When the rose stops being thought of as its own entity, and is processed into an object present in consciousness, it has lost a certain degree of reality, and can no longer be distinguished from an imaginary rose. From this point forward, real objects which are processed into objects of consciousness can no longer be known as qualitatively different from the process itself. The process is nothing other than "that consciousness... which one knows only as an ever-moving stream." According to Arendt, perhaps nothing "could prepare our minds better for the eventual dissolution of matter into energy, of objects into a whirl of atomic occurrences, that this dissolution of objective reality into subjective states of mind or, rather, into subjective mental processes" (256-7).

And what had an even greater initial impact on the beginning of the modern age was the Cartesian attempt to secure a realm of cognitive certainty, because it corresponded perfectly to the methodological consensus of the physical sciences: “though one cannot know truth as something given and disclosed, man can at least know what he makes himself” (257). Arendt considers this consensus to be the most common and commonly held conviction of modernity. This conviction—not the doubt that lies behind it—is responsible for the direction and heady pace of modern development.

Whitehead agrees that Cartesian reason is founded “on the implicit assumption that the mind can only know that which it has itself produced and retains in some sense within itself.”⁷⁸ Because Descartes and the new scientists found certainty in the products of the mind itself, mathematical knowledge became for them the highest ideal. Mathematics is understood in a new light in the modern age; it is no longer “the knowledge of ideal forms given outside the mind but of forms produced by the mind which in this particular instance does not even need the stimulation—or, rather, the irritation—of the senses by objects other than itself” (257). This new theory of knowledge, with its “liberation” from the senses, is what Whitehead has called “the outcome of common-sense in retreat.”⁷⁹ According to Arendt, common sense was the faculty by which all the other senses—each of which function independently of one another—were integrated into the common world, in the same way that sight integrated man into the visible world. The modern outcome of common-sense in retreat is that common sense became a purely internal faculty, lacking a true relationship with the world. Once this occurred, common sense “was called common merely because it happened to be common to all. What men now have in common is not

the world but the structure of their minds, and this they cannot have in common, strictly speaking; their faculty of reasoning can only happen to be the same in everybody” (257).

Thomas Hobbes is well-known for defining reasoning as “reckoning with consequences,” but Arendt finds this definition also implicit in Descartes; she typifies the modern understanding of reason as a process of deducing and concluding. The ancient designation of man as an *animal rationale* has achieved new poignancy: without an integration of the five senses to the common world, human beings are animals who can do little more than reason.

For modern human beings, the equation $2+2=4$ is no longer balanced and harmonious, in fact it is hardly an *equation*, but a *process* of two and two becoming four, with the implication that four will take part in further additions, always leading to infinity. This mental game, which occurs when the senses and the outside world they mediate are expunged, is the modern substitution for common-sense reasoning. The mind, playing with itself, comes to conclusions which are considered truths because other minds, playing the same game, come to the same conclusions. Arendt observes that all this is based on “the assumption that neither God nor an evil spirit can change the fact that two and two equal four” (259) .

When one has no confidence in one’s own sensory perceptions, reality or the *res extensa*—which is transmitted to the perceiver via those senses—can no longer be reliably apprehended. All our everyday thinking, everything we see and do, starts from this assumption: we live in what is. What is simpler than this? We live in a world experienced via our senses. But the modern doubt of the senses cannot permit humans to be sure they live in what is, because the senses—the messenger of what is—can no longer be trusted.

In Descartes' analytical geometry Arendt finds evidence of the pattern that is typical of the radical introspection of the modern period. Such geometry treats all that is not human—the classical *res extensa* of the terrestrial and worldly realm, or space and extension—in a way that reduces or transmogrifies it into structures and categories which are identical to those of the human mind. Cartesian geometry achieved this transmogrification by contending that all relations of *res extensa* can correctly expressed in the formulae of algebra. What is more, the truths expressed by algebra can be represented spatially, plotted with a precision unattainable in the notoriously recalcitrant relations of *res extensa*. With the development of spatially represented algebra, “a physical science had been evolved which required no principles for its completion beyond those of pure mathematics, and in this science man could move, risk himself into space and be certain that he would not encounter anything but himself, nothing that could not be reduced to patterns present in him” (242). After this development had taken place, phenomena were no longer apprehended as particulars whose appearances are saved as pure forms. Now they owed their existence to the degree to which they could be fit into the categories of mathematics. The apprehension of phenomena in this mathematical manner cannot do what Plato had intended; it does not introduce humans to the ideal forms that are present in sense-data, nor is it a propaedeutic for an encounter with true Being. Quite the opposite is true: this kind of apprehension acts to reduce phenomena to the shape of the human mind. This is made possible not only by the stunning human ability to use symbols in mathematics and other endeavours, but also by distancing and disengaging the mind from its terrestrial outlook. With symbols and distance, the mind can manage the diversity of real phenomena, and fit them into its own categories and structures. Arendt asserts that

phenomena which have been managed and fitted thus are “no longer ideal forms disclosed to the eye of the mind, but are the results of removing the eyes of the mind, no less than the eyes of the body, from the phenomena, of reducing all appearances through the force inherent in distance” (243).

With the power of distance, any group of things, no matter how diverse and disordered, can be found to have certain patterns and relations which might be called ‘ordered’. The clearest and most famous example of this oddity is mathematical curve which, Leibniz noticed, can always be found between random points thrown onto a sheet of paper. Bertrand Russell remarked that if “it can be shown that a mathematical web of some kind can be woven about any universe containing several objects... then the fact that our universe lends itself to mathematical treatment is not a fact of any great philosophic significance.”⁸⁰ Nor does the mathematical construction of our universe express its underlying order, let alone the beauty of this order. And because this construction does not capture the truth of that which the mind is not, it does little to evince or prepare the human mind as a suitable receptor of truth, or even as an receptor on par with the senses.

Arendt finds a striking parallel between the way modern mathematics has ruled out the everyday sensory experience of nature and the way Leibniz ruled out the knowledge of the truly chaotic points thrown randomly onto a piece of paper. Arendt continues the parallel by comparing the “feeling of suspicion, outrage, and despair” (243) which accompanied the realization that the Archimedean point was not a hopeless dream but a reality to the “helpless outrage” of a man who saw dots thrown on paper randomly, but is forced to admit that despite this knowledge he had witnessed the development of a

geometric line. This is not unlike modern chaos theories, whose authors claim that mathematical order exists even in truly chaotic systems.

Chapter Four: The Modern Reversal of the *Vita Activa* and the *Vita Contemplativa*

Much of the awkwardness and complexity of the discovery of the Archimedean point lies in its imagined location: it is located outside the earth, but the imaginer remains on the earth. When knowledge attained outside the earthly realm is applied on the earth, the planet becomes a radically different—even alien—place, and nature herself becomes threatened. Descartes responded to this awkwardness by placing the Archimedean point in the human mind. When the mind's own patterns and products are substituted for external reality, and the mind itself is made into an ultimate point of reference, doubt is held at bay and a space for certainty is created. The substitution of the mind's products for reality is similar to the "famous *reductio scientiae ad mathematicam* [which] permits replacement of what is sensuously given by a system of mathematical equations where all real relationships are dissolved into logical relations between man-made symbols" (258). This replacement is the first step in the project of making naturally given objects and processes amenable to scientific observation—a project tantamount to constructing them. This project lies at the heart of the physical sciences.

Descartes moved the Archimedean point into the human mind to create a realm of certainty, free of doubt. By locating the point in the mind, humans were able to carry it on their daily routines on the earth's surface, all the time able to transcend earthly existence, the human condition, and reality as it is given to the senses. But this new location of the Archimedean point never became as compelling as the doubt from which it sprang, and which it was supposed to vanquish. Arendt finds in the direction of twentieth-century

science, and in the midst of its victories, the “same nightmares which have haunted the philosophers since the beginning of the modern age” (259). She finds the nightmares in certain mathematical equations—which were intended by their authors to be a better way to save the phenomena, which could be saved in other ways, just as the Copernican system explained the solar system with more simplicity than its predecessor—have turned out to have more validity in reality than had originally been intended. She uses the example of an equation of the relationship between mass and energy, which have been given new meaning with the actual conversion of mass into energy and energy into mass, “so that the mathematical “conversion” implicit in every equation corresponds to convertibility in reality” (259). She also finds the nightmare in the surprising and unforeseeable applicability and validity of some of the most remote systems of non-Euclidean mathematics in certain theories of Einstein (whose work is anti-intuitive in its own right); and especially in the inference that all the constructions of mathematics—even the most bizarre creations—have possible applications. On the basis of these discoveries, it stands to reason that entire universes come into existence and validate whatever new mathematical creation the human mind is able to imagine. In “The Concept of History” she explains the problem in this way: “The trouble is that almost every axiom seems to lend itself to consistent deductions and this to such an extent that it is as though men were in a position to prove almost any hypothesis they might choose to adopt, not only in the field of purely mental constructions...but in the natural sciences as well... This means quite literally that everything is possible not only in the realm of ideas, but in the field of reality itself.”⁸¹

In some quarters this problem is seen as a harmony between mind and matter, or human beings and their universe, but for Arendt “it will be difficult to ward off the

suspicion that this mathematically preconceived world may be a dream world where every dreamed vision man himself produces has the character of reality only as long as the dream lasts" (260). This suspicion will be especially hard to ward off as it is discovered that the character and laws of the smallest composite, the atom, are almost identical to the character and laws of the solar system. The microcosm and the macrocosm are alike, because they are observed and conceptualized by the same mind; both bear its signature.

Arendt's understanding of this nightmare of science starts with an account of the modern physical world view, which sets out true Being as a deceptive, even cunning, and terribly powerful force that creates all appearance but never exposes itself in it. We have attempted to catch Being in the midst of its own processes, by observing it with both our senses and our instruments designed to catch nature in the act, and have found that the microcosm and macrocosm are ruled by the same laws, and have the same basic structure. Once again, "we may for a moment rejoice in a refound unity of the universe," (260) only to again experience the nightmare that the laws and structures we have found have less to do with the microcosm and macrocosm than our own minds. Upon further consideration of this uncanny unity, it seems "that we deal only with the patterns of our own mind, the mind which designed the instruments and put nature under its conditions in the experiment—prescribed its laws to nature, in Kant's phrase—in which case it is really as though we were in the hands of an evil spirit who mocks us and frustrates our thirst for knowledge..." (260) The lesson learned from this nightmare is that whenever we try to know something that is distinctly "other"—something that is neither our own mind, nor a human creation—we are instead thrown against the limits and patterns of the human mind. Instead of an encounter with the universe, the mind encounters only itself.

The doubt that arose after Galileo was “logically the most plausible” (260) response to his use of the telescope, though Descartes temporarily mitigated the doubt he had expressed so clearly by placing the Archimedean point in the human mind. In the centuries that followed, the superficiality of this mitigation became transparent, and doubt was recognized as the original and more compelling force. It was especially transparent in certain developments in mathematics and mathematized physics, which began to exhibit a general intransigence to being expressed in models, “since one would have to be shaped after our sense experiences” (261). The intransigence of the modern physical world view, its recalcitrance to expression in models or in words, renders it unintelligible to humans, and thereby alienates them from the physical world.

The problem of expressing scientific truths in anything but mathematical language is in part the result of a difference of location. For a truth to be expressed in everyday speech or thought, it must reflect the earth-bound dimension of the human condition. Truths expressed in scientific language reflect a universal or Archimedean point of reference. The translation of scientific speech into everyday expressions unfailingly produces nonsense.

At this point the nightmares of the modern period begin to appear in the hypothetical character of the natural phenomena observed and manipulated in modern science. The nightmares began with Descartes’ response to Galileo’s discovery, but with modern science the nightmare has developed into new forms. The successes of science and technology seem to verify the essential truth of the underlying theory; that which is successfully demonstrated seems to prove its own theoretical basis. But for Arendt, the success of any system in saving the phenomena “demonstrates no more than that man can

always apply the results of his mind, that no matter which system he uses for the explanation of natural phenomena he will always be able to adopt it as a guiding principle for making and acting” (261). The flexibility of this kind of application was witnessed in the very early discovery that numerical relationships could be expressed spatially. Scientists who have experienced the nightmares or recognized it in their peers have always pointed to successful demonstration and repetition as proof that they are dealing with the true natural order. Today, the stunning achievements of technology shoulder an increasing burden of proof. Such attempts to validate the natural order examined and manipulated by science constitute the completion of a “vicious circle,” according to Arendt, for “scientists formulate their hypothesis to arrange their experiments and then use these experiments to verify their hypotheses; during this whole enterprise, they obviously deal with a hypothetical nature” (261). It is worth noting that “Newton...disliked hypotheses, by which he meant explanatory propositions which were not immediately deduced from phenomena.”⁸²

For modern science, success is the trademark of truth, irrespective of its ability to be expressed in everyday language, or truly comprehended by the scientists themselves. “The thinking of our science,” said von Weizsaecher, “proves itself only in action, in the successful experiment.” Gadamer stated “that science not only does not think...but also does not speak a language in the proper sense.”⁸³ Cooper contends that science and technology have pried open the ground of appearance, not in order to apprehend substance, but to account for appearance by numerical description. But, “human being is fitted both for phenomena and for substance so that the results have been perplexing. The consequences of combining abstract scientific phenomenal assumptions and technological

activity is that we are unable to understand, that is, to think and to speak about things, that nevertheless we do.”⁸⁴

Democritus is most widely remembered for his portrayal of the opposition between the mind and the senses. He addresses the mind: “Poor mind, from the senses you take your arguments, and then want to defeat them? Your victory is your defeat” (368). Arendt finds in the separation of Being and appearance the fulfillment of Democritus’ prophecy, but adds that “now the readings of instruments seemed to have won a victory over both the mind and the senses” (250). Arendt, following Heisenburg, asserts that we now live in “a universe of whose qualities we know no more than the way they affect our measuring instruments” (237). In Eddington’s words, “physics studies not these inscrutable properties [mass, extension, duration, etc.], but pointer-readings which we can observe. The readings, it is true, reflect the fluctuations of the world-qualities; but our exact knowledge is of the readings, not of the qualities. The former have as much resemblance to the latter as a telephone number has to a subscriber.”⁸⁵ The qualities that are measured are accidental rather than essential qualities. With the victory of the instrument over the mind and senses, those essential qualities of the universe which are not easily recreated and measured—which correspond the real qualities of the telephone subscriber—can no longer be apprehended by the human mind.

Modern science and technology have exponentially increased humankind’s ability to fabricate and to act, so that today what is commonplace was beyond even the imagination of earlier generations. But this development makes the nightmares of the modern age stand out in even sharper relief; it makes even more apparent the problem that humankind is working not with nature but with the products of the mind, so that the

products have all the same idiosyncrasies and limitations as the mind itself. The proof of modern science—success—isn't surprising, since "the world of the experiment seems always capable of becoming a man-made reality..." (251) Modern man has ostensibly used this power to reconfigure material to his own advantage, witnessed by the human artifice and the endless satisfaction of human needs.⁸⁶ But he cannot fabricate what all ages before him could experience, namely the experience of that which he is not. The problem lies in the way *res extensa*—nature and the universe—is portrayed in the modern and scientific physical world view. This world view, which demands "principles which man can translate technically into a working reality" simply "lacks all possible representation" (261). Without any kind of image or representation, neither linguistic, symbolic, nor conceptual, humankind finds that nature and the universe are fleeting realities, present but never quite grasped. Human experience remains trapped in the prison of the mind. It seems that the new world view jeopardizes the close relationship between thought and sense experience, a relationship crucial to the human condition.

Arendt reminds us that there have always been things about which humans know but could not form images—her example is the soul—which were recognized as unimaginable. What is entirely new is the status of the world we see. Previously, we represented the material world to ourselves, and used it as to measure those things we could not represent. In the modern period, the visible material world has joined the ranks of the unimaginable things. Once the visible world disappeared, the transcendent world ceased to be an alternative, and without this alternative there is no way to transcend the visible world by thinking. According to Schrodinger, the new material universe is not only "practically inaccessible but not even thinkable," for "however we think it, it is wrong; not

perhaps quite as meaningless as a ‘triangular circle,’ but much more so than a ‘winged lion.’”⁸⁷

With the modern scientific assumption that nature and Being do not appear of their own accord, it follows that the universe is beyond any human representation, and even beyond pure reason. With a universe that is both unimaginable and unthinkable, it is not surprising that modern humans have taken refuge in the mind, in doubt, and in the security of what they make themselves.

The reversal of contemplation and action is the watershed in Arendt’s critique of the modern period. “Perhaps the most momentous of the spiritual consequences of the discoveries of the modern age and, at the same time, the only one that could not have been avoided, since it followed closely upon the discovery of the Archimedean point and the concomitant rise of Cartesian doubt, has been the reversal of the hierarchical order between the *vita contemplativa* and the *vita activa*” (262). This statement, which underlines the importance of the reversal, draws a close relationship between it and the dominant ideas which preceded it. In the context of Arendt’s understanding of the movement of history, her assertion that the reversal “could not have been avoided” is a comparatively strong statement.

Behind Arendt’s description of the reversal of contemplation and action was what Arendt calls a “fundamental experience” that “man’s thirst for knowledge could be assuaged only after he had put his trust into the ingenuity of his hands” (263). This experience exemplifies the radical change in the arrangement and relative dignity of human capacities, a change which underlies the development of the modern period and informs Arendt’s analysis. In the modern period, human beings continued to thirst for knowledge,

but the character of and expectations for knowledge had changed, and from this point forward it was assumed that it could be attained only through action. Contemplation, with no place in the new epistemology and no access to the transcendental realm, quickly disappeared.

The telescope, an instrument created by the hands of men, was at the centre of the reversal. It seemed that this clever device had caught nature unaware, and stripped her of some of her celestial secrets. The success of the telescope in actively solving some of the age-old human questions led to a reevaluation of *making* and *doing* over and against *contemplation* and *observation*.⁸⁸ With the sundering of being and appearance, truth was no longer expected or allowed to appear of its own accord; it could not “reveal and disclose itself to the mental eye of a beholder” so “there arose a veritable necessity to hunt for truth behind deceptive appearances” (263). This hunt is the project of modern science. With the stunning early successes of this hunt, the traditional contemplative approach to nature—which was passive and speculative—was quickly discredited and forgotten. From this point forward, it was assumed and acted upon that all knowledge, if it was to be certain, had to be achieved by doing, by *making sure*. Arendt finds two conditions implied by this new standard of knowledge. One is that knowledge concerns only what one makes, so that ideal knowledge is mathematical, as math involves only that which is mind-made. The second condition is that the character of knowledge allows it to be verified only by further doing.

With the separation of being and appearance, philosophic truth and scientific truth also began to drift asunder. Both truths claimed to be eternal, but science had taken the audacious step of no longer requiring that truth be intelligible, that is, amenable to human

reason. Depicted by Arendt, this step seems to be a necessary implication of the modern revolution, but several generations had to pass before “the human mind grew bold enough” (264) to acknowledge this odd implication. The reasons for it are straightforward: If the universe and nature have their origin in God or in natural forces, and if the human mind has resigned itself to the ‘fact’ that it cannot know that which it did not make, then there is no reason to think that human beings can know and truly understand anything at all about nature. Of course, humans are clever, and through their ingenuity and industriousness they are able to locate, measure, and reproduce almost any natural process. Incredibly, they can do all this without ever understanding the process in terms of reason; the process lacks intelligibility.

We know from numerous widely-publicized implications of modern subatomic physics that our natural world—as it is construed by modern physics—works in ways that not only lack intelligibility, but seem almost spiteful of reason. If we look to other well-known rejections of reason, we find that “no supposedly suprarational divine revelation and no supposedly abstruse philosophic truth has ever offended human reason so glaringly as certain results of modern science” (264). Today we know that particles can be in two places at once, or no definite place at all, or arrive at a destination before having actually departed. All the problems are attributed to the “wierdness” of the subatomic world, and not to the modern human way of approaching it and construing it. Alternatively, we can agree with Whitehead: “Heaven knows what seeming nonsense may not to-morrow be demonstrated truth.”⁸⁹

The reversal of contemplation and action was not a reversal *tout court*. More precisely, the reversal was between thinking and action, while contemplation ceased to be

part of human experience. Traditionally, contemplation was conceived as the beholding of truth, and thinking was the primary and surest route to the contemplation of truth. Arendt traces this conception of thinking back to Plato (and possibly Socrates), who described it as *eme emauto*, or an “inner dialogue in which one speaks with himself” (264). This dialogue cannot be witnessed externally, and it requires the body to be at rest and the mind to be free of other thoughts, but it is by nature *active*. Although the body is at rest, thinking is an active dialogue, while contemplation is a passive and perfectly calm beholding of truth. Armed with this distinction, Arendt contends that the medieval scholastic understanding of philosophy as the handmaiden of theology could be justified, even to Plato and Aristotle. Both philosophers conceived of the internal dialogue as preparation for and advancement towards the state in which the human mind and soul experience truth—“a truth that is *arrheton*, incapable of being communicated through words, as Plato put it, or beyond speech, as in Aristotle” (265).

Traditionally, the *vita activa* was valued by the degree to which it made possible the *vita contemplativa*. The reversal of these two categories was not so simple that the opposite became true; today the *vita contemplativa* is not carried out to make possible the *vita activa*, in fact, it is not carried out at all. Contemplation has lost all meaning, while thinking, which had traditionally served contemplation, was put into the service of action. Just as thinking had been “the handmaiden of contemplating divine truth in medieval philosophy and the handmaiden of contemplating the truth of Being in ancient philosophy” (265), it became the handmaiden of the *vita activa* in the modern period.

Cooper points out that the reversal was a substitution, which is different and inferior to a replacement.

The reversal of contemplation and action has often been overlooked or relativized by comparison to the frequency of reversals in the history of Western thought. Beginning with Plato's requirement of the *periagoge*—the turning around of the philosopher, most clearly witnessed in the ascent from the Cave, which turned the Homeric world order on its head⁹⁰—there has been a series of reversals in Western thought. Once Plato overturned the previous world order, it became possible to reverse the metaphysical order at any point in history, without an impetus from the world of events, or indeed even a change in metaphysics itself. Plato's original reversal set out the conceptual patterns into which the ensuing traditions of philosophy and politics almost always fell. Arendt contends that academic philosophy "has ever since been dominated by the never-ending reversals of idealism and materialism, of transcendentalism and asceticism, of realism and nominalism, of hedonism and asceticism, and so on... the concepts themselves remain the same no matter where they are placed in the various systematic orders" (266). With the possibility of a reversal in thought—a purely intellectual experience—irrespective of a corresponding reversal in the world of events, the former occurred frequently. Arendt cites the philosophical schools of late antiquity, as well as Christian philosophy, Marx, Hegel, and Nietzsche, as players in "the same tradition, the same intellectual game with paired antitheses..." (266)

The frequency of intellectual reversals in Western thought has obscured the radical novelty of the reversal of contemplation and action. This new reversal is categorically different from the previous reversals, because its origin lies in the world of events rather than the world of ideas. It was not the consequence of an intellectual experience, but rather of the three great events which ushered in the modern period. These events (the

Reformation, the mapping of the planet, and in particular Galileo's discoveries) were radically new; they had a kind of novelty that no idea can ever achieve. The ubiquitous modern conviction that Being does not appear to human beings, and that "objective truth is not given to man" (266) is not the result of a popular revival of skepticism, but is a consequence of Galileo's discovery and the ensuing conclusion that humans can only know what they make. Arendt notes that this conclusion leads to either still more activity or to despair.

What is more, the introspection and loss of the world so characteristic of philosophy after Descartes is of a different nature than the traditional skepticism which made philosophers suspicious of their world and other people's opinions of it. The crucial difference is that unlike traditional philosophy, where the thinker turned from the material world of becoming and deception to the realm of timeless truth, the modern philosopher flees from both, and hides in his own mind. Hiding in his mind, he finds not a timeless idea or image to behold and contemplate, only an endless stream of sense-perceptions and the flux of his own mind. All this stems from Descartes and the other early modern thinkers, whose "introspection discovered consciousness as the inner sense with which one senses his senses and found it to be the only guaranty of reality..." (267) As a result, modern philosophy has been the most successful when it has banished the eternal world and the material world and has remained in the realm of the mind. Through introspection, the processes of sensory perception, cognition, and psychology have been investigated and understood in unprecedented ways. Arendt believes that the possibilities of the Cartesian method of introspection were finally realized by men like "Pascal, Kierkegaard, and Nietzsche," so that "one is tempted to say that philosophers have experimented with their

own selves no less radically and perhaps even more fearlessly than the scientists experimented with nature” (267).

The mode of action which played the most crucial role in the early modern reversal of contemplation and action was work, the mode of *homo faber*, the creature who is ultimately concerned with making, fabricating, and doing.⁹¹ *Homo faber* is responsible for building the things of the world, and in the modern era his ability to build the tools of science was especially important. The centrality of man as tool-maker is witnessed in each of the three great events which ushered in the modern period, and in particular in the origin and development of the new science. It was a man-made device, the telescope, that was the precedent to science, Cartesian doubt, and the modern revolution that followed. Over the centuries, the advance of science had become increasingly connected to the advance of the tools of science, that is, scientific instruments and technology. “From the start, experimentally produced truth depended on human productive capacities.”⁹² Some of the early discoveries of the new science, such as Galileo’s famous studies of falling objects, could have been conducted at any point in history; all that is required is the assumption that truth can be found through experimentation.

Even more central than instruments to the rapid rise of *homo faber* was the scientific experiment, which by definition involves making. The experiment recreates natural processes under specific conditions and with predetermined methods of observation, all the time depending on *homo faber* to recreate the processes and provide the instruments for measuring. The structure of the experiment is a result of the modern conviction that one cannot know what one has not made, the scientific corollary of which is that if one wants to know the “other” one must recreate, imitate, and measure the

processes by which it came in being. Arendt refers to the “much-discussed shift of emphasis in the history of science from the old questions of “what” or “why” something is to the new question of “how” it came into being” (269) as symptomatic of this modern conviction. The corollary, again, is that “how” questions can only be solved through experimentation, which is radically process-oriented.

What was at stake in the revaluation of contemplation and making was the identity of the highest human activity. This revaluation, which was at the centre of the modern reversal, was based on what Cooper calls “the by no means self-evident assumption that one human preoccupation must inform and order the whole human existence.”⁹³ The assumption is not uniquely modern; Arendt finds “the assumption that the same central human preoccupation must prevail in all activities of men” to be also present in the traditional hierarchy, since it was thought that “without one comprehensive principle no order could be established” (17). And while it seems that some kind of normative hierarchy informs Arendt’s critique, she avoids siding with either the traditional or the modern hierarchy. What she does say is that the ultimate concern of the *vita activa* is different than, but not superior or inferior to, the concern of *the vita contemplativa* (17-18).

Contemplation and making both owed some of their dignity to their shared ability to stabilize the unpredictable element in action. This was achieved in contemplation by its relationship to the Eternal, while making created objects which served as monuments to all future generations. What is more, making involves a certain type of Platonic contemplation: when a worldly object is designed, the designer (*homo faber*) contemplates a universal pattern from which to model his or her own design. For Cooper’s understanding of Arendt, neither these affinities between contemplation and making, nor

the reliance on tools and measuring instruments, were crucial to the modern reversal. He locates the reversal, and especially the downfall of contemplation, in the structure of the scientific experiment with its characteristic emphasis on process.⁹⁴

In the early modern period, nobody, not even the scientists, could have anticipated the extent to which human beings would learn to create nature. Today new atomic elements and new life forms are common fare. In its radical way of achieving and constructing knowledge, the experiment has always contained the standpoint necessary for its modern success. Arendt characterizes the standpoint like this: the scientist “approached [nature] from the point of the One who made it, and this not for practical reasons of technical applicability but exclusively for the “theoretical” reason that certainty in knowledge could not be gained otherwise...” (269)

The implication of the shift from the questions of “why” and “what” to ones of “how” is that the knowledge to be attained is no longer of eternal things but of repeatable processes, and that “the object of science therefore is no longer nature or the universe but the history, the story of the coming into being, of nature or life or the universe” (270). Arendt finds the origin of historically oriented disciplines⁹⁵ to precede and anticipate modernity’s unprecedented historical consciousness. The assumption engendered by these disciplines, that humans are capable of knowing things only in their development, compounded with the conviction that humans know only the processes they make in the experiment, led to the conclusion that “all particular natural things derived their significance and meaning solely from their functions in the over-all process” (270). This is the basis of a momentous historical shift in which the concept of Being was replaced with a concept of Process. The change from thinking of things as stable entities to thinking

about things as snapshots of fluctuations is a change which exacerbates earth alienation. According to Cooper “all things are in movement...all is process and change. The perplexing aspect of this modern kind of change is that it does not appear to take place within a stable framework” and that “modern technology has obliterated the world by destroying sentiments of stability and meaning and replacing them with those of process and function.”⁹⁶ D’Entreves agrees that the processes “devour...the solid objectivity of the given.”⁹⁷

Arendt finds in Vico a perfect expression of the modern conviction that one can know only what one has made. She scrutinizes the development of his thought, and finds that he came to abandon nature and attempted to ground knowledge in the products of humanity. His twofold realization that God makes nature and humans make history turned him away from the natural sciences and towards history, for in the history of humankind one deals exclusively with the products of human action. With history, it finally possible for Vico to say that truth was produced by making (*verum factum*).

It might be expected that the victory of making would result in the victory of *homo faber*. In fact, it undermined his activity and lead to his substitution. Without the possibility of contemplation, *homo faber* was deprived of the “quasi-contemplative apprehension of permanent and fixed standards” (275) that had guided him. These permanent standards had been the reference point which allowed him to judge; without these standards he was without direction. In the later modern period, *animal laborans* ascended to the rank of the highest esteemed human activity. Labour, which is the activity closest to nature, attained unprecedented dignity, and as this occurred humans lost the feature which made them human, artificial and worldly. As modern humans lose

themselves in the activities which correspond to nature (labour and in the modern economic production process), they are truly going back to nature. In the late stages of a labouring society, no real thought or decisions are required, and the labourer takes on a “dazed, tranquilized, functional type of behaviour” (295). Arendt wryly notes that the real danger of theories of behaviourism is that they may actually contain an element of truth.

Conclusion

Arendt's crucial chapter, "The *Vita Activa* and the Modern Age" contains descriptions of the characteristic elements—world alienation, science, and doubt—of the modern world. She describes the conceptual consummation of these elements as the reversal of action and contemplation. In this crucial chapter all of Arendt's main concerns converge, and this can be problematic. With the exegesis of the elements of modernity finished, we can move on to problems that have arisen and their implication for Arendt's broader project.

Many parts of Arendt's critique belong to what has become the standard critique of the modern period. The *Collins Dictionary* states that the Renaissance is "usually considered to include intensified classical scholarship, scientific and geographical discovery, a sense of individual human potentialities, and the assertion of the active and secular over the religious and contemplative life."⁹⁸ Despite these areas of concordance, parts of Arendt's critique are highly unusual, such as her tripartite division of the *vita activa*, and her use of this division to distinguish between historical epochs; both of which are highly effective in characterizing modernity. Her understanding of worldliness, alienation, nature, action, and freedom are other places in which she diverges from established lines of inquiry and presents exceedingly novel reinterpretations. Her final chapter, entitled "The *Vita Activa* and the Modern Age", is the most ambitious but most problematic part of her analysis.

Wishing to establish the origins of modern science in the telescope, Arendt calls it "the first purely scientific instrument ever devised" (226); in fact it was a Dutch spyglass

adapted for celestial observation. The structure of her argument put far too much weight on the telescope, a weak link in her argument. Her extraordinary stress on telescope fits the direction of her analysis, but one cannot help but wonder how the telescope could have created a “huge shock” if the *intelligentsia* had its attention focused on the exposition of falling bodies, and the rest of the populace on distant lands and the Reformation?⁹⁹ The telescope was hardly noticed—it was just another instrument; but at the same time, it is claimed to have created a profound change of mood throughout the West.

In addition to the telescope, she cites the Reformation and the exploration of the earth as the “three great events” at “the threshold of the modern age” but, why these? These events were not unprecedented. Systematic human exploration of the earth was common by the time of the ancient Egyptians, and no epoch has lacked its famous explorers. As for the Reformation, there had been a previous division and numerous schisms in Christianity. Nor have inventions ever been in short supply. What, then, makes the telescope unique? Galileo’s observation of the heavens was certainly a step forward in science, but there are more likely candidates—Copernicus’ heliocentrism and Tycho’s unsuspected comet spring to mind—deserving the distinction of being the event which foreshadowed the modern worldview. And as an event, is it categorically different from other occurrences? Why would a telescope affect the minds of its age the way it did? It would have been more reasonable to wonder, as Cooper does, “if Galileo’s telescope was an improvement on unaided sight, what would improved telescopes reveal? New truths? Then Galileo had simply revealed another error by revealing a temporary truth.”¹⁰⁰ If Cartesian doubt of the senses is as ubiquitous as Arendt claims, how did the telescope escape its reach? The telescope still served amplified bits of the heavens up to the same

'erroneous' vision. The telescope did not deprive the eyes of their purpose; anyone who has used a telescope knows that in fact the telescope makes the eyes work even harder. Finally, the event which Arendt puts forward as categorically new actually consisted of details added to pre-existing facts. The existence of the moon was never doubted; Galileo simply observed features on its surface. Jupiter and Saturn had been observed for millennia; Galileo simply showed the existence of Jupiter's four largest satellites and Saturn's rings. These are interesting details, but are not massive events with the power to turn the world on its head. By her own definition events must be unprecedented and unpredictable (235-6), and Arendt has not convincingly distinguished the "three great events" from obvious precedents. Nor has she explained how the three great events could affect the human mind so dramatically. Burtt, to whom Arendt often refers, is more convincing in this respect. He claims that late medieval Europe was prepared for the modern revolution by exposure to foreign and ancient worlds. Arendt perhaps avoided this claim out of her desire to place all novelty on events and to deny ideas causal power; but without this kind of claim, she is left with a link missing from her account. Of course, these criticisms are not intended to undermine Arendt's of modernity, but rather to point to the problems which arise for every historian who attempts to locate novelty—the birth of an epoch—in a few specific events.

Arendt's critique of modern algebra suffers from the similar problem . Her general observation that algebra reduces complex terrestrial phenomena to terms which are amenable to mathematical treatment is on the mark, but a similar type of reduction is the basis of any language or symbol system. Mathematicians were not trying to misconstrue phenomena, they were trying to explain motion, gravity, and other new concepts which

had never been explained in mathematical terms. Earth alienation might be observable in a philosophized account of algebra, but the mathematicians were simply describing what could not be described in traditional mathematical language. Arendt is correct to notice that at this time, public truth began to be explained and established in mathematical language.

The history of physics which informs Arendt's critique has been identified as idealized and misleading. According to Tijmes, Arendt has studied Heisenberg's *Das Naturbild der heutigen Physik*, but she projects his characterization of twentieth-century physics upon the physics of the entire modern period.¹⁰¹ The developments of the early modern period involved a departure from explanations involving God, and then man himself. Details of nature were separated from their connections, and given mathematical treatment and explanation. This can be characterized as an attempt to describe nature objectively. Nature was believed to operate according to strict laws, irrespective of man's intervention and witness. Only in the twentieth century did all this change, when it became evident that man's intervention, his observation as such, disturbs and changes the object of observation. Man is an actor, not a spectator; what can be objectified in this encounter is only man's knowledge of the object. It is in this sense that, as Heisenberg aptly put it, "man encounters only himself". Arendt ignores these changes, and finds the birth of the twentieth-century astrophysical worldview in Galileo.

One of the most polemical and radical assertions made by Arendt is her claim that events, and not ideas, drive history. In doing so, she explicitly takes an extreme position against Hegel's concept of *Zeitgeist*, and historical idealism in general. What appears strange at the outset—that Arendt would build nearly all of her critique of modernity and

understanding of history on such a radical and contentious foundation—turns out to be a foundation that is compatible with her interest in bestowing dignity upon action. Her emphasis on events and great actions allows the *vita activa* to be autonomous, free from the disapproving judgement of the *vita contemplativa*. In addition, this contentious foundation has powerful explanatory powers, witnessed by Arendt's ability to posit an origin and describe so many strands in the development of the modern period. However, the convenience with which it fits Arendt's interests calls attention to it, and opens it to scrutiny.

The opposition of events versus ideas¹⁰² has several analogous oppositions in "The *Vita Activa* and the Modern Age,"¹⁰³ including Arendt's two types of analysis, and the *vita activa* versus the *vita contemplativa*. What is more, Arendt describes events as they appear, in an empirical manner, yet she conceptually organizes them in a normative fashion. Arendt is writing about the political nature of history, which is always "a story of action and deeds rather than of trends and forces and ideas," (165) but she is also writing about ideas. These oppositions create a space for extensive description, but also increase the possibility of distortion.

Arendt asserts that events, not ideas, drive history. Yet doubt is an idea or concept or mental predisposition, as are the modern reversal, distance, alienation, universalization, and the new physical world view, all of which seem to play roles in the development of history. What is the status of an idea? In Arendt's scheme, ideas cannot act as causes but they are still caught up in an historical development in which they play a role. An example of a specific problem arising from this scheme is Galileo's discovery. It did not fall out of the sky, it was no accident; he *searched* out the night sky because he wanted to know, and

he believed *action*, especially instrument-mediated perception, could lead to knowledge about nature and the universe. His instrument had been previously modified for precisely this encounter with nature. Galileo's mental predisposition—a constellation of ideas, assumptions and experiences characteristic of the modern worldview—led him to believe that knowledge could be attained through this kind of encounter. The idea preceded and led to the event; the event was predictable, and lacked novelty. This does not settle the wider argument of events versus ideas in the movement of worldly history, but it does demonstrate that Galileo's "great event"—which lies close to the centre of her critique of modernity—does not qualify as an event¹⁰⁴ according to Arendt's own definition.¹⁰⁵

Related to the opposition of event versus ideas is the question of the status of the modes of the *vita activa*. Labour, work, and action are worldly activities, but Arendt is concerned with the way they have historically been understood, conceptualized, and related to one another. She is writing about worldly activities, but in a way that spans the distinction—a distinction she relies upon—between the world of ideas and the world of events. By spanning the distinction, Arendt ostensibly strengthens her critique and produces legitimate benefits, such as the ability to write about both "worlds" at once, and so to account for the diverse consequences of world-turning events. A second and related benefit is the concrete character of any discussion of ideas which has as its foundation a corresponding discussion of the worldly activities; in Arendt's case this is achieved in her discussion of the modes of the *vita activa*. Finally, it permits her to write an apology for political action in the face of the new social scientific understanding of human organizations and activities.

A further question which must be asked is “What is the status of Arendt’s text itself?” It is not the product of labour, work, or action. Admittedly, with its elegant argumentation and erudite historical accounts, the creation of this text included an element of work, in the sense of making. We also know that Arendt took part in political action out of necessity before and during the Second World War. But *The Human Condition* is not the product of work or action, it is the fruit of thought, that is, the modern vestige of contemplation. Once again, the *vita activa* is—and despite Arendt’s efforts, perhaps must always be—judged by the alien criteria of contemplation.

If it is granted that the legacy of Galileo and Descartes lives on in the intellectual community, can we really go further and assert that the legacy lives on in wider society? Arendt qualifies her assertion by claiming it is not Cartesian philosophy but only doubt that lives on, as an implication of the modern world view (252). But do men and women today doubt their senses, or even the accuracy of their senses, in the course of their daily lives? The answer to this question is an unmitigated “no”, in contradiction to Arendt’s claims for the “close relationship of the modern mentality with philosophical reflection” (271). Daily trust in our ability to apprehend physical reality still holds; in fact the often naïve faith in the given is so persevering we might call it a feature of human nature. Descartes perhaps gave doubt a particular form, but there’s nothing new about doubt *per se*, and it is highly tenuous to imply that there is a distinction in history between an age of belief and an age of doubt. What about Antisthenes and the Greek cynics? Or Pyrrho and the various schools of skepticism? Augustine can be added to the list of thinkers who considered the possibilities of doubt and the *cogito*.¹⁰⁶ Latin *scepsis* continued to be in common usage through the medieval period. Arendt relies on an unstated distinction in

history of doubt, but she does little to justify the distinction. The sudden awakening of doubt in Descartes is hardly convincing, and it is historically groundless (250-1, 263).

Leah Bradshaw, the author of a recent book on Arendt's political thought, sees in Arendt's account of contemplation and action an attempt to account for the autonomous dignity of political action, a dignity not dependent upon the standards of the contemplative life.¹⁰⁷ This is important because it suggests that for Arendt neither the modern nor the pre-modern hierarchy is the proper arrangement. Nor are the hierarchies merely relative; according to Bradshaw, there is a normative arrangement informing Arendt's critique which allows Arendt to judge both hierarchies at once.

In *The Human Condition*, Arendt is critical of both the modern hierarchy of the active and contemplative lives, and the hierarchy of the modes of action. Political action has long since lost its might, exacerbated by the shrinking of the public space, the rise of the social, and the ascent of first work and then labour. The criticism up to this point indicates that she has a normative hierarchy in mind, that is, a correct configuration of the modes of human activity which allows her to judge and compare. Despite her approval and use of innumerable Greek categories, Arendt is almost equally critical of the Greek hierarchy, at least in the form it was given from Plato onwards. Her criticism of the Platonic formulation lies in the way it deprived political action of its greatness by injecting it with an element of making. Plato feared the boundlessness and unpredictability of politics, and due to his suspicion and rejection of statesmanship, he ended the era of great political deeds. Plato stands at the beginning of a long line of Western political and philosophical thinkers who had little faith in political action, eschewed political life, denied its dignity, and undermined both its greatness and its boundlessness. Of course, Plato and

Aristotle held lawmaking and city-building in high esteem; they were the highest activities of political life because they were akin to craftsmanship, and as such were highly reliable. It was precisely the unreliability of political action coupled with its terrible power that led Plato and Aristotle to inject it with the stability of making, and deprive it of its boundlessness.

Christianity was “disastrous” for political action for the same and for different reasons than was the Greek philosophical tradition. Arendt locates the source of this disaster in the Christian reversal of the Classical antithesis of an undying cosmos and mortal human beings. Previously, politics had derived much of its drive from human aspiration for worldly immortality, but the drive faded when this path to immortality was rendered obsolete by a new path to individual immortality. Of course, for Christians, earthly life was still an important preparatory step towards heavenly life. What is more, the sacred nature of earthly life in Christianity never degenerated into an exaltation of the labour that makes it possible. The virtues of the *vita contemplativa* were extolled during the Christian period, especially within the various monastic traditions. The frailty and impermanence of all worldly things, especially worldly fame and institutions, were highlighted by the fall of Rome. For these reasons, the Platonic hierarchy was relatively untouched during the Christian era.

Given her criticisms of the ancient, medieval, and modern hierarchies, what then is the normative hierarchy for Arendt? What is the highest human capacity, and how should human life and thought be ordered around it? What is the correct configuration of human activities? How can they be fit together in a way that creates a public space for political action, and prevents the distortions inherent in the worship of work or labour? These

questions are difficult ones, made more so by what Leah Bradshaw identifies as Arendt's resistance to "the idea that there is a transcendent object of contemplation from which affairs of the world are judged..."¹⁰⁸ Without a transcendent reference point accessible through contemplation, it can only be in thinking itself that the world can be transcended. What has Arendt discovered, through thinking, that allows her to locate the problems inherent in the hierarchy of each epoch?

To state the question another way, how is it that Arendt can criticize the underestimation of the *vita activa* in the Greek and Christian traditions, and at the same time criticize the modern supremacy of work and then action? Not only Bradshaw, but Paul Ricoeur also finds this to indicate the existence of a normative hierarchy for Arendt; in Ricoeur's words, Arendt's judgement must be "ruled by some enduring teleological constitution."¹⁰⁹ Ricoeur finds Arendt's hierarchy on the first page of her analysis, where she states that each of the three fundamental activities of the *vita activa* correspond to "one of the basic conditions under which life on earth has been given to man" (9). Labour corresponds to life, work to worldliness, and action to plurality. While Ricoeur is correct in drawing attention to this statement, it surely does not express Arendt's hierarchy, but rather the naturalness of her distinctions. Arendt wants to judge and distinguish between the modes of the *vita activa*, but not from the traditional standpoint, that is, the standpoint of the *vita contemplativa*. We still do not know the origin of her normative value. It is possible she derives it from pre-Socratic Greece; this possibility is supported by her respect for Achilles' great deeds. However, Arendt does not explicitly endorse the hierarchy of human capacities of this age, perhaps because the *vita contemplativa* had not yet produced its finest fruits.

Arendt's formulation and use of the term "nature," which began in *The Origins of Totalitarianism* and is fully developed in *The Human Condition*, is not compatible with one of her lines of inquiry. On one hand, modern human beings cannot encounter anything which they have not fashioned themselves; they are too artificial. On the other hand, the victory of labour has meant that moderns are slaves to necessity and natural processes; they are too close to nature. In the structure and success of modern science, humanity has become master over nature, but in the success of modern means of production with its inflation of household duties (and its dependance on labour), humanity has become enslaved to nature. Are we too natural or too unnatural? The two trends in Arendt's writings are not compatible.

There is a further problem in Arendt's definition of nature. Her claim that nature is the realm of stable matter, sheltering life from cosmic processes, is incorrect. The development of life on the planet—the evolution of species, which is believed to culminate in *homo sapiens*—is dependant on genetic mutations caused primarily by atomic decay, which is to say, life as we know it is a result of *unstable* matter. Humanity owes its existence to nature's *inability* to shelter us from the affects of cosmic processes which occur in both in the earth and in the cosmos.

Arendt's account of the modern age begins with a conceptual and historical analysis of the roots of Western tradition in ancient Greece.¹¹⁰ This is followed by an exposition of tradition through the Christian period, and finally the loss of tradition with the modern revolution. The strength and especially the weakness of this approach is that she is working with entire epochs. Describing historical changes by reference to massive periods is expedient, but it sacrifices critical distinctions. By referring to epochs, she can

seldom afford to account for the broad range of conceptual strands present and developing within each epoch, with their mutual tensions, fragmentation, and dissention. By the same token, her analysis misses or ignores continuities which span the gulf she has created between the epochs.¹¹¹ It is possible to agree with d'Entreves that what "Arendt offers... are broad cultural periodizations that serve as a background for the examination of some crucial categories of our experience and of the transformation undergone by each." However, we must add to d'Entreves that erroneous simplifications of the background tend to distort what is on centre stage; the misconstrual of the history of physics is a case in point. What is more, the time spans Arendt works with are astounding. The connection she makes between an unnoticed event at the beginning of the seventeenth-century and the human condition 350 years later would make even the most sympathetic historian shudder.

Pieter Tijmes shows the weakness in Arendt's characterization of alienation by contrasting it to a similar theory proposed by the German philosopher Helmuth Plessner, called eccentricity. It is Plessner's view that man has an ability to transcend his world and even himself, and in his transcendence he can be a spectator of his normal position; man is a *Doppelgänger*; he has a central and eccentric position. The crucial departure from Arendt is that for Plessner, man is double *by nature*. He has always been able to transcend himself and his environment; this ability is not a result of modernity, as Arendt would have it.¹¹² Of course, it is possible to argue that the intensity or the frequency of eccentricity grows with the discovery of the Archimedean point and the development of the scientific worldview, but if Plessner is correct, eccentricity is not a new human capacity, and insofar as it is analogous to alienation, it cannot be used to characterize modernity.

The modern reversal was “the rise of activity to an altogether unexpected and unprecedented dignity” and the concomitant “loss of traditional truth, that is, of the concept of truth underlying our whole tradition” (268). The loss of tradition which followed the reversal included a loss of the traditional concepts and categories that had made possible understanding and judgement.¹¹³ To sidestep some of the problems associated with understanding the change of concepts—concepts like making, action, and contemplation—Arendt developed a highly effective procedure, which was “first, to describe the topic; second, to show how it had been historically understood and misunderstood; third, to show how the reality to which the topic referred had been destroyed, transformed, or altered so as to account for the understanding/ misunderstanding.”¹¹⁴ The weakness of this procedure is its reliance on a series of Greek categories which, despite Arendt’s historical understanding, may not be true to modern experience.

With a trace of optimism, Arendt contended that the modern loss of tradition opened up a space for thinking. Cooper, too, asserts that the modern thinker can look upon the past with “a directness and freshness”¹¹⁵ that was lacking in most premodern thinkers precisely because they were absorbed in that traditional framework. Many readers of Arendt become bogged down with the questions of the type “Has tradition *really* been lost?” Such questions arise out of a misunderstanding of what Arendt means when she uses “tradition.” Cooper explains the wrong-headedness of these questions by way of Voegelin’s understanding of tradition:

In the more differentiated conceptual vocabulary of Voegelin, the term *tradition* belonged to the category of derivative or second-order terms. It was a doctrinal symbol rather than a signifier of reality experienced. The contextual

reality within which the term was significant was historiogenetic myth, a single time line that was held to be meaningful or, in Arendt's language, a "thread." By arguing that tradition had been "dismantled," Arendt indicated (in Voegelin's terms) that the term was opaque for the reality experienced as "thinking."¹¹⁶

The opacity of tradition led Arendt back to her "conviction of the importance of making distinctions."¹¹⁷ If a prior reality—in this case tradition—can no longer be experienced in thought, a distinction must be made. The importance of making distinctions becomes especially great when there is true novelty, as in the great events of the modern age, and the totalitarianism of the twentieth century. Proper analysis requires new categories to follow from truly new events, and Arendt has cogently demonstrated that the modern age is categorically different from what came before it. She also warns against the nominalism of the modern period; we must struggle against the proliferation of a Protean universe.¹¹⁸ Success in this struggle often lies in finding the correct places to make the distinctions; like Plato's butcher we must aim to carve up the world into its natural composites.

According to Arendt's critique of modernity, the doubt that followed from the new worldview was fortified every morning and evening, when the sun rose and set, forcing humans to dethrone and relativise the self-evidence of the world as mediated by the senses. This was the specious but "certainly the most plausible" conclusion to the Galileo's discoveries, a conclusion which has become a permanent feature of the modern era. It seems that "...the ancient fear that our sense, our very organs for the reception of reality, might betray us, and the Archimedean wish for a point outside the earth from which to unhinge the world, could only come true together, as though the wish would be granted only *provided that we lost reality* and the fear was consummated only if compensated by

the acquisition of supramundane powers” (237-8). In the modern period, supramundane powers are commonplace, but the reality we have lost as payment for these powers is nowhere to be found.

The new economy and production process, made possible by the conditions produced by the Reformation, and accelerated by the clever technologies of *homo faber*, brings with it world alienation because it destroys “the things of the world”. Those things, which are a condition for human worldliness because they make up the world and span the generations, are destroyed by an economic system in which all things are quickly consumed and replaced. In addition, the exploration of the planet led to a conceptual distance between the humans and the earth. The change in economy and geographical knowledge played a part in this alienation, but in particular the abolition of the distinction of heaven and earth, and the universalization of science and the modern mind were the driving forces in this catastrophe. Modern world alienation, with “its twofold flight from the earth into the universe and from the world into the self” (6-7), has radically altered the human concept of the world. In simple terms, when the laws of the world become the laws of *any* world, the world is no longer “this world.”¹¹⁹ We might interpret or even go beyond Cooper by stating that one world cannot retain an absolute reality in and of itself. Without an eternal or otherworldly referent, there can be no world nor worldliness. With the loss of contemplation, the eternal referent is no longer accessible through human experience, and the physical world would seem to become the sole human residence. The commonly expected outcome of the loss of the otherworldly was that human life would return to what is natural and worldly. In fact, with the loss of access to the eternal, the human idea of nature and the world is changed. Given the human conditions of life and

the earth, the world continues to be the place of human residence, but it can no longer be a home.

Arendt's critique of modern science (and the implications of the scientific worldview she has identified in modern experience, thought, culture, morality, relationships to nature, and so on), although flawed in some respects, comprises an original contribution to the philosophy of science. Strangely, contemporary scholarship has widely ignored the latter contribution of *The Human Condition*, the reason for which is to Tijmes "still a riddle."¹²⁰ By bringing it out of obscurity and assessing it, the present undertaking has shown the value of what scholarship has overlooked. What scholarship generally has *not* missed is Arendt's landmark contribution to the academic understanding of the modern period, despite divergent interpretations of this contribution.

There are numerous considerations to which this study has provided the starting-point, but which are too lengthy and tenuous to be properly addressed; the reader will have to struggle with and reflect upon them without any prefabricated answers. Along the way, the reader might consider some of the following questions: What are the casualties and continuing dangers of the primacy of work and labour? What are the spiritual and epistemological consequences of an historical period which is fixated on the *vita activa* and its ostensible fruits?¹²¹ Are these fruits the source of the popular belief that modern society is the zenith of human existence? Is ignorance a necessary consequence of the conviction that absolute knowledge originates only in the scientific experiment? Is a world in which contemplation has ceased to be meaningful and the public space for action has disappeared, a world in which individual freedom has any substantive content? What is the meaning of modern progress, this massive and unprecedented project towards whose ever-

distant promise most of humankind labours? Or, as Hannah Arendt asks, “What is the meaning of what we are doing?” It is a daunting task to respond to these types of questions; yet the success of *The Human Condition* suggests that a response is both possible and worthwhile.

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- ¹ Quotations from *The Human Condition* have page numbers included within the text.
- ² Tijmes, Pieter. "The Archimedean Point and Eccentricity: Hannah Arendt's Philosophy of Science and Technology", 405.
- ³ These problems are addressed in the Conclusion.
- ⁴ Arendt often referred to Augustine's assertion that man was created so that there could be a beginning. See especially *The Human Condition*, 157.
- ⁵ Her reasons for attributing all novelty to humans will receive further attention in the final chapter.
- ⁶ Cooper, Barry. *Action Into Nature*, 145.
- ⁷ The question of the normative hierarchy is taken up in the Conclusion.
- ⁸ Cooper, 43.
- ⁹ Descartes, *Meditations*, 45.
- ¹⁰ It is important for Arendt's account that the traditional (and, perhaps, unchanging) categories are reoriented or reinterpreted, but not rendered obsolete by the modern revolution. Her account depends on numerous Greek categories in its analysis of modernity: the *vita activa* and the *vita contemplativa*, *homo faber* and *animal laborans*, *poiesis*, *praxis*, and so on...
- ¹¹ I.e. The loss of the traditional concept of truth, which made judgement and understanding possible.
- ¹² E.g. the freedom to act, the freedom that comes from human plurality, and freedom beyond arbitrary choices.
- ¹³ Her unique contribution begins with her tripartite division of the *vita activa*, and use of the division to analyse the modern age.
- ¹⁴ The world protects what is distinctively human from nature, but nature also protects human beings insofar as they are animals; nature protects the human animal from the alien ("cosmic") environment outside nature's realm. As we shall see, the human animal, whose existence and entire physiological makeup reflects the conditions of nature in which it developed, has in the twentieth century brought the cosmic into nature, risking the well-being and existence of itself and nature. What is more, the development of the modern economy has brought nature into the world, threatening the world and the worldliness of humans.
- ¹⁵ However, Arendt sometimes uses the term nature to refer to that which is earthly and organic.
- ¹⁶ Tijmes, 391.
- ¹⁷ D'Entreves 37; Tijmes 392.
- ¹⁸ The degeneration of human existence to the state of nature is complicated by Arendt's argument, found here on pages 50-85, that modern humans can know only that which they have fashioned. This complication is further addressed in the Critique.
- ¹⁹ Tijmes, 392.
- ²⁰ Today we know that nature is not stable both conceptually and in fact; this is treated in the Conclusion.
- ²¹ D'Entreves, 39.
- ²² In the case of world alienation specifically, Arendt finds the event of the Reformation and ensuing economy to be the primary factor, with the exploration of the planet and modern science also taking part.
- ²³ The problem of events versus ideas is taken up several more times, especially in the Critique.
- ²⁴ In distinction to traditional capitalism, where profits were spent on the enjoyment of worldly goods.
- ²⁵ Canovan, *Political Thought of Hannah Arendt*, 88.
- ²⁶ See page 16.
- ²⁷ *Theaetetus* 152, and *Cratylus* 385E, cited in *The Human Condition*, 138.
- ²⁸ Cooper, 136-7
- ²⁹ *Ibid.*
- ³⁰ *Ibid.*
- ³¹ *Ibid.*
- ³² *Ibid.*, 138.
- ³³ *Ibid.*, 139.
- ³⁴ *Men in Dark Times*, 13, as quoted by Cooper, 139.
- ³⁵ H. Plessner has considered this possibility; a short synopsis of his contribution can be found in the Conclusion.

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- ³⁶ Cooper, 138.
- ³⁷ *Ibid.*, 49.
- ³⁸ Galileo, as quoted in Arendt, 236.
- ³⁹ Cassirer, as quoted in Arendt 239.
- ⁴⁰ O'Sullivan, N.K. "Hannah Arendt: Hellenic Nostalgia and Industrial Society," 205.
- ⁴¹ Burt, 40.
- ⁴² Bronowski, as quoted in Arendt 240.
- ⁴³ Bellarmine, as quoted in Arendt, 236.
- ⁴⁴ Whitehead, *Science and the Modern World*, 9.
- ⁴⁵ Whitehead, *Essays*, 200.
- ⁴⁶ Cooper, 147.
- ⁴⁷ *Ibid.*, 147.
- ⁴⁸ *Ibid.*, 148.
- ⁴⁹ *Ibid.*, 112.
- ⁵⁰ *Ibid.*
- ⁵¹ *Ibid.*
- ⁵² Burt, 44.
- ⁵³ Sullivan, 205.
- ⁵⁴ *Republic*, 527b.
- ⁵⁵ *Ibid.*, 526e.
- ⁵⁶ Boyd, William. *The History of Western Education*, 35.
- ⁵⁷ The discussion of modern mathematics is taken up again in the following chapter.
- ⁵⁸ Grant, George. *Technology and Justice*, 13.
- ⁵⁹ *Ibid.*, 14.
- ⁶⁰ Cooper, 109.
- ⁶¹ *On Violence*, 13.
- ⁶² Not only scientific "theoretical" power, but military, political, and commercial power.
- ⁶³ On p. 246, Arendt gives the examples of absolute time, absolute space, absolute velocity, and absolute movement.
- ⁶⁴ As quoted by Arendt, 248.
- ⁶⁵ Russel, *Mysticism and Logic*, 46, as quoted by Arendt, 237.
- ⁶⁶ Arendt quotes Galileo here, 249.
- ⁶⁷ Galileo, as quoted in Arendt, 249.
- ⁶⁸ Cooper, 35.
- ⁶⁹ Burt, 16.
- ⁷⁰ *Ibid.*, 16, emphasis added.
- ⁷¹ *Ibid.*, 17.
- ⁷² *Ibid.*, 18.
- ⁷³ *Ibid.*, 24.
- ⁷⁴ *Ibid.*, 26-7.
- ⁷⁵ Taken from a letter Descartes wrote to Henry More, quoted in Koyre, 117, and Arendt, 254.
- ⁷⁶ Descartes, as quoted by Arendt, 255.
- ⁷⁷ Cooper, 88, with quote from The Beatles' *Magical Mystery Tour*, Capital Records, 1969.
- ⁷⁸ Whitehead, as quoted by Arendt, 257.
- ⁷⁹ *Ibid.*, 257.
- ⁸⁰ Russel, as quoted by Arendt, 243.
- ⁸¹ Arendt, *Between Past and Future*, 86.
- ⁸² Burt, 33.
- ⁸³ Both von Weizsaecher and Gadamer are quoted by Cooper, 110.
- ⁸⁴ Cooper, 110.
- ⁸⁵ As quoted by Sullivan, 224-5.
- ⁸⁶ Such satisfaction is nearly always followed by the creation of new needs.
- ⁸⁷ Schrodinger, as quoted by Arendt, *The Human Condition*, 262.

⁸⁸ Of course *observation* is a key part of modern scientific research, but its meaning and purpose, which are radically active, have almost nothing in common with the traditional meaning of the term.

⁸⁹ As quoted by Arendt, *The Human Condition*, 264.

⁹⁰ Arendt writes "Not life after death, as in the Homeric Hades, but ordinary life on earth, is located in a "cave," in an underworld; the soul is not the shadow of the body, but the body a shadow of the soul; and the senseless, ghostlike motion ascribed by Homer to the lifeless existence of the soul after death in Hades is now ascribed to the senseless doings of men who do not leave the cave of human existence to behold the eternal ideas visible in the sky" (265-6).

⁹¹ Arendt uses making, doing, and fabrication quite synonymously; while Cooper states on p. 144 that making "combines the boundlessness of action with the violence of fabrication."

⁹² Cooper, 147.

⁹³ *Ibid.*

⁹⁴ *Ibid.*

⁹⁵ The objects of study of these disciplines are known through their development. Arendt lists "geology or the history of earth, biology or the history of life, anthropology or the history of human life, and, generally, natural history" (270).

⁹⁶ Cooper, 102.

⁹⁷ D'Entreves, 51-2.

⁹⁸ Collins Dictionary, Second Edition, 1986.

⁹⁹ See pages 23-4.

¹⁰⁰ Cooper, 40.

¹⁰¹ Tijmes, 392.

¹⁰² See 273 and elsewhere.

¹⁰³ And throughout Arendt's works.

¹⁰⁴ It does not qualify as an event because it was anticipated in two ways. It was anticipated by other breakthroughs in science, and it was anticipated by Galileo himself, who prepared for the event by modifying a telescope and searching the heavens.

¹⁰⁵ There is a further problem, not unique to Arendt but present in all similar histories, and present to some degree in any account of history which supposes there is more than one day after another. This is the problem of causal language. Arendt tries to avoid this problem by using the language of precedence; she uses her strongest language when she states that Galileo's great event *determined* the course of certain events in the age that followed. Regardless of the terminology, the problem still lurks beneath the surface.

¹⁰⁶ *The City of God*, XI 26.

¹⁰⁷ Bradshaw, Leah. *Acting and Thinking: The Political Thought of Hannah Arendt*, 5-7.

¹⁰⁸ *Ibid.*, 5.

¹⁰⁹ Ricoeur, Paul. "Action, Story, and History: On Re-reading *The Human Condition*," 62.

¹¹⁰ So much so, in fact, that she has been reduced to an expression of "Hellenic Nostalgia" by O'Sullivan.

¹¹¹ This is later mitigated by her study of tradition in *Between Past and Future*.

¹¹² Tijmes, 401.

¹¹³ Hannah Arendt, "Understanding and Politics," *Partisan Review* 20 (1953): 386.

¹¹⁴ Cooper, 104.

¹¹⁵ *Ibid.*, 105.

¹¹⁶ *Ibid.*

¹¹⁷ *Between Past and Future*, 95

¹¹⁸ *Ibid.*

¹¹⁹ Cooper, 114

¹²⁰ Tijmes, 391.

¹²¹ The most conspicuous fruits being equality, individualism, ethical and epistemological relativism, and the primacy of material and technological affluence.

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