A MOMENT OF HUMAN AGENCY:
A MEADIAN RESPONSE TO
JAEGWON KIM'S REDUCTIVE PHYSICALISM

by

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Abstract

The reductive physicalism of Jaegwon Kim (2005) states that the world can be explained in terms of particles of matter and aggregates of particles of matter conforming with the laws of physics. This thesis contends that reductive physicalism cannot explain the agentic activity of people engaging within a world of social processes. This thesis employs concepts of emergence and perspectival engagement developed by Mead (1925, 1932, 1934, 1938) and extended by Martin (2006, 2007) as well as incorporating aspects of Heidegger's (1962, 1995) philosophy of world to describe and analyze a moment of human agency. The thesis also outlines some of the enabling conditions for that moment in microgenesis, ontogenesis, and phylogenesis. It is argued that human agency emerged within emergent processes that have a determining influence on the basal constituents of the physical world. The enabling conditions for a moment of human agency are inherent in an emergent world.

Keywords: George Herbert Mead, emergence, agency, physicalism, psychology, development psychology

Subject Terms: Autonomy (Psychology)

Dedication

To the imperfection of perspectival engagement and to those whose perspectives have contributed to the wondrous imperfection of my own.

Acknowledgements

There is not an idea in this thesis that has not been shaped and guided by my senior supervisor, Professor Jeff Sugarman and supervisor, Professor Jack Martin. To the extent that this thesis offers any contribution to a broader body of thought, that contribution can be directly attributed to their writings and the many hours of personal conversation I have been privileged to have with them.

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Chapter 1: Introduction

Purpose

Shortly after my classmate Saida left the classroom at break time, I noticed her notes for the European history course lying on her desk. There was a test in a couple of days. I felt that I hadn't really mastered all the material. Even so, I wanted to do well in the test. From the little I knew about Saida, I thought she would keep well organized, succinct notes. At the same time, I was aware that taking another person's property without asking was inappropriate. I saw Saida's friends sitting beside her desk and I was concerned that they may consider my coming over to her desk an intrusion. Nevertheless, I felt that Saida would understand that I just wanted to peruse the notes. I didn't think she would mind as long as I put them back. I walked over to Saida's desk and started to browse her notes.

This is a very brief description of a moment of activity in my life. It was a moment in which I attuned to the world and acted within it. I considered the perspective of Saida as well as my own. I considered the expectations of the social world and how they might be understood by my classmate, her friends, and me. I had projected myself into possible outcomes, seeing myself reading the notes, returning them to Saida, and continuing on my path to academic success. It was a moment of human agency that we can preliminarily outline as "the deliberative, reflective activity of a human being in framing, choosing, and executing his or her actions" (Martin, Sugarman, & Thompson, 2003, p. 82). It was a unique moment of experience in my life and yet one of countless agentic moments through which I have coped with and sought to engage with the world.

This thesis will investigate the enabling conditions for such a moment of human agency. The issue of human agency is hardly uncharted territory. It would be impossible in a thesis such as this to address all similar investigations in the history of human thought. One of the most compelling contemporary analyses, however, is worthy of particular attention. Jaegwon Kim (2005) concluded his book, *Physicalism or Something Near Enough*, by saying:

> The core of contemporary physicalism is the idea that all things that exist in this world are bits of matter and structures aggregated out of bits of matter, all behaving in accordance with laws of physics, and that any phenomenon of the world can be physically explained if it can be explained at all. (p. 150)

Kim (1998, 1999, 2005) does not deny the human agent's ability to reflect, deliberate, and act, but proposes that the only explanation for cognition and intention is physically reducible, causally efficacious, mental properties. Beliefs, desires, intentions, and ideas are resultant properties (Kim, 1999). According to Kim, this means that intentions and thoughts are the realization of physically caused events in the brain resulting from, and in, complex aggregates of bits of matter. He developed this argument in contrast to the view that mental properties are to some degree autonomous from physical properties.

I will argue, however, that while contemporary reductive physicalism as defined above may describe physical mechanisms of agency, it is a sufficient explanation neither for the causes nor for the history of agency, especially in the case of human agency. My intention is to develop an account of human agency that considers human agency as emergent within the relational processes through which individuals engage with the world. It is an account that coheres with the results of research in diverse sub-disciplines

of psychology and offers an emergent interpretation of that which constitutes a moment of human agency.

The Rival Position: Jaegwon Kim's Reductive Physicalism

Prior to a fuller outline of the argument that will be laid out in this thesis, it is important to understand Jaegwon Kim's position in some detail and both how it influences contemporary explanations of human agency in English speaking societies, and also approaches to psychological research and practice. Kim's (1998, 1999, 2005) work is a seminal contribution to discussions of causality and philosophy of mind that provides key counterarguments to dualism, anomalous monism, and mysterian accounts of consciousness. It has also had influence beyond the bounds of metaphysical theory, especially in psychology and related disciplines such as neuroscience. Some recent publications credit Kim's work as providing a key frame for understanding human psychology (e.g., Jonker, Treur, & Wijngaards, 2003; Palmer, 2002; Schall, Stuphorn, & Brown, 2002). For many others, the sole locus of investigation into human agentic activity is a physical or functional reduction of the brain (e.g., Anderson, 1993; Bar, 2004; Frank & Claus, 2006; Pinker, 1999; Rogers & McClelland, 2004). These works suggest neither an explicit nor an implicit allegiance to Kim's position, but nonetheless focus on the physical brain of the individual human being as the locus of explanation for human agentic activity and pay little heed to the broader processes within which the brain resides.

As Bickhard (2002) has noted, Kim's work is of profound relevance for how we seek an explanation of human agency. As we shall see, Kim specifies that an explanation of human agency must account for the basal physical constituents of an individual's

physiological constitution. Moreover, along with the basal physical constituents of energy and matter in the physical environment (such as light and sound waves), the basal physical constituents of an individual's physiological constitution (such as the atoms that constitute neural assemblies) are, in Kim's view, a sufficient explanation for agentive activity. As neuroscience becomes ever more sophisticated in the empirical study of the human brain and reducing its activity to electrochemical impulses, the application of Kim's theory might lead some to suggest that this physical reduction is indeed all that is needed to explain human agency. A person, a physicalist might say, is a physical mechanism, constructed from and reducible to particles of matter. However, my thesis will question Kim's theory and particularly his denial of emergence as an explanatory factor in human agency. In denying emergence, Kim is denying that a process, whether it be a hurricane or a presidential election, can have causal efficacy over its physical basal constituents.

Jaegwon Kim (1998) argues that the causal efficacy of mentality, by which he means cognitive properties such as intentions, beliefs, and perception, can only be explained in terms of physical reductionism. Kim's supervenience thesis claims that "physical facts determine all the facts, and the physical properties of a thing determine all its properties" (Kim, 2002, p. 640) both its intrinsic properties and extrinsic relational properties. The supervenience thesis is built on the argument for the causal closure of the physical domain. Namely, "[i]f a physical event has a cause that occurs at t, it has a physical cause occurring at t. A stronger version would go like this: No physical event has a cause outside the physical domain" (p. 642). According to Kim's thesis, if I raise my hand, the cause of this physical action also must be physical which, in this case,

would be the activity of my central nervous system. In short, “all the things that exist are physical things—either basic bits of matter or wholly made up of bits of matter” (p. 640).

For Kim (1998), the thesis of supervenience, supported by the thesis of causal closure, leads to the conclusion that mentality is an aggregate of physical particles. Mentality is entirely caused by the physical particles of its constitution and recourse to other modes of explanation is superfluous. If, for example, my belief that Saida will not mind my browsing her history notes causes me to reach for the notes, this belief is the activity of neurons in my central nervous system and this physical activity is the cause of my reaching for the notes. My belief *is* the physical activity and the physical activity alone explains my belief. In analytic terms, one would state this as follows: I have a belief that is a mental property M. This causes my action R. The supervenience base of M is the physical activity of my central nervous system P. Therefore, wherever there is M, there is necessarily P and the causal chain connects from P to R without any recourse to M. According to Kim, M = P and P is caused by the lowest level of physical matter whatever that may be.

Kim does not, however, deny the existence of belief, intention, desire, or any other mental property. He is not an eliminativist. Indeed, for reduction of a belief or intention to its physical constituents to work, it is necessary to first identify it. As Kim (1998) states: “For functional reduction we construe [a mental property] as a second-order property defined by its causal role—that is, by a causal specification... describing its (typical) causes and effects” (p. 98). For example, believing that Saida will not mind my browsing her notes is a mental property—a belief. It is the physical activity of my central nervous system, however, that causes the resultant activity, namely, my reaching

for the notes. My belief has the causal potential of making me reach for the notes and my belief is the physical activity of my central nervous system. My belief is thus a function that is identified with the physical activity and its basal constituents which, in this case, would be my brain's anatomy and its electrochemical state. In short, my belief is the electrochemical state of my central nervous system which in itself is reducible to particles of matter conforming with the laws of physics.

According to Kim's thesis, there are no ontologically emergent properties. In Kim's view, emergence is "a set of overarching quasi-scientific, quasi-metaphysical theses about the history of the universe" (Kim, 1992, p. 121). Before laying out Kim's anti-emergent argument, however, it is necessary to examine what is meant by an emergent property and provide a preliminary sketch of what is meant by emergence, a subject that will be revisited in depth later in this thesis. Emergent properties can be defined as properties that "arise out of the properties and relations characterizing simpler constituents" but are "neither predictable from, nor reducible to, these lower-level characteristics" (Emmeche, Koppe, & Stjernefel, 2001, p. 14). An emergent property, therefore, is new, rather than being simply a composite of underlying properties. While a post-hoc reductive analysis may be possible (e.g., a cell can be reduced to proteins, molecules, and atoms), the reductive analysis is an insufficient explanation for the emergent property. This is because the determining influence of an emergent property cannot be predicted as a sum of the determining influences of its basal constituents. Emergent properties can be contrasted with resultant properties. A resultant property is a property that is predictable from its lower level properties, whose causal powers can be

reduced to an aggregate of the causal powers of its basal constituents, and whose causal powers over the system of which it is a property are also theoretically predictable.

Another facet of an emergent property is downward causation (Campbell, 1974b). This means that an emergent property can have a determining influence over its own constituent parts. Campbell noted that "the laws of the higher-level selective system have a determining influence over the distribution of lower-level events and substances. Description of an intermediate level phenomenon is not completed by describing its possibility and implementation in lower-level terms" (p. 180). An illustration of downward causation might be that a neural assembly has a determining influence over the organization of neurons or that a belief has a determining influence over the neural assembly.

It should be mentioned as a brief preview that this thesis will not discuss emergent properties, but rather emergent processes. The reason is that the term *property* implies a static aspect of a system, while *process* implies a causally efficacious flow of events that characterizes an aspect of that system.

In *Making Sense of Emergence*, Kim's (1999) overall purpose is to delineate the conditions under which reduction is possible and only take phenomena that do not meet these criteria as being emergent. This leads him to conclude that the only phenomena that can meet the criteria of emergent properties are qualia: how a mental property (say, a desire) feels to the person who has that mental property. Other than qualia, all other properties of human activity, including mental activity, are caused by and reducible to particles of matter behaving in conformity with the laws of physics. Qualia may be

irreducible, but they are epiphenomenal. They have no causal efficacy over our acts. An outline of his arguments is as follows.

Kim (1999) first describes a model of reduction. If a functional property can be "defined by its causal/nomic relations to other properties, specifically properties in the reduction base" (p. 10), then it can be reduced to its basal constituents. A causal aspect of the relation refers to the physical activity of energy and particles of matter that, for example, leads to a rise in temperature. A nomic aspect of the same relation would be the increased sensation of heat felt by a human. According to Kim, a functional property may be realized in a variety of ways. Alternative basal constituents may create identical causal relations with regard to the functional property. This means that different electro-chemical configurations may underlie the same belief. Kim thus distinguishes between the realizing property which can be any particular collection of basal constituents and the functional property which is a single set of causal/nomic relations. A single functional property can be generated by any possible realizing property. Any instance of the functional property is necessarily identified with a realizing property.

Having identified the functional property, Kim (1999) proposes that it is the task of science to reduce it to its realizers and then develop a theory by which the realizers "perform the causal task that is constitutive of [the functional property]" (p. 11). Kim cites the empirical reduction of genes to DNA as a paradigmatic example of the reductive model.

Kim (1999) notes that the reductive model laid out above must answer three questions. The first is why a system exhibits a functional property at a given time. The answer is that the functional property performs a causal/nomic role which is fulfilled by a

realizing property. Anytime a system instantiates a realizing property to fulfil a causal role, a functional property is realized. The second question is whether a functional property can be predicted by causal processes in the basal constituents. Kim says that it can be predicted because the functional property is identified with its realizing property and the realizing property can be understood "solely on the basis of knowledge of the causal/nomic relations obtaining in the base domain" (p. 14). The third question is what a functional model of reduction reduces and to what it can be reduced. The answer is that a function is being reduced. Kim's model of functional reduction is a retentive model of reduction in that the function still remains, but it can be entirely explained in terms of its basal constituents. There is no matter of fact about a system having a functional property over and above the system having its basal constituents. He also states that, because a functional property can have multiple realizers, it is causally and nomologically heterogeneous. Moreover, because a functional property can have multiple realizers, a functional property can depend on heterogeneous physical laws. He concludes that "functionalization of a property is both necessary and sufficient for reduction (sufficient as a first conceptual step, the rest being scientific research)" (p. 18).

The final section of Kim's (1999) paper addresses the question of downward causation. Kim states what he considers to be the principle of downward causation. His definition of downward causation is notably different from the explication of Campbell (1974b) quoted above. For this section of the thesis, however, it suffices to lay out Kim's (1999) position. The principle of emergence, Kim claims, is "[t]o cause any property (except those at the very bottom level) to be instantiated, you must cause the basal conditions from which it arises (either as an emergent or as a resultant)" (p. 24). Kim

does not deny the principle of downward causation. He notes that we witness the downwardly causal power of resultant properties all the time. The mass (a resultant property) of Kim's celadon vase, for example, would cause the vase to shatter if thrown out his office window. There is, however, nothing new or novel in the mass of the vase nor anything that is unpredictable from its basal constituents. Where Kim takes issue is with proposals such as those of Campbell (1974b) and Sperry (1986) who contend that the organizational dynamics of the whole, whether they be the dynamics of evolutionary selection or the dynamics of a bird's wing, have causal efficacy over their basal constituents. Such proposals, Kim says, require that "[s]ome activity or event involving a whole W is a cause of, or has a causal influence on, the events involving its own microconstituents" (p. 25). However, an emergent property is physically dependent upon its microconstituents (or basal constituents as we have referred to them previously). Given that an emergent property depends upon its basal constituents at a given time for the functional property to be extant, it is not possible for the functional property to have any causal power over its basal constituents at the same moment. The basal constituents are a prerequisite of the functional property. The thesis of synchronic downward causation, in which the downward causal powers occur synchronously with upward causal powers, collapses.

This, however, still leaves the possibility of diachronic downward causation whereby a functional property at a given moment in time has causal influence over its basal constituents at a later moment. Kim's (1999) response to diachronic downward causation is that if a functional property can be identified with a realizing property, the realizing property has all the causal power necessary to account for any change at a later

moment. Thus, if a functional property is dependent on the microconstituents that entail its realizing property but is not reducible to them, as would be the case with an emergent property, it can have no causal efficacy. Kim concludes: “If emergent properties exist, they are causally, and hence explanatorily, inert and therefore largely useless for the purpose of causal/explanatory theories” (p. 33).

There is much in Kim’s (1998, 1999, 2005) position with which I concur. I agree that there are no omniscient deities, nor mysterian accounts of consciousness. It is also indubitable that there are physical and biological requirements and constraints to human agency over which the person has no conscious control (see, also Martin et al., 2003). Furthermore, I agree that there are no non-physical mental properties in the human brain and that the properties of the brain can be reduced to its realizers and basal constituents. Crucially, this thesis in no way questions the value of neuroscientific or cognitive research that seeks the physical realizers of human conduct. Such research is fundamental and central to an understanding of human psychology. The brain and its mechanisms are not, however, the entire picture of human psychology and should not be the sole focus of psychological investigation. Kim’s thesis alone is not sufficient to explain a moment of human agency. This thesis will attempt to show why.

The Position Supported by this Thesis: A Meadian Position

I will now briefly preview the response to Jaegwon Kim’s physicalism that will be presented in this thesis. It is a position that issues from the thought of George Herbert Mead (1912, 1925, 1932, 1934, 1938) and also from extensions of Mead’s work by Jack Martin (2006, 2007). Moreover, it is a position that incorporates Mead’s thought within aspects of Heidegger’s philosophy of world. In this thesis, I also incorporate results of

research and theoretical developments since the time of Mead that can be interpreted as robust support for his theories and that extend them in ways that were not available to Mead the best part of a century ago. As such, this thesis presents a position inspired by Mead's ideas rather than a position that can be directly and entirely attributed to Mead himself. Such a position will be referred to as a Meadian position.

A Meadian position coheres with Kim's position in several respects. The bio-physical aspects of human agency, especially the central nervous system, are fundamental to agentic activity. Mead (1903, 1912, 1934) understood that light and sound exert influence on us only as waves that reach the eye and ear and that "the whole world can be stated in terms of what goes on inside of the organism itself" (1934, p. 38), that is, as the activity of the central nervous system as it responds to the physical impulses with which it connects. The bio-physical constitution of a moment of human agency is disputed neither by Jaegwon Kim's reductive physicalism nor by a Meadian account of emergent processes. Nor is it disputed that a living organism is a bio-physical object comprised of physical basal constituents (Mead, 1932). Furthermore, Mead (1903), like Kim, maintained that physiological features are a necessary part of a description of human agency. Mead's (1903, 1934) thought is consistent with the idea that the physical realizer of a mental property can be identified with the mental property.[1] In accord with Mead, this thesis will draw no distinction between an individual conscious human agent and his or her central nervous system. "We do not want two languages, one of certain physical facts and one of certain conscious facts" (Mead, 1934, p. 39).

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[1] Mead (1903) refers to psychical states which encompass a more general state of mind than specific, functional mental properties, such as a particular belief referred to by Kim (1999). However, if Mead considers a psychical state to be identifiable with its physical realizers it is a safe inference that he would consider Kim's mental states to also be identifiable with physical realizers.

The dispute is with Kim's (1998, 2005) proposal that human agency can be explained solely in terms of its physical reduction. Along with Mead, I argue that there are social processes within which a human agent relates to the world and that the central nervous system—the physical constitution of a human agent—actively moderates these processes. As has already been noted, Mead (1934) believed that "the whole world can be stated in terms of what goes on inside of the organism itself" (p. 38). However, as Mead immediately continued to say, we cannot make an "arbitrary cut" (p. 38) and explain human agency in terms of the central nervous system alone as this would not take into account the conditions within which an individual acts. Human agency cannot be explained solely in terms of the central nervous system and the particles of matter with which it comes into contact any more than a market can be explained in terms of a single vendor. The single vendor can only be explained in terms of her interactions with others. The determining influences on a moment of human agency extend well beyond the individual. A description of a moment of human agency encompasses both the individual and the broader social processes within which the individual relates to the world.

In Psychology and the Question of Human Agency (Martin et al., 2003), the authors argue that human agency is irreducible to biological, physical, or socio-cultural determinants. Rather, a human agent has bio-physical requirements for existence and is embedded in a socio-cultural world, but is nonetheless in possession of a degree of self-determination that cannot be accounted for in terms other than the agency of that individual. Human agency is "not fully determined by factors and conditions other than his or her own understanding and reasoning" (p. 82).

As this thesis unfolds, arguments will be presented to support the description of human agency quoted above. A preliminary outline of these arguments will be presented in the following paragraphs.

In accord with Martin et al. (2003), it will be argued that understanding and reasoning cannot be reduced to physical particles, but rather, over temporal spans ranging from the evolutionary to the momentary, emerge through the interwoven processes by which human agents relate to the world (Martin, 2006; Mead, 1932). An account of the evolution of living agency and the emergence of human agency is an account of relational processes (Bickhard, 2002; Mead, 1932) dependent upon physical mechanisms but explained by the development of relations between agents and the world over time rather than by aggregates of physical matter. In the moment of human agency described in the opening scenario, there are bio-physical requirements for every aspect of the situation. However, these requirements cannot explain my agency unless Kim's physically reducible, causally efficacious functional properties are already understood in terms of the processes through which I relate to the world I occupy; processes that are interwoven within the process through which life has emerged and permeated our planet.

A *process*[2] is a flow of events with one event having a determining influence on another (Mead, 1932). For Mead, "[t]he world is a world of events" (p. 1). If there were no events, he contends, there would be no past or future. Even though an eventless world may involve temporal passage, "the essential nature of the present and of existence would

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[2] Process is a flow of events. Analyses typically parse the flow of events in some conceptual manner, say, between life and social processes. When conceptually parsed, the plural (i.e., processes) will be used. No statement is being made, however, as to the metaphysical singularity or plurality of process. The parsing, in this example, is not an assertion that life processes and social processes are separate flows of events. It is a conceptual distinction between modes of analyzing and interpreting events.

have disappeared. For that which marks a present is its becoming and its disappearing" (p. 1). As we shall see, however, this is a very preliminary definition of *world*. It is not simply events that constitute the world but the engagement of individual agents and groups of agents within events. I will greatly expand on this concept as the thesis unfolds.

Human agency is the moment to moment engagement of individuals within the flow of events that constitute the world. More than this, it is an engagement in which the human agent has a degree of self-determination through which her[3] own deliberation and reasoning can be coordinated into her own acts. An account of agency demands an account of the process within which an individual engages.

Individuals are embedded within a dynamic flow of bio-physical and social processes. Through phylogenesis and ontogenesis, individuals have developed a broad array of modes of functional engagement within these processes. As we have seen, Kim (1999) presupposes such a functional engagement with the world. But he claims it can be reduced to its basal constituents. A function, however, cannot be presupposed as intrinsic to an individual or as the starting point for a reductive analysis. A function must be a function for something. We cannot explain what the function of something is by seeking the function's causes in its basal constituents. A reduction to the lowest level of particle physics may well tell us how, for example, photosensitive cells are constructed and how they react to photons, but it will not explain why photosensitive cells and the eye evolved. The eye did not evolve because it was caused to do so by photons and its

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[3] This thesis is cautious not to engage in gender bias. However, precluding the use of "he" and "she" is precluding the use of the second person singular. As much of this thesis is a discussion of an individual that is particular and individuated from others, avoiding the second person singular would be problematic and very culturally bound. In many languages the second person singular is not gender bound. The terms "he" and "she" shall be used interchangeably with no intention of bias towards either gender.

underlying molecular structure. It will be argued herein that the eye, the mechanisms of perception, and indeed the entire field of human agentic activity evolved through and were substantially determined by a process of interaction within the world.

A process is temporal. Kim's (1999) denial that a functional property can have causal power over its realizer at the very moment that the realizer has causal power over the function may be correct, but it is moot. A temporal process—a flow of events—cannot be understood in a static time frame. As the temporal scope of analysis extends to the evolutionary, neither the empirical evidence nor logical analysis supports Kim's hypothesis that the only causal power of a functional property lies in its basal constituents. (Bickhard & Campbell, 2003; Campbell, 1974b). Likewise, at the very finest degree of temporal analysis, that of quantum fields, causality appears to be a much more complex process than the Newtonian model assumed in Kim's account (Bickhard, 2002; Bickhard & Campbell, 2003).

As shall be discussed in this thesis, there is an alternative to the Newtonian model of the universe that underpins Kim's analytic reduction of human agency. Mead (1925, 1932, 1934) argued that the universe cannot be explained within a reductionist framework. For Mead, life processes were emergent and the human quality of self-reflective engagement is an emergent mode of engagement within the emergence of life. This thesis will present arguments that support Mead's position and embed it within contemporary complexity theory. Complexity theory proposes a dynamic process through which processes as varied as cybernetics (Heylighen, 1992), random networks (Barabasi & Albert, 1999), epistemology (Bickhard & Campbell, 2003), biology (Kauffman, 1995) and neuroscience (Freeman, 2001) organize and change over time. As we shall discuss,

complexity theory coheres with an account of irreducible human agents engaged within a flow of events. It will be argued that a flow of events (i.e., a process) cannot be explained in reductive terms once that process becomes a life process capable of maintaining its own existence.

Living agents—whether they be single cell organisms or human beings—along with the world agents occupy have emerged as part of this process (Kauffman, 1995). Each agent has a temporal as well as a spatial structure (Mead, 1932; Sperry, 1986) and acts within a world of agents each of which also occupies a unique temporal and spatial structure within a much broader dynamic process. Mead argued that a living agent occupies a perspective in the world that is not simply a spatio-temporal point of observation, but also the source of its agentic activity in the world. As Martin (2006) notes in his interpretation of Mead's concept of perspectives: "A perspective is an orientation to an environment that is associated with acting within that environment. Perspectives emerge out of activity and enable increasingly complex, differentiated, and abstracted forms of activity" (p. 67). Living agents are constantly adjusting to the dynamic processes of their environment. In any given moment, a living agent is constituted by the temporal process that has brought this moment to pass and is responding to the novelty of a moment constituted by the activity of other agents within the process. Since the activity of a living agent is causally efficacious, the perspective is intrinsic to the process. In the words of Mead (1926), "[t]hey are not distorted perspectives of some perfect patterns, nor do they lie in consciousnesses as selections among things whose reality is to be found in a noumenal world. They are in their interrelationship the nature that science knows" (p. 76).

It shall be argued herein that if we reduce an individual and the world with which he or she engages to "bits of matter and structures aggregated out of bits of matter, all behaving in accordance with laws of physics" (Kim, 2005, p. 150), our understanding of human agency as an active coping in the world is replaced with a mechanistic explanation of the physical mechanisms of agency. Reductive physicalism cannot explain the evolution of living agents, the emergence of human agency, nor the reasons for a human agent being what she is and doing what she does. An emergent process account can. A moment of human agency is a perspectival engagement with the life and social processes that constitute the world. Each individual occupies her own perspective and yet is profoundly connected to others through the flow of events that constitutes a world of mutual engagement with others.

The Method of Argument: A Self-Evident Premise

There is much in the position outlined above that requires justification and further explanation and this thesis will attempt to do so. I will develop a transcendental argument (Kant, 1933; Taylor, 1979) that seeks the conditions for a moment of human agency over three temporal spans of analysis: microgenesis, ontogenesis, and phylogenesis. In brief, a transcendental argument is an argument that starts with a feature of experience taken as obvious and self-evident. The object of the argument is to demonstrate the necessary enabling conditions for the possibility of that experience. A transcendental argument sits well with a Meadian approach. In *Mind, Self, and Society*, Mead (1934) is recorded as stating[4]:

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[4] Mind, Self, and Society (Mead, 1934) is a posthumous publication compiled primarily from students' lecture notes and edited by one of Mead's students.

> [w]hat [psychology] is trying to do is to find out what the conditions are under which the experience of the individual arises. That experience is of the sort that takes us back to conduct in order that we may follow it. It is that which gives a distinctive mark to a psychological investigation. (p. 36)

I will start with the experience of a moment of human agency. This is a moment of activity that Mead refers to as conduct, the purposeful action of a living being. A moment of active engagement with the world will be the feature of experience which one can claim to be "indubitable and beyond cavil" (Taylor, 1995, p. 20). By analyzing the necessary conditions for a moment of active engagement within the world, I hope to demonstrate the relevance of an emergent process account to human agency. The benefits of this approach to the investigation of human agency are as follows.

First, the starting point of the argument, the experience of a moment of active engagement within the world, is one that is acceptable both to the reductive physicalist and to the proponent of an emergent, process account. This thesis is, in part, an attempt to engage with people who might adhere to a reductive physicalist point of view. Were the opening premise unacceptable to the reductive physicalist viewpoint, it is unlikely that readers of a reductive physicalist bent would consider the argument to be tenable, let alone persuasive.

Second, a transcendental argument is compatible with and complementary to empirical research. In seeking the conditions for a moment of human agency, the interpretation of empirical research can play a guiding role in influencing where such conditions should be sought and also offers a supporting role to the extent that contemporary interpretations of empirical research cohere with the account being developed herein.

Of course, no claim is being made that every condition for the possibility of human agency will be presented here. Nor is it being claimed that a Meadian approach specifies an exact model of human agency. As we shall see, there are many contrasts to be made between a Meadian approach and other approaches to the study of human agency that are not so much contradictions, but rather, different conceptual approaches to the parsing of human agency.

Before embarking on this investigation, I will briefly touch on three threats to the validity of transcendental arguments. In responding to these threats, it is hoped that as well as justifying the application of a transcendental argument, the reader will also be provided with an opportunity to gain a little more familiarity with a Meadian approach to the investigation of human agency.

First, according to Stroud (1968), a transcendental argument of the kind being employed in this thesis starts with the premise that individuals *experience* acting rather than the premise that individuals act. A Cartesian sceptic would argue that one cannot assume that experience of acting entails irrefutable proof that one acted. A transcendental argument that makes such an assumption is unjustified. Admittedly, a Cartesian sceptic that denies that experience necessarily entails engagement with the world cannot be refuted by a transcendental argument and I will not seek to address such radical scepticism here.

However, as this account of human agency is developed, the thesis that activity is a precondition of experience in the world will be contended, not assumed. The broad shape of this contention is as follows. Macmurray (2004) noted that our knowledge of acting is as direct and immediate as that of our thinking. According to Macmurray, action is

primary. Thinking requires action, and thus philosophical analysis needs to begin from the point of action rather than reflection. Merleau-Ponty (2002) likewise pointed out that as embodied agents, our bodies are as immediately present to us as our thoughts and that it is with our bodies that we orientate ourselves to the world and act within it. Mead (1938), Merleau-Ponty (2002), Heidegger (1962) and Macmurray (1957, 2004) all argue that pre-reflective, agentive experience of the world is a precondition of the objectified, thinking self that the sceptic subsequently seeks to isolate as the a priori essence of existence. Sceptics may claim that there is no unassailable argument that my experience of acting is because I act. However, there is also no unassailable argument that I could think or experience if I were not already in a world of activity. Indeed, the arguments presented herein will suggest that the sceptical position is untenable.

A second criticism might be that if one starts from the experience of acting, then one can only reach an idealist conclusion in which experience is validated by reasoning about it. One may claim that by starting from the experience of acting there is no means of accessing and investigating the real world and the bio-physical mechanisms through which an individual engages with it. It should be stressed that a Meadian approach is a realist approach but one that recognizes multiple perspectives as an intrinsic aspect of reality. Mead (1926, 1932) recognized that any investigation of human agency starts from a perspective and cannot extricate itself from the reality of perspectives. An experience of acting is an experience of interacting with other things within a world. An experience of acting, then, is a situation characterized by the relation of an individual to the world. Acting in the world entails experience of that act.

According to Mead (1938), “The world, things, and the individual are what they are because of this relation” (p. 215). Two situations are identical to the extent that the properties of the things and the experience are identical and they differ to the extent that the properties and experience differ. The properties are real (such as the red of a traffic light), but they do not exist in abstraction from the object. For Mead, it is the real and identical character of things that serve as “the basis for intelligent conduct, which involves different situations” (1938, p. 215). That is, the identical character of a red traffic light in different settings enables me to act in a coherent manner across different situations. “The peculiarities of the different situations are not those of appearances or phenomena which inadequately reflect an absolute reality” (1938, p. 215). Objects are real and their properties are also real and cannot be abstracted. Crucial to Mead, however, was that the relations between the individual, other things, and the world that constitute a situation are also real. “These situations are the reality” (1938, p. 215). There is a situation in a restaurant where the menu offers the possibility of being read, the food offers the possibility of being eaten, and a child may be told to take a chopstick out of his nose. The situation is the same for all involved to the extent that it offers the same possible responses and is different to the extent that individuals’ responses may differ. This thesis starts with an experience of acting, but will take this experience as an aspect of a real relation in a real situation that in itself is one perspectival opening into a real world. These relations are “the nature that science knows” (Mead, 1926, p. 76).

According to Mead (1903, 1926, 1938), starting from an experience of engagement with the world is the *only* means of accessing and investigating the real world and the bio-physical mechanisms through which an individual engages within it. A

Meadian approach to the investigation of human agency is one that takes empirical findings and scientific theory into account and also recognizes that such evidence cannot be entirely abstracted from the world we experience. “[C]ontrolled sensuous experience is the essential basis of all our science. Even the most abstract speculation must have some point of sensuous contact with the world to render it real” (Mead, 1903, p. 96). Heidegger’s (1962) oft cited example of a hammer is illustrative here. A hammer can be investigated in terms of momentum, mass, and its molecular structure but, nonetheless, remains an explanation of a hammer used for hammering. Our experience of a hammer is not only a precondition of our explanation, but also that which we are trying to explain. Likewise, when investigating human agentive activity, the experience of agentic activity from which the investigation starts is both a precondition of investigation and that which we are trying to investigate (Mead, 1903).

In short, an investigation of a moment of human agency is an investigation into the engagement of individuals in real, mutually shared situations. It is not primarily an investigation into the mind or experience of an individual, but an investigation into the real situations through which experience arises. As shall become apparent as the thesis progresses, it is an investigation that cannot be entirely parsed from a perspective derived from the experience of engaging within the world.

A third criticism of the transcendental argument might come from the perspective of an eliminative materialist. It could be that our experiences of agentive activity are profoundly embedded in a series of beliefs about who we are; beliefs that science will eventually reveal to be myths. The problem, according to an eliminative materialist, is that starting an investigation with a moment of human agency may be tantamount to

starting an investigation with a myth and then seeking the necessary enabling conditions of the myth. It is like starting an argument with the experience of the soul and arguing for the existence of God. There is a very important aspect of this argument that must be recognized. Beliefs about being human vary tremendously over time and across cultures. As already mentioned, we are embedded in a perspective. Experience of the world is through that perspective. As the perspective changes, so will our explanations. Notions of agency connected to our present day cultural understanding of being human may well be eliminated in the future. Nevertheless, seeking to explain what it is to be human will continue. Until humans (or some further evolved sentient beings) lose interest or the need to explain their being, there will be a sentient existence that calls for an explanation. Even if notions such as reflection and deliberation are eliminated, this elimination will occur as humans seek to explain what it is to be human and the conditions for human activity in the world. Otherwise, it is not just the mode of explanation that has been eliminated but the question as well. The soul, for example, may be eliminated (by scientific authorities) as an explanation for our sentience, but the question of human sentience is as important as ever. Certainly, the starting point of a transcendental argument must be carefully chosen. Nevertheless, if a transcendental argument starts with a moment of activity in the world that calls for an explanation, then the eliminativist may eliminate the explanation (whether it be folk psychological, cognitive or social), but she cannot eliminate the moment of activity; she can only provide an alternative explanation. In short, as perspectives change, so will our modes of explanation. However, that which we are seeking to explain, in this case the agentic experience of human beings, remains. It is from a moment of human agency that this argument shall commence.

Chapter 2: A Description of a Moment of Human Agency

In order to examine the enabling conditions for a moment of human agency, we need to be clear about what a moment of human agency is. The task at hand then is to describe a moment of human agency and, as far as it is possible, parse the description from our subsequent examination of its enabling conditions. Ideally, the description should be as non-controversial as possible. To the extent that a reader considers the description untenable, the conditions subsequently proposed to enable the possibility of the description are also brought into question. It is unlikely, however, that any description of a moment of human agency will be entirely non-controversial. Opinions may vary widely as to what should be included in the description and the terms with which the moment should be described. Adopting a Meadian approach, this chapter attempts to provide breadth to the description so that it encompasses the mechanisms of the central nervous system, the intentionality of the individual, and the world within which the act occurred. It is hoped that even if readers find that the terminology differs from their own and that certain emphases may differ from their own, there will, nonetheless, be considerable room for agreement that the description provided herein encompasses many of the issues an account of human agency must address.

The first issue to be addressed is what one can take prima facie to be an experience of a moment of human agency; a moment that can subsequently be investigated. This thesis will adopt Mead's description of an "act" (1938, p. 3) from an impulse to action to the consummation of that action. The analysis is not of the reflective deliberation that may occur as one considers a completed act, but the often prereflective experience of the act as the act occurs. As this thesis progresses, unless there is explicit

mention of deliberation or reflection, the emphasis will remain on an individual's pre-reflective engagement with the world. We shall illustrate this agentive experience by considering a particular act, from an impulse to action to the consummation of that action (Mead, 1938). The particular act of agency can be provisionally described by the following sentence: I saw Saida's notes on her desk, got up from my desk, walked over to Saida's desk and, without sitting down, started to browse her notes.

An Illustration of an Agentive Moment: In a Moment of Attuning

When I saw Saida's notes, I understood them within a much broader domain of familiarity. Not only did I understand the notes as notes and as of assistance in preparing for an exam, but I also saw them as Saida's notes and entertained the possible reaction of Saida to my looking at her notes. I had a sense of Saida's attitude both to her notes and to myself as an individual and I was familiar with the scope of acceptable social practices in a classroom when class is not in session. Moreover, had I felt entirely confident that I could pass the upcoming examination, or alternatively, had I no interest in passing the examination; I would not have been interested in looking at Saida's notes. The significance of the notes to me was embedded in the significance of the examination, which, in turn, is embedded in the significance of my academic achievement.

Before I got up from my desk, all of these elements were present in my attitudes; attitudes that arose as I attuned to the situation. The term *situation* here refers to the inter-related conditions and circumstances oriented to by individuals and groups of individuals.

I now turn to a consideration of attuning and attitudes that arise in a situation. We will then incorporate these considerations into the description of the moment of human agency outlined above.

Individuals are actively attuning to their surroundings. They move their eyes, focus the lens, and adjust their bodies toward the environment to continue attuning as the environment changes. Attuning is the moment to moment active adjusting of an individual in response to the situation. It is a perceptive process and an adjusting of attention to particular aspects of the surroundings.

With each adjustment of attention there is a readiness to respond to the object of attention and the surrounding environment to which it belongs. This moment to moment readiness to respond is what Mead (1912) referred to as an "attitude" (p. 402). A moment of attuning is not a passive absorption of the environment, nor is it a reflective or deliberative cognitive process, but rather, it is bound to the initiation of a response to the situation. In a moment of attuning, attitudes arise. This is not to say that attuning and the attendant attitude of the individual necessarily result in an overt response. An attitude is often a subliminal "readiness" to respond (Mead, 1934, p. 12). An attitude is "an organization of the various parts of the nervous system" (1934, p. 11) that do not simply sense what is taking place, but also what is going to take place or what can take place. Attitudes are anticipatory in nature. When seeing a hammer, for example, there is a readiness to pick it up or when seeing a chair, there is a readiness to sit down. That to which an individual attunes "calls out" (1934, p. 278) an attitude: an anticipated mode of response. Of course, an individual may enter a room and see the hammer and the chair, but simply take a screwdriver and leave the room. Nevertheless, the chair and the hammer "exist as such because of the uses to which [one] normally puts these objects" (1934, p. 278). The presence of a chair as a chair is because of the responses it calls out in the individual.

An attitude, according to Mead (1934), is a readiness to respond that arises in a moment of attuning. There are, of course, situations that call out alternative responses. A chair in a classroom can be a place to put a bag as well as a place to sit. The floor by a bookshelf in the library is for placing bags, walking, and for sitting on. When an individual attends to the library floor, there is a readiness to respond in all of these ways whether or not any of these responses are consummated in an overt act. Typically, an array of attitudes—a collection of alternative possible responses—arises in a moment of attuning. In this thesis, *attitude* will be defined as a particular and momentary readiness to respond. When attuning to a chair, for example, the readiness to respond by sitting is an attitude. The totality of possible responses to a situation that arises in a moment of attuning will be referred to as an *array of attitudes*.[5] In the earliest phase of an act, meaning is present in the central nervous system as a readiness to respond in alternative ways. An array of attitudes is an immediate grasp of the meaning of a situation and the objects attended to in that situation. It is a meaning derived from the alternative responses open to the individual. The meaning of Saida's notes was the totality of possible responses available to me in the moment of attuning to them. In Meadian terms, one can say that the meaning of Saida's notes was the array of attitudes that arose in the moment of attuning to them.

The attuning of individuals is often to other individuals. Attitudes towards another individual—the possible modes of responding to another—depend upon the conduct of the other. The attitudes of one individual change from moment to moment as he adjusts to

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[5] In *Mind, Self and Society* (1934), Mead refers to a "set of attitudes" or just "attitudes." Array is adopted here as an array has no fixed start or end point. Moreover, Mead never made a clear conceptual distinction between singular and plural forms and uses of attitude.

the moment to moment alterations in the conduct of another (Mead, 1910). In Mead's words, "[T]he interplay of social conduct turns upon changes of attitude, upon signs of response" (p. 403). Where two or more individuals connect, the meaning of the situation is generated by the interplay of the attitudes of the individuals involved. The social process, according to Mead, is a determining factor in the meaning of a situation.

A key aspect of this continual adjustment of attitudes in light of the conduct of another is that the attitudes of one individual are adjusting before the act of the other is complete. An individual can assume the attitude of another person before the attitude has been expressed in a completed act. A simple example offered by Mead (1934) is that a fencer parries a thrust before the thrust is complete. Another example would be a person who asks a question and then interjects an expression of understanding the answer before the other has answered. In this case, the questioner may have attuned to a change in the posture or facial expression of the other and from these incipient, incomplete responses assumed the attitude of the other and what the completed response would be.

The array of attitudes that arise in an individual is the meaning immediately grasped in a situation. This is not a conscious, reflective process. "Awareness or consciousness is not necessary to the presence of meaning in the process of social experience" (Mead, 1934, p. 77). On the contrary, meaning is intrinsic to the moment to moment attuning of an individual in the world. An individual's array of attitudes at any given moment arises with an attuning to a situation. It depends upon a prereflective familiarity with the implications of the situation founded on past responses to similar, related situations. An array of attitudes is also the predictor of the outcome of future responses. Once again, the meaning present in an array of attitudes can be far reaching

and the significance of a moment of attuning can extend to complex social processes that, in part, determine the array of attitudes that arise. In experience, attitudes arise as relations between the individual and the situation (Mead, 1938). An array of attitudes distinguishes the individual from other individuals and also from the same individual under other conditions. An array of attitudes is not determined from within a detached central nervous system, nor is it determined simply by the surroundings. Attitudes arise through the process of adjustment between the attuning individual and the everchanging surroundings. It is a momentary perspectival opening within which an individual acts.

I can now apply this description of the arising attitudes to the particular moment of agency that illustrates this investigation. As I sat in the classroom at break time, I was attuning to the situation in the classroom. I was not actively seeking out Saida's notes nor consciously seeking test preparation material to read. I may, however, have been attuning to reading material in the environment as I often respond to a hiatus in organized activity (such as this class break) by finding something to read. I was not deliberately scanning from note binder to note binder and book to book in the classroom and actively selecting what I should read. I was not reflectively identifying each item of reading material in the classroom with its owner or with its contents and I was not in each moment of attunement making any decision as to whether I should get up and examine the object in focus. On the contrary, I attended without reflective awareness to those items in the classroom to which I had typically responded in the past and each item called out a response in me. Before my eyes focused upon Saida's notes, the impulse to respond was weak. The attitude remained one in which the items had meaning because of the possible responses they called out in me, but none called out a response from which arose a deliberate

decision making process or an impulse to act. When my attention moved to Saida's notes, however, a stronger impulse to act did arise within me. It arose because my attitude to the notes arose within my attitudes to the upcoming examination and my attitudes to academic success. My momentary attitude to Saida's notes had also been formed within the interplay of attitudes between myself and Saida over past weeks and months. These attitudes were already present in my perspective at the moment that the possibility of getting up and looking at her notes came to reflective awareness.

The precise temporal span and perceptual processes through which an attitude arises are not under investigation in this thesis, although much work in neuroscience and perception addresses these questions. It is also beyond the remit of this thesis to specify exactly when the object of attention came to reflective awareness. The emphasis here is on the inextricable connectedness between the arising of an attitude and the surrounding world. As reflective awareness of an object arises, it is entwined with the possible responses presented by that object. This Meadian description of attitude fits well with contemporary theories of cognitive processing. Before bolstering the Meadian position in this way, however, I shall continue with the description of a moment of human agency. The description so far has yet to encompass my decision to act or the consummation of the act.

People do not always respond instantaneously and prereflectively to a situation. As Martin et al. (2003) noted, a defining feature of human agency is the ability to deliberately and reflectively frame a situation before acting. Mead (1938) recognized this and noted that the adjustment of attitudes is the first phase of an act: the phase of "impulse" (p. 3). It is the phase in which several and often competing impulses to

respond arise. “The mechanism of the central nervous system enables us to have now present, in terms of attitudes or implicit responses, the alternative possible overt completions of any given act in which we are involved” (Mead, 1934, p. 117). As my attitudes to Saida’s notes arose, several responses were present. The central nervous system involves processes that facilitate both a delay in responding and the selection of a single response. According to Mead (1934), human agents (and other “higher” life forms; see p. 118) control present behaviour in terms of future consequences by organizing the responses that arise in attitudes into different subsequent acts and selecting the response which will satisfy the agent in later experience. Mead (1934) referred to the phase of delay and selection as “reflective conduct” (p. 117) and notes that it entails the ability to implicitly test out alternative completions of an act before selecting a single response for overt action. Preliminarily, reflective conduct can be considered as an inward turn of attuning to the momentary arising array of attitudes. This shall be discussed in considerable depth in the next chapter.

In human agentive reflection, an awareness of the attitudes of others forms much of the basis upon which an overt response is selected. The attitudes of others cannot be parsed from the attitudes of the reflecting individual. Rather, the attitudes of others are implicit in, and formative of, the refining of attitudes into a selected response in the reflecting individual. That is, the selection of a response is evaluated against the interplay of responses with others in previous situations (situations in which a similar array of attitudes has arisen) and how these responses are likely to unfold in the present situation. “[T]he individual [brings] himself into the same experiential field as that of the other individual selves in relation to whom he acts in any given social situation” (Mead, 1934,

p. 138). The attitudes of others are absorbed into the attitudes of the individual and facilitate the constitution of the perspective occupied by that individual.

Terminology: Attitude, Array of Attitudes, and Perspectives

Individuals not only take the attitude of the other in their moment to moment interactivity, but can also take the perspective[6] of the other (Mead, 1934). The individual anticipates how the other responds at any given moment by taking on an array of attitudes of the other. These are perspectives that have formed within broader social processes and influence the attitudes of the moment. For example, at the moment that a child sees the teacher reach for a piece of chalk, she may anticipate that a math question will be written on the blackboard and reach for her pen. If, however, she sees her classmate, Herbert, reach for the same piece of chalk, she may cover her ears in anticipation of a shrill screeching sound as the chalk is dragged across the blackboard.

For the sake of clarity, a terminological distinction between attitude and perspective shall be made here that is consistent with Mead's ideas, although it should be noted that Mead himself made no such distinction. The term *attitude* refers to a particular, momentary and often prereflective readiness to respond in a moment of attuning. As a readiness to respond, an attitude is functional. An *array of attitudes* refers to the collection of attitudes that arises in a moment of attuning. A *perspective* is an array of attitudes. For clarity and distinction of emphasis in this thesis, there will, however, be a distinction of usage between array of attitudes and perspective. An array of attitudes will refer to the readiness to respond in a moment of attuning whereas perspective will refer to

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[6] In The Genesis of the Self and Social Control (1925) Mead refers to "taking the role of another" (p. 268). Mind, Self and Society (1934) and The Objective Reality of Perspectives (1926) also use this term. In The Philosophy of the Act (1938), Mead integrates role taking and perspectivalism by referring to "tak[ing] the perspective" (p. 182) of another.

the embeddedness of an array of attitudes within a history of situations over temporal spans of analysis extending through ontogenesis and beyond. There is an obvious recursivity here. An attitude arises within the perspective occupied by an individual. That is, the readiness to respond to a situation depends upon previous experiences and conceptual integration of those experiences. At the same time, an individual's momentary and particular readiness to respond to the surroundings and other individuals in the surroundings is a determining feature of the perspective.

Related distinctions are between *taking the attitude* of another, *taking the perspective* of another, and *taking the role* of another. In this thesis, to take the attitude of another will refer to one individual grasping the particular, momentary response of another individual before that individual completes the response in overt activity. Taking the attitude of another implies a functional identity between the particular attitude that is shared by two or more individuals. To take the perspective of another is to assume the array of attitudes with which another engages within a situation. Taking the role of another is no more than taking the perspective of another. It is the assumption of the array of attitudes with which another individual is engaging with a situation. This term, however, highlights an individual's understanding of the social processes with which she engages. To take the role of a teacher, for example, refers not only to an assumption of the array of attitudes with which a teacher engages with students, parents, and colleagues, but also refers to an understanding of lessons and parent teacher meetings. It needs to be emphasized that the terms taking the role or taking the perspective of another do not imply a comprehensive or necessarily accurate assumption of the array of attitudes arising in another. A man, for example, takes the perspective of his wife when he turns

down the volume of the music she is listening to. Whether or not he has accurately anticipated the perspective of his wife to this particular act, let alone her perspective to other acts and other situations is another matter.

As with the terms attitude and perspective, there is a recursivity between taking the attitude and taking the perspective of another. The perspective of another is often assumed by an immediate and particular attitude, and the attitude of another can be interpreted or predicted by assuming her perspective.

Perspectives are illustrated in my reflective conduct as I attended to Saida's notes. As my attention to her notes arose in my awareness, several attitudes arose. One was to fetch them over to my desk, another was to sit at Saida's desk, and another was to avoid the notes and settle my gaze elsewhere. I reflected upon the different responses open to me and the outcome I desired. I took the perspective of Saida in that I considered how she might respond to my looking at her notes and also the perspective of her friend who was still in the room and sitting right by Saida's desk. I was also aware of a more general perspective through which I evaluated my own possible responses by how they might be responded to by others in typical social practice. I understood that the notes were the property of another person and that there was a territorial claim made on Saida's desk by the presence of her notes upon it. My moving towards the notes would call out an attitude in others towards my conduct which depended on their perspectives towards me and their understanding of relevant social practice. I was occupying several perspectives simultaneously but could not clearly differentiate one from another because my own perspective was partially determined by the perspectives of others (Mead, 1925, 1934).

In reflective conduct, I did not necessarily reflect on every aspect of every perspective pertinent to my conduct. Much was simply there in my array of attitudes. For example, there was no inhibition to my responding by standing up as this was break time, although, in class time, such a response would either have been inhibited before it came to the threshold of awareness or become the subject of reflective conduct. It is also unlikely that I reflected upon my long term career goals that hinged upon my success in the upcoming examination or the influence that these career goals had on my moment to moment conduct. These would have been embedded in my perspective and although constitutive of my momentary array of attitudes would not necessarily have been attitudes to which I attuned in reflective conduct.

From Prereflective to Reflective Activity: The Decision to Act

The decision to act is taken within a perspectival opening that unfolds within one's relational existence in the world and is framed by the possible responses open to the individual within that perspective. From within a perspective, the individual selects an overt response that resolves a problem or facilitates future activity (Martin, 2006). At times, reflective conduct selects from "different possibilities or alternatives of future action" (Mead, 1934, p. 97) that may be as banal as the choice between dark and light roast coffee in a coffee shop or as weighty as whether or not to seek a divorce. Sometimes, however, the individual cannot select a response based solely on previous experience (Mead, 1932). The individual may have to react to a situation in which attitudes accrued through past activity do not offer a response for which he can confidently anticipate the outcome. The decision to act is not, in Mead's mind, an entirely logical process made from a perspective free view from nowhere. Rather, the decision

belongs to an individual who occupies a perspective and from within that perspective determines an optimal outcome from among outcomes that are likely to follow from the possible responses available in an uncertain situation.

Once the overt response is selected, an individual approaches (or withdraws from) activity, with the central nervous system already primed for engagement (Mead, 1938). As we have seen, the response eventually selected was already present in the attitude of the individual as a possible impulse for action: a possible readiness to respond. Thus, the consummation of the act is determined not simply by the motor activity through which it is carried out, but by the response initiated in the arising of attitudes in the momentary attuning of the individual.

> The later stages of the act are present in the early stages—not simply in the sense that they are all ready to go off, but in the sense that they serve to control the process itself. They determine how we are going to approach the object, and the steps in our early manipulation of it. We can recognize, then, that the innervation of certain groups of cells in the central nervous system can already initiate in advance the later stages of the act. The act as a whole can be there determining the process. (Mead, 1934, p. 11)

The act as a whole was an essential unit of analysis to Mead. In Mead's (1925, 1932, 1934) view, human agency is a thread within an evershifting array of social processes, processes of inter-determining activity between individuals in which the processes shape the attitudes of the individuals. Human activity is explained in terms of the act as a whole, not just for the sake of psychological analysis but also because the attitude of the individual or of others is always perceived in terms of the completed act even when the act is truncated. For example, if a teacher reaches for a piece of chalk, it is understood in terms of the act of writing on the chalkboard, even if the act is truncated a moment later. The Meadian moment of agentive activity can be delineated as the

temporal span between the momentary attuning that brings about the arising of an attitude to a situation and the consummation of the act in the expression of an overt action.

There is much work that still needs to be done before we can develop an in depth understanding of the reflective and deliberative nature of human agency. However, as shall be made clear in the development of this thesis, these unique qualities of human agency cannot be described in detail without careful consideration of the social processes within which they emerge and from which they are largely constituted. Social processes have developed both through the ontogenesis of individuals and the phylogenesis of the human species and are present in a moment of human agency. They constitute the contextual framework within which we act and as such social processes will also constitute a key focus for the investigation of the enabling conditions for a moment of human agency.

Empirical Research on Human Agentive Activity: Some Mechanisms of the Act

Before continuing, it is useful to consider several objections that can be raised to the description of an agentive moment provided above. The first might be whether this description is a valid starting point for a transcendental argument. Even if the reader grants the premise laid out in the previous chapter that an agent has immediate experience of an action, this description has already leapt well beyond this premise, asserting a psychology of prereflective awareness of which the individual, ipso facto, cannot be immediately aware. One might object that this description already extends beyond the phenomenological and yet provides no empirical support for the claims being made. As such, it is, at best, a speculative start to the thesis.

Mead's approach was not phenomenological. He was interested in what could be observed and in extrapolating theories of human psychology from observations. For Mead, this meant observing human conduct and developing theories based on his observations. For this reason, Mead referred to his study as a behaviourist account of psychology (e.g., 1922, 1934). His approach was very different, however, from the behaviourists of his day (and those that followed into mid-twentieth century) in that he did not ignore the experience of the individual. Nor did he ignore the unobservable organization of activity within the central nervous system. He observed the process of human conduct within a complex social process so that he could attempt to determine how experience arises within this process (Joas, 1997). A Meadian description of a moment of human agency can start from the immediate experience of an act, but cannot be described solely in terms of experience. It also needs to be inferred and explained in terms of the conduct of an individual engaged within the world and investigated over temporal spans ranging from the momentary to the evolutionary.

One strand in this thesis will be to illustrate how a Meadian account of agency is relevant to our modern day understanding of human agency. This will be done by starting from the observable conduct of the kinds identified by Mead and investigating how subsequent scholarly and empirical investigation have elaborated on this conduct. Mead's emphasis on observable conduct is akin to that of present day cognitive psychologists who examine human conduct, albeit in much more controlled conditions, and from such examination extrapolate theories of human agentive activity. It is also similar in approach to contemporary neuroscience which observes the activity of oxygen and electro-chemical pulses and, from these observations, extrapolates theories of how the brain

functions. Cognitive science, which shall be used here as a term to refer to the practices of cognitive psychology and neuroscience, has accrued a wealth of empirical data. From these data, explanations for the mechanisms of the central nervous system and human agentive activity are extrapolated. The data accrued are ever more refined and detailed as research methods and technologies develop. These data provide an increasingly reliable base of observations from which explanations can be developed. As this thesis engages with the observations and interpretations of cognitive science, an important caveat applies both to Mead's own interpretations of observable conduct and those that have followed through the development of cognitive science. Namely, a variety of theories may offer plausible explanations for an observed event. In this way, observed events are said to be underdetermined by theoretical explanation (Laudan & Leplin, 2006). Whether an interpretation of data and the terminology employed in such interpretations issues from a Meadian standpoint, a cognitive science standpoint, or a reductive physicalist standpoint, the interpretation is tentative.

Given that the scope of this thesis is a response to Jaegwon Kim's (1998) reductive physicalism, I will take the research findings of cognitive science into account so as to illustrate—in the broadest of brush stokes—how contemporary findings might be interpreted to bolster a Meadian approach to human agency and also how, in turn, a Meadian approach can offer an interpretation of contemporary findings and models that is less reductive and more intricately embedded in a social and temporal process than Kim's reductive physicalism.

I shall start by considering how cognitive science informs an understanding of attuning. Attuning is the moment to moment adjusting of individual human agents in an

everchanging situation, a situation that often includes other individuals. Attuning is a term that infers perception, attention and incipient responses. It refers to the perceiving of surroundings and attending to them, and also refers to an attunement to one's own affective and motor responses that are implicit in anticipation, whether this anticipation is automatic or controlled. The term "attuning" also assumes that the recursiveness and interdependence of perception, attention, affect, anticipation, and response are embedded in complex social processes.

Some aspects of attuning have been studied in contemporary research and many of the empirical findings of cognitive science provide additional detail to the description of a moment of human agency provided so far. In the study of perception, for example, it has been found that when individuals visually attune to their surroundings, their eyes make quick movements followed by pauses to focus on an object or objects — a pattern known as a saccade. There are as many as three saccades a second (Intraub, 1997) as individuals observe their surroundings. In a single saccade, an incipient response may arise to as many as three or four objects (Vogel, Woodman, & Luck, 2006). The individual also relates these objects to other objects in the situation, guiding the selection of attention to where the other objects are expected to be (Bar, 2004). This suggests familiarity with a scene that facilitates a pattern of selective attention. Aspects of perception not considered by Mead include certain global features of perceptual processes (Torralba, Oliva, Castelhano, & Henderson, 2006). In a classroom, for example, an individual has an immediate awareness of the ceiling, floor, and corners, but will tend to focus attention on a narrow, horizontal span in which the desk tops and

people tend to be positioned. Again, the selected area of attention depends on familiarity with the situation.

Results of research, then, suggest that movement of attention is selected based on an anticipation of a situation and that this anticipation comes from a familiarity garnered from previous experience. In many empirical studies of attention and perception, familiarity is assumed as an independent variable (e.g., Bar, 2004; Intraub, 1997; Torralba et al., 2006). Not only is it held that an individual's familiarity with a situation guides attention, familiarity is often considered to facilitate the interpretation of objects of attention. Change blindness (Simons & Levin, 1997), in which individuals fail to notice unusual changes in a familiar scene, suggests that familiarity with an object or a situation plays as much role in interpreting immediate experience as the sensory stimulation itself. It may be because anticipation based on familiarity plays such a fundamental role in attuning to an object or scene that specific responses towards the object can arise within 100 milliseconds, possibly even before visual processing is complete (Bar, 2004). Research suggests that our readiness to respond to a situation depends as much on our previous engagement with similar situations as it does on the events occurring in the present.

Contemporary models of cognitive processing posit a neural network that provides further insight into this process. Briefly stated, the model posits that the central nervous system accrues potential responses to the world that have been garnered through a lifetime of attuning to the world as a network of synaptic connections between neurons (Freeman, 2003; Rogers & McClelland, 2004). A synaptic connection is a link between two neurons through which an electro-chemical impulse can travel if it is of sufficient

strength. Specific features of objects are stored as neural assemblies in which a large number of neurons are connected. These neural assemblies tend to activate concurrently when attention falls on a feature of a perceived object or situation similar to that within which the neural assembly originally formed. Each time the neural assembly is activated, the strength of the connections between neurons in the assembly strengthens. Neural assemblies that often activate together, such as pen and paper, will be closely connected. A key feature of this model is that in a moment of attuning, many neural assemblies activate concurrently, so that one feature of a perceived situation activates other features connected with it. If an individual sees a bed, for example, the neural assembly activated in her central nervous system is so closely connected to the neural assembly activated on sight of a pillow and perhaps the neural assembly activated as one prepares to lie down that these neural assemblies will also activate (Rumlehart, Smolensky, McClelland, & Hinton, 1986; Schneider, 1987).

Current studies of attention and perception fit well with Mead's (1934, 1938) account of attuning as an active, often preconscious process by which an individual interprets a situation in terms of previous experience. As shall be discussed shortly, the fit is far from perfect and Meadian terminology is not always shared by cognitive scientists. Moreover, this briefest of sketches has barely touched upon an explanation of how this almost instantaneous prereflective familiarity with a situation comes to be present in the central nervous system. This, however, is a question best addressed in terms of phylogenesis and ontogenesis in later chapters.

A Meadian approach to human agency proposes that at each moment of attuning new attitudes arise. For Mead, an individual's anticipated response is implicit in a

moment of attuning. Contemporary interpretations of relevant research strongly support Mead's view. Studies of automaticity (Shiffrin & Schneider, 1977) suggest that individuals respond with a minimum of attention to familiar objects and situations. The automatic response can be so strong that it does not enter into reflective conduct and can be difficult to suppress. There are degrees of automaticity (Cohen, Servan-Schreiber, & McClelland, 1992; Moors & De Houwer, 2006) that depend on how familiar an individual is with a situation. In very familiar situations, individuals respond with a minimum use of "processing capacity" (Moors & De Houwer, 2006, p. 297), a term used in cognitive science that (somewhat loosely) refers to how much information an individual can attend to at a given moment. Use of processing capacity increases when an individual has less experience responding to a certain situation. However, the premise that individuals have a readiness to respond in familiar situations with little or no demand for reflective conduct is fundamental to all models of automaticity (Cohen et al., 1992; Moors & De Houwer, 2006; Shiffrin & Schneider, 1977).

There is also a growing body of evidence that an individual's response is implicit from almost the very earliest stage of sensory stimulation rather than being subsequent to perception. Neural network models of cognition posit that an individual's possible response in a moment of attuning is not only determined by the perceptive process, but is also formative of what is perceived (Zhang, Zhang & Kornblum, 1999). Zhang et al.'s studies (1999) using EEG (a measure of brain activity) and EMG (a measure of muscle activity) provide evidence that an individual is responding to a stimulus before the evaluation of the stimulus is complete. Further evidence that a readiness to respond is implicit in a moment of attuning is found in research on canonical neurons (Rizzolatti &

Craighero, 2004). Canonical neurons activate not only when an individual manipulates an object but also when that object is seen. That is, some of the motor neurons that activate when an individual responds to an object by handling it also activate as part of the visual process. Contemporary findings from research into the central nervous system suggest that there is no clear cut temporal distinction in which perception precedes the readiness to respond. A readiness to respond is implicit in perception rather than being a subsequent stage in neural processing. Another aspect of the arising of an attitude that was not highlighted by Mead, but that has since gained considerable attention, is the affective response. The somatic marker hypothesis (Damasio, 1996), for example, proposes that a moment of attuning is, in part, an affective physiological adjustment to the situation. This adjustment is based on an individual's previous affective experience in similar situations and manifests itself as a somatic readiness to respond.

According to Mead (1934), in the arising of an array of attitudes, there is a readiness to respond in alternative ways to a situation. The multiplicity of arising responses constitutes the meaning of the situation. The arising of multiple responses in the central nervous system is a central premise of neural networks (Cohen et al., 1992; Rumlehart et al., 1986) and empirical evidence in support of this premise has been recorded (e.g., Praamstra & Seiss, 2005).

Mead also proposed that, in the arising of an attitude, an individual takes the attitude of another. An individual understands the actions of other people and can respond to the action even before it is completed in an overt act. Recently, neuroscientists and cognitive psychologists have turned their attentions to the study of mirror neurons in primates (but not humans) (Rizzolatti & Craighero, 2004). Mirror neurons suggest a

mechanism of the central nervous system that make it possible for an individual to take the attitude of another. Like canonical neurons, mirror neurons are visuomotor neurons that activate during motor activity and visual stimulation. The distinction is that unlike canonical neurons which activate when attuning to or manipulating objects, mirror neurons activate when either attuning to another's action or when actually performing the same action. The prevailing hypothesis is that mirror neurons facilitate the understanding of action. When an individual observes another individual's action, the same neural response in the observer is activated as would be activated if the observer were performing the action. This facilitates the observer's anticipating the outcome of the action being observed.

The brief survey of empirical findings provided thus far has suggested that, in accordance with Mead's account, attuning is an active, interpreting process through which an individual's familiarity with a situation arises in a readiness to respond, often in more than one way. As we have seen, there is no temporal distinction between perceiving and responding. A Meadian theorist might even have the temerity to claim that after a half century of relevant research, cognitive science has provided a picture that coheres more closely with Mead's account of an active, responding individual than the paradigmatic information processor typically presupposed in such investigation.

Nevertheless, despite the general coherence of recent empirical findings with a Meadian account of human acting in the world, the cognitive science description of a moment of human agency provided above is still incomplete. Research into mirror neurons, for example, illustrates the limitations inherent in any analysis of Mead's account through the socially and contextually blind lens of much traditional cognitive

science. When seeing a teacher pick up a piece of chalk, mirror neurons may facilitate the student's understanding that the teacher is picking up an object, but without familiarity with classrooms and the perspective of the teacher, mirror neurons cannot explain the student's taking the attitude of the teacher who is about to write a math question on the chalkboard.

There are two concerns that might be raised by a cognitive scientist. The holism of a Meadian approach might lead a cognitive scientist to claim that it is premature, even now, to attempt to provide a comprehensive description of human agency within a social process. Our understanding is confined to models of cognition and the central nervous system that are still highly simplified models of particular aspects of cognitive function. Many of the contemporary interpretations of research that can be adopted in support of Mead's thinking are based on studies conducted in controlled experimental conditions rather than studies of the real social situations that interested Mead.

The other concern that a cognitive scientist might raise would come from a diametrically opposite direction. It might be claimed that Mead's account is imprecise and has been superseded by the detailed scientific investigations of recent years. Hundreds of volumes in cognitive science and neuroscience have been written about many aspects of the above description of a moment of human agency. Our knowledge about the central nervous system and perceptual processes, for example, has grown by leaps and bounds since Mead first formulated his account of human agency a century ago. Furthermore, Mead did not elaborate the exact processes by which an individual organizes his attitudes and selects an overt response in reflective conduct. He proposed neither rational nor heuristic solutions. Mead's conceptual framework and terminology

might also appear somewhat vague by the standards of cognitive science. The term "meaning", for example, would now encompass mood, emotion, semantic memory, and working memory (to name but a few aspects).

These objections have merit and will not be contested here. Although the models and findings of cognitive science outlined above give credibility to a Meadian account of human acting and agency, I do not propose that such an account has already been verified in its entirety through empirical research nor that Mead anticipated the detailed findings of contemporary cognitive science. Interpretations of research that posit neural networks, electro-chemical reactions, somatic states, and visuomotor neurons are all plausible contributions to a description of human acting and agency, with the caveat that there is much ongoing discussion among cognitive scientists about what, and the degree to which, particular models of cognitive and neural functioning best explain empirical observations (e.g., Freeman, 2003).

It also is the case that the findings and models discussed above in terms of a Meadian account might also be construed as support for the reductive physicalist paradigm. All the studies were undertaken within a reductivist paradigm in which physiological measures and reaction times were the key observations, and neural and cognitive functioning were the key modes of explanation. The neural network model that now underpins many models of cognition is typically a computational model tested against the reaction times of people in controlled laboratory conditions (e.g., Cohen et al., 1992). The somatic marker hypothesis (Damasio, 1996) focuses upon electro-chemical reactions in the brain and the release of hormones that affect somatic states. It can be argued that cognitive science points to an individual that is reducible to a computational

brain that itself is reducible to electro-chemical reactions, and that these reactions are aggregates of bits of matter conforming with the laws of physics.

Thus, the findings of cognitive science can offer support for both a reductive physicalist and an emergent Meadian interpretation of human agency. As discussed earlier, the data are not in question, the interpretations are. As Merleau-Ponty (2002) once wrote, "[s]ince explanation is not discovered but created, it is never given with the fact, but is always simply a probable interpretation" (p. 133). This thesis proposes that a Meadian interpretation in which human agency is embedded in a social process is a more plausible account of research findings than reductive physicalism. The fundamental difference between the two approaches is that a reductive physicalist interprets a moment of human agency in terms of the physiological mechanisms of an individual whereas the Meadian interprets a moment of human agency in terms of an embodied individual embedded in a situation constituted by life and social processes.

At the moment of attuning to Saida's notes, neural assemblies activated in my brain and chemical processes altered my somatic state. However, neural assemblies are activating and somatic states are changing at every moment, not just this specific moment. From the standpoint of cognitive science, the explanation for this particular moment of human agency must include *which* neural assemblies activated and *which* somatic state was selected. At this particular moment, my occupation of a perspective and the arising of attitudes within it was present within a response of my central nervous system to the light and sound waves I encountered. The response, however, was a specific response to a specific situation. Leaving aside the ontogenetic development of the perspective I occupied in this particular situation (which, I will argue in Chapters

three and four, cannot be explained solely in terms of the central nervous system), the situation itself played a determining role in my response. The momentary arising of an attitude—an adjusting of the somatic state of my central nervous system—is a thread within a larger process that constitutes the situation. A situation, as has been noted earlier, is the array of possible responses open to an individual in relation with other things and individuals. At this particular moment of human agency, the situation not only included myself, the notes to which I was attuned, the classroom and the people present in the classroom, but also the social practices present both in my perspective and the perspectives of others in the room, as well as the perspective of Saida which was present in my attitudes to her notes. A description of a moment of human agency is incomplete without a description of the situation within which it took place. Objects exist within a situation and in relationship to the situation. As Mead (1934) was recorded as saying, food is only food in terms of its relationship to the organism that consumes it. Likewise, Saida's notes are only notes in relation to the people that treat them as notes.

> Whatever may be said of a mechanical universe of ultimate physical particles, the lines that are drawn about objects in experience are drawn by the attitudes and conduct of individual living forms. Apart from such an experience involving both the form and its environment, such objects do not exist. (p. 158)

Without the situation as an aspect of the description, no account can be provided for how attitudes arose nor can any account be provided that distinguishes one response from another. If the situation were not intrinsic to the moment of human agency, the only distinction between my browsing Saida's notes and blowing my nose with them would be the somatic state of my central nervous system.

Agentive Activity as Engagement Within the World: The Act in a Situation

I turn now to a description of the relational processes that constitute the situation. A situation is as intrinsic to the moment of human agency as the physiological mechanisms through which the act was performed. At the moment of human agency in question, the most salient aspect of the situation was my relation to Saida's notes. According to Mead (1910, 1934), such a relation is rendered through conduct between the individual and the object. "Meaning is a statement of the relation between the characteristics in the sensuous stimulation and the responses which they call out" (Mead, 1910, p. 402). Starting with the possible physical engagement between an individual and a physical object (such as Saida's notes), we shall examine the extent of the relations between an individual and the situation with which he is engaging.

The meaning of an object is in the organization of responses towards it that an individual assumes. Many of the responses called out have a manipulatory phase (Mead, 1938) while other more avoidant responses nonetheless include a prereflective anticipation of the manipulatory phase. The manipulatory phase is present in the arising of an attitude not as an abstract hypothesis of how the object may be encountered, but as a physiological readiness to engage with it. An individual's attitude to an object in a situation is through tactile experience as much as visual experience. As we have already discussed in terms of motor responses, the manipulatory phase is implicit in the moment of attuning to the object. This phase is intrinsic to a moment of attuning and the attitudes that arise as a readiness to physically engage with a situation (Mead, 1938; Rosenthal & Bourgeois, 1991). The relation of the individual to an object is one of action in which the practical purpose of the object possesses a tangible role in shaping the response of the

individual. As Merleau-Ponty (2002) observed, an individual does not seek his hands when placed before familiar items such as scissors because hands are among potentialities already mobilized in the moment of attuning. The individual is "the central end of those 'intentional threads' which link him to the objects given" (Merleau-Ponty, 2002, p. 121). The object is a means encountered in a specific situation for the purpose of facilitating activity (Mead, 1938). Rather than encountering the world as a Kantian (or information processing) system of qualities combined into representations that are independent of the situation, the individual encounters the world as an embodied agent acting in a manipulable world (Merleau-Ponty, 2002).

The individual anticipates the response of the object to physical contact (Mead, 1938; Rosenthal & Bourgeois, 1991). The resistance of the object to manipulation is present in the attitude of the individual. Given that an attitude is a readiness to respond and a human individual takes the physical response of a manipulated object into account when attuning to it, we can say that the individual takes the attitude of the object (Mead, 1938). As we have just seen, however, the attitude that arises is not (in most cases) a readiness to manipulate the object for the sake of encountering the physical response that will be encountered. Rather, an object is there for the sake of purposeful activity. When an individual attunes to an object, he takes the role of the object (Joas, 1997; Mead, 1938). The role of the object is in most cases a social role, a role that has been bestowed upon the object through social practice. The attitudes of the individual to the object are social attitudes; a readiness to respond to the object within a social process in order to facilitate the individual's purposive activity. This is not a claim that every object is used in social interaction with another individual. It is simply the claim that the attitude called

out by, say, a hammer is an attitude formed within the practices of society and shared by individuals within that society.

My prereflective awareness of Saida's notes was a response to a means called out by a tactile, physical object embedded within a social process. The relation between myself and Saida's notes was not a relationship between an object and my representation of it, but rather a relationship between my activity in the world and the social processes through which this activity is facilitated. At the moment of attuning to Saida's notes, this relationship and the social processes to which it was bound were already present. Neither Saida's notes nor my attitudes to her notes can be abstracted from the situation. They are both presupposed in any attempted analysis of this moment of human agency.

In this particular moment of human agency, the situation did not remain as a prereflective array of attitudes to be consummated in purposeful activity. The situation arose into reflective conduct through which I organized my attitudes and took a perspective constituted by my own readiness to respond to the situation and the anticipated responses of others. In reflective conduct, I deliberated on the possible outcomes of alternative modes of conduct. Reflective conduct, however, took place against a background of prereflective "familiarity" (Mead, 1910, p. 400) with the situation and it is to this familiarity that I shall now turn.

According to Mead (1910), there is a distinction to be made between the meaning that arises in a moment of attuning and the awareness of that meaning that arises in reflective conduct. When an individual attunes to an aspect of a situation that has been encountered in similar situations many times before, there is a "perfection of adjustment" (p. 400) between that to which the individual has attuned and the attitudes it calls out, so

that the entire act is consummated without coming into reflective conduct. Aspects of a situation with which an individual is most familiar are least likely to arise in reflective conduct. Indeed, it is fundamental to the economy of the act that an individual does not deliberate on each possible response to each aspect of a situation. Despite the absence of reflective conduct, meaning is nonetheless present in the relation between the individual and the situation. This is apparent in how subtly different situations elicit different responses in an individual (Mead, 1910, 1938). For example, if an individual needs to jot a quick note when talking on the telephone, an opened envelope may serve as a notepad, but a sealed envelope may not. The prereflective act is replete with a meaning that is distinguished in the relation of that to which the individual has attuned and the attitude revealed in overt conduct.

Mead discussed this prereflective familiarity in terms of an individual's adjusting to "a world that is there, a world of objects of which we are not reflectively aware" (1938, p. 220). "A world that is there" and the familiarity with which individuals encounter and act within it was investigated in great depth by Martin Heidegger (1962). Heidegger's approach to the investigation of human agency was very different to that of Mead and it would be a major scholarly project to document all of the similarities and distinctions in the thought of these two scholars, a project that cannot be engaged with here. In general terms, however, Heidegger's focus was an investigation of human existence within an existing world. Mead's focus was on human activity and the constitution of an individual within a dynamic social process. Moreover, Heidegger's concept of world referred to in the following paragraphs is not the world of events discussed by Mead, but a world of beings (although, as shall be discussed in Chapter six,

there are notable similarities between the two scholars as to what constitutes the world). No claim is being made here that the thought of the two are entirely without contradiction nor that they can be merged into a single school of thought. However, there is much that Heidegger can offer to a Meadian investigation of a moment of human agency that provides a substratum to Mead's discussion of the world of events within which the human agent is embedded. To illustrate this and deepen our investigation of "a world that is there," I shall briefly turn to Heidegger's discussion of familiarity so as to elaborate upon this aspect that is present in almost every moment of human agency. I shall then return to Heidegger in the final two chapters to further this aspect of the investigation.

Early in *Being and Time*, Heidegger (1962) discussed how individuals encounter the objects around them as part of a background familiarity with the world. Like Mead, Heidegger notes that in daily activity, individuals encounter objects as means rather than as representations of a physical structure. In this everyday encountering of objects, they are "ready-to-hand" (p. 99). Objects exist to the individual as the possibility for facilitating practical activity in the world. Heidegger explained that the existence of objects is constituted by their purpose: a "towards-which" (p. 99) revealed to the individual through the manipulation of the object in activity. The more an individual manipulates the object as a means for activity, the more the relationship becomes a relationship with "equipment" (p. 98). That is, an object does not stand alone in its relationship to the individual but rather it is inextricably bound to a world of objects that serve as a means for purposeful activity. A door handle is only a door handle in that it serves the purpose of opening a door, which in itself serves the purpose of providing access to a room, which provides warmth or comfort or a space to work. Encountering an

object as a means for purposeful activity necessarily takes place within an understanding of a world of equipment.

The towards-which of the ready-to-hand is a relationship of an individual towards a projected outcome (Heidegger, 1962). The ready-to-hand, however, is not simply encountered within a chain of purposive activity. The composition of the natural world is also involved. Cars, for example, are produced to travel across distances and clothes to keep out the cold. Moreover, when an individual encounters an object as ready-to-hand, she also encounters an involvement with the related ready-to-hand objects upon which the object depends, such as keyboard for an instant message or nails for a hammer. These objects then refer to the wood, plastic, or other materials from which they are made, which in turn refer to the natural world from which these materials originated. Furthermore, the projected outcome of activity must be a projected outcome for someone. Instant messages, for example, are written for someone to read. Encountered with the ready-to-hand is an involvement with people. A person reads an instant message and a generalized public reads an internet site. The involvement of individuals is implicit in the constitution of the ready-to-hand. A national flag flying outside an office building was raised by a person and calls on the shared identity of a nation of people. A piece of trash on the street has been dropped by one individual and will be swept away by another. The world that is there is a world of people. People, however, are not ready-to-hand. Rather, in constituting the ready-to-hand, they are in the world with each other. Other people and the ready-to-hand are inextricably embedded in a background familiarity with the world that is present in an individual's momentary attuning and adjusting to a situation.

Crucially, the ready-to-hand is not a “subjective coloring” (Heidegger, 1962, p.101) to a world of “present-at-hand” (p. 99) objects; namely, objects constituted by physical properties such as mass, particles, and spatial coordinates. Individuals engage with the world of the ready-to-hand and only from within the ready-to-hand, do they encounter the present-at-hand. Take the example of a door handle that in our daily lives is a ready-to-hand means for our activity. Not only is it an object that—as Mead would have said—does not typically rise above the threshold into reflective awareness, it is an object that presents itself to us as ready-to-hand, as equipment embedded in our background familiarity. If the door handle were broken—perhaps it turned but the door did not open—the door handle possesses an “unreadiness-to-hand” (Heidegger, 1962, p. 103) which brings the individual to attend to its properties such as the mechanism of the handle, the material from which it is made and so on. In this way, the door handle becomes present-at-hand to the individual, but even here it is not entirely devoid of the ready-to-hand as it is still a door handle embedded in the background familiarity, albeit one that is not serving its purpose. Even the physicist’s analysis of the door handle as possessing a certain mass and constituted of certain atoms bonded in a certain way is not purely present-at-hand unless the physicist desists from considering these properties as belonging to a door handle, for once such an involvement is present, the reference is embedded in our background familiarity with the world. This was also discerned by Mead (1903) when he noted that “... we know that controlled sensuous experience is the essential basis of all our science. Even the most abstract speculation must have some point of sensuous contact with the world to render it real” (p. 96).

In short, when an individual encounters an object or other individual, he does so within a world that is already and immediately understood in the background familiarity of our everyday activity. The human agent engages for the most part with the ready-to-hand embedded in the background familiarity, rather than with objects and individuals abstracted from the situation within which they are encountered. This accords with Mead's observation that an object (such as food) exists only in relation to the individual that encounters it and illustrates the rootedness of the object in a situation that is always understood within a background familiarity.

Crucially, there is no need for a disjuncture between the philosophical understanding of the background familiarity and the findings of cognitive science. There is no demand that the research results of cognitive science be interpreted as evidence for a reductive physicalist world. Although Heidegger (unlike Mead) had little interest in the physiological mechanisms with which an individual engages with the world, such physiological mechanisms are nonetheless part of an account of a moment of human agency. As we have seen, the empirical evidence suggests that the physiological mechanisms of the central nervous system facilitate the human agent's active engagement with a familiar world. This thesis will continue to justify and elaborate this claim in the following chapters.

The world of human engagement is not assembled through the discovery of physical properties that can be analyzed and constructed into a collection of things known in their entirety. Rather the world is "wherein" (Heidegger, 1962, p. 93) individuals encounter others and engage in daily activity. This is not to deny the physical reality of the present-at-hand, but rather to emphasize the practical nature of human relatedness to a

world that is already there. As Mead (1938) wrote: "If knowledge is discovery of the unknown, this world is not known—it is simply there" (p. 45). [7]

With a description in place of the background familiarity within which my attitudes arose, there is still an important aspect of the description of this moment of human agency that is missing. Saida's notes entered into my reflective conduct while other students' notes, magazines, and books did not. An individual's familiarity with a world that is already there clearly is not a world in which everything is there without distinction, significance, or value. It is to this issue that I shall now turn, and again I shall refer to Heidegger's (1962) *Being and Time*. As previously clarified, an individual's involvement is an involvement with a world of equipment. As an individual encounters the towards-which of a ready-to-hand piece of equipment, she encounters it within a background familiarity. As I encountered Saida's notes, the towards-which of Saida's notes is embedded in the towards-which of the upcoming examination which is embedded in the towards-which of my academic career. I encountered Saida's notes in a world of examinations, grades, parental expectations, and personal aspirations. As Heidegger might have said, I encountered the notes within "a totality of involvements" (p. 118). For Heidegger, the totality of involvements is embedded in the individual's understanding of the "for-the-sake-of-which" (p. 119) of personal existence; a singular understanding of one's own individuated being among others that shapes all of one's concerns. The concept of the *for-the-sake-of-which* may be a step beyond what is required for a Meadian approach to the investigation of human agency. Nonetheless, a description of a moment of human agency would seem incomplete without reference to

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[7] "Discovery" here refers to the methodical findings of science rather than to Heidegger's revealing of the world through disclosing

the concern with which individuals engage with the world. An individual's occupation of a perspectival opening into the world is one of concern. Individuals care about the kind of beings they are (Heidegger, 1962; Sugarman, 2005). In the final chapter, I shall investigate whether a Meadian account can be extended in this way.

Care is an integral aspect of much human agency. There is no need to claim that care is equally present in all moments of activity. One would assume, for example, that the decision to use the washroom before checking one's email is less replete with care than the decision to attend a political rally, even though both may arise in reflective conduct. Nonetheless, many seemingly banal moments of activity are rooted in a totality of involvements emanating from an individual's care. My browsing Saida's notes is such a moment. Care was necessarily present in the moment even before the attitudes that arose with my attunement to the notes were organized in reflective conduct. If I had not cared for the kind of being that I was, there would have been no reason to concern myself with the towards-which of the notes. My attuning to Saida's notes was "rooted in distinctions of worth" (Sugarman, 2005, p. 798). I sensed the significance of the notes within the totality of involvements that issued from the care I have for the kind of being I am. The significance of the notes was bound to the worth of the towards-which offered by the notes which was bound to the care I have for the kind of being I am. An account of a moment of human agency needs to account for the sense of worth that arises in an individual. While the significance of certain objects and the worth of certain purposes change from person to person, culture to culture, and era to era, the sense of worth in itself is part of the constitution of human agency. We all, as human beings, have this sense, this placing of value upon ourselves and the world around us and this sense is

present in a moment of attuning, prior to either reflective or overt conduct. Although much of this aspect of human agency is best accounted for in the ontogenesis of an individual within a historical, cultural context, it is important to note that within the description of a moment of human agency, care and the derived distinctions of worth are present in the situation; in the relation between the individual and the world that is there. As we saw earlier, it is a relationship between an individual's activity in the world and the social processes through which this activity is facilitated. Without a world that is there, no account can be provided for how a distinction of worth arises. As I shall discuss in the next chapter, distinctions of worth are not only assumed and consistent with the positions taken herein, but are also fundamental to the underlying premises of neuroscience. An account of a moment of human agency is an account that is centered on the perspectives of human individuals accumulated through a history of engagement with life and social processes

One might pause here to consider the intricacy and perhaps the immensity of a moment of human agency. It is a moment described by the activation of individual neurons and also by an individual's relations with a totality of involvements in a world that is there, a world that is already present in the moment of attuning. Although it is a description of the kind of agentive act that we as individuals engage in throughout our everyday existence, it is also a description that is almost impossible to grasp in its entirety in a moment of reflection. One may methodically step through the different aspects of the description—as has been done in this thesis—and attempt a thematic grasp of aspects of the moment such as attitudes, neural mechanisms, situations, and background familiarity. However, comprehending the simultaneity of all these aspects within a moment which in

clock time may account for less than a second is perhaps beyond the conceptual capacity of most individuals, certainly beyond the capacity of this author. Perhaps one reason for this conceptual challenge is the lack of precision in the term *present*. The description provided above is an attempt to provide an account of that which is present in a moment of attuning. Arguments have been provided as to why we need to consider the presence of certain aspects of a moment of human agency as intrinsic to its description. As with many languages, the English language use of the word present implies both time and place. It has been argued herein, however, that a description of a moment of human agency cannot be a description of an individual central nervous system. The situation, the background familiarity, and the world in which individuals are with each other are equally present and intrinsic to the description. I will argue that human agency is within a process of intertwining, physical, biological and socio-cultural threads (Martin et al., 2003).

Human agency is not sufficiently explained by the mechanisms of human physiology (Heidegger, 1962; Macmurray, 1957; Martin et al., 2003; Merleau-Ponty, 2002). A description of human agency does not demand that the totality of involvements is present within the individual's central nervous system as information is present in a library or as data are encoded in a computer. Rather, using the terms of cognitive science we could say that individuals are primed to engage within the world, with the central nervous system activating in response to a temporal flow of events. The term "present" is used here to refer to a presence within the events that constitute this process. The human agent is a profoundly complex conduit through which social, psychological, and biological processes flow. In a moment of attuning, a wave of experience flows into the individual, often flowing into acutely honed patterns of response but occasionally raising

a turbulent array of possible responses as an unfamiliar wave is encountered. The arrays of attitudes that constitute the meaning of a situation are present in the central nervous system as a flow of neural events that are intrinsically involved with and shaped by a flow of physical, biological, psychological and social events that extends far beyond the central nervous system. Moreover, an individual human agent is one of many such conduits co-existing in a shared world. Rather than being an autonomous agent dependent upon a repository of internally created data about the world outside, a human agent is better described as a moderator of this flow of activity. In encountering the flow, attitudes arise in an individual. These attitudes are facilitated by the structure of the individual as a being inextricably connected to and dependent on the world. Individuals are not "atomized individuals, but rather, active respondents within nested and overlapping systems" (Emirbayer & Mische, 1998, p. 969). To say that meaning is present within the central nervous system is not to say that meaning is confined to or resides within the central nervous system. To use a useful, but incomplete metaphor, explaining a moment of human agency without providing an account of the world encountered in that moment is like explaining a moment in the history of a sandy beach without accounting for the waves and the tides and the history of the flow of waves upon the beach that formed the shape with which the beach entered the moment under investigation. One cannot explain the neural networks of interconnected dendrites and axons in the central nervous system without recourse to the flow of events in which they have been formed any more than one can explain the grooves and channels of a sandy beach without recourse to the waves, weather and landscape that have determining influences on the beach.

The key shortcoming in such an analogy is the passive non-responsive nature of a beach. The individual is not a passive being determined by social processes. As shall be discussed shortly, the human agent is an active agent with a determining influence over his or her activity. Indeed, it shall be argued that this activity is a condition for the possibility of a moment of human agency such as the one just described.

Chapter 3: The Enabling Conditions for a Moment of Human Agency in Microgenesis

The Momentary Active Attuning of an Individual: The "I"

The description in the previous chapter began with the moment to moment attuning of an individual coordinating with an ever-changing world. This is an aspect of human agency that has been of interest to psychology from its inception. James (1890), for example, had already noted that a condition for experience is a "stream of thought" (p. 304). Mead also (1903, 1913, 1934) argued that there could be no experience and nothing to reflect upon without an active thinking process. James had seen the "stream of thought" as the thinking subject that conducts the thinking about experience objectified in an inner world of thought and feeling. Mead, however, saw this stream of thought as an "I" actively attuning to and engaging with the social processes of which it is a part.

The previous chapter sought to provide a description of a moment of human agency. In this chapter I shall begin to seek the enabling conditions for such a moment. The "I" will be the starting point for this investigation. That is, immediate, active attuning to a situation is indubitable from the standpoint of both a Meadian and reductive physicalist interpretation. Jaegwon Kim, for example, has a celadon vase on his desk (Kim, 1999). One might assume that the meaning of that vase for Kim is tied to a sense of value embedded deep within his cultural roots.[8] Kim may consider that his attuning to the vase and the meanings and distinctions that arise can be reduced to particles of matter conforming with the laws of physics. Nonetheless, Kim's attuning to the vase does not

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[8] Jaegwon Kim has a Korean heritage and celadon is a sophisticated ceramic style that has been refined in Korea for over a millennium.

appear to be an issue of contention for either the reductive physicalist or the Meadian theorist.

An individual directly engages with the world. Through immediate experience, individuals have a world of things and people and activity of which they are a part. If, on the other hand, experience were only found in reflective conduct, the individual would have thoughts and feelings about the world rather than engage with the world (Mead, 1903). The latter position, it should be noted, is a solipsism that is professed neither by Kim nor Mead.

Interpretations of Mead (e.g., Baldwin, 1986; Cook, 1993; Joas, 1997) emphasize the "I" as the active adjusting of individuals to their own perspectives. This is indeed a key aspect of the "I" and one that shall be discussed shortly. It needs to be emphasized, however, that the "I" is not a response to an internal representation or construction of the world, but rather, it is a moment to moment attuning to the changing world occupied by the individual. The "I" is the agentive activity of the individual in a situation (Martin, 2006). It is the individual actively attuning to the meaning present in a situation.

The "I," to Mead, is not a passive absorption of the world. Rather it is the immediate attuning and anticipatory adjusting of the individual engaged in a situation (Mead, 1912, 1913, 1934). According to Mead (1938), the attuning of an individual in a situation, including the saccades of the eyes, the shifts in attention and adjustment of the body, is an activity in itself. The active moment to moment attuning "involves an analysis of the stimulation. Back of each new content of stimulation lies a different attitude of response, interpreting this phase of the stimulation" (Mead, 1938, pp. 4-5). The attuning

of the "I" is an attuning to a situation and also a coordinating, of and through the attitudes that arise in a moment of attuning, that moves toward overt conduct.

The term "I" also refers to the immediacy of engagement in a situation. In plain English, we say *I act* or *I think*. The "I" is the active agent and cannot be brought before itself as an "I" (Mead, 1913). The "I" always remains the active agent in a moment of engagement with the world. It is the acting and attuning rather than that which is reflected upon.[9]

The "I" is also individual. At every moment, the individual is embedded in a situation and attitudes arise within that situation. The "I" engages the world through a perspectival opening. As well as engaging with the world from a fixed spatial perspective, the attuning of the "I" is both *to* perspectives and *from within* perspectives that are honed through ontogenesis and phylogenesis. It is an attuning *to* perspectives because the "I" can be an attuning to the arising of an array of attitudes. The "I" is also responding *from within* a perspective as the attuning of the "I" is subsequent to a preceding array of attitudes and is always an attuning from within a situation (even if that situation is no more than an attuning to one's own attitudes). As Mead noted (1925), the very embodiment of a human agent places the individual within a perspective. Engagement with the world is constrained to forms of activity facilitated by our embodiment. As we shall shortly discuss, the "I" is also attuning from within a field of understanding; that is, the background familiarity introduced in the previous chapter. The

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[9] In *The Mechanism of Social Consciousness* (1912) Mead considered the "I" to only ever be implied but never an object to which one can attune. In The Social Self (1913) he slightly changed his position, saying that one can bring the "I" as an object to reflective conduct, but it is no longer the "I" with which one is attuning. This thesis will adopt his former position and will justify this position later in this chapter.

development of this understanding through ontogenesis is formative of the perspectives from within which the “I” acts. Individuals are with each other in the world, but as ontogenesis is never identical—even with monozygotic twins—perspectives are always to some extent singular, occupied, at least in any particular instantiation, solely by one individual and attuned to by a single “I.”

It should be noted that attuning to a situation is not unique to people. A rabbit or a mouse also attune and anticipate their immediate environment. Nonetheless, it will be argued that the “I” is uniquely human. The next step of the investigation will be to consider that to which the “I” is attuning. Without attuning to attitudes and perspectives, the “I” would be no more (and maybe less) than the attuning of a rabbit.

Preliminary Outline of Some of the Enabling Conditions for a Moment of Human Agency

Before continuing, however, a preliminary outline of some of the enabling conditions for a moment of human agency that can be inferred from the description of that moment provided in the previous chapter will help to guide the investigation.

First, for any human activity to take place at all, the individual must necessarily be in a situation rather than in a void. Recall that a situation is the inter-related conditions and circumstances oriented to by individuals and groups of individuals. Moreover, a situation is a confluence of processes that are not entirely random. There is a degree of regularity in many processes so that a situation is a flow of events that is to some degree similar to other situations. This shall be elaborated on in the third condition. Also, a situation presupposes a world in which the situation occurs. For any situation to take place, the situation must necessarily be in a world. The world can be understood for now as Mead’s world of events. This world, however, will be revisited in Chapter six.

Second, an individual is capable of attuning to the situation.

Third, in attuning there is a readiness to respond. To be ready is to be ready to do something. Readiness implies that an array of possible responses is available to the individual and that the outcome of any particular response is at least somewhat predictable. If the events to which an individual attuned were entirely random and unpredictable, the individual would not be ready to respond in a coherent manner. A condition of human agency is that the situations in which an individual engages are typically situations in which the relations between objects and individuals cohere to a pattern or process with a degree of regularity.

Fourth, the physical, social, and life processes that constitute the world are not, from the perspective of the individual, entirely regular, repetitive, or constant. There is a degree of uncertainty. As shall be discussed, in a world of complete regularity, there would be little demand for deliberation. This condition combined with the previous condition might be considered as a summation of what has come to be referred to as the "edge of chaos" which, according to Kauffman (1995), is defined as "a grand compromise between order and surprise" (p. 15). The edge of chaos refers to a world of events that is neither entirely fixed and regular nor entirely random. It is a premise of complexity theory that shall be addressed in Chapter five.

Fifth, agentic activity is purposeful. By purposeful, I mean that a particular attitude involves a particular anticipated outcome. An act is an act for the purpose of engaging in a situation and it is an act that can be consummated when the situation has changed in accord with the attitudes of the individual (Mead, 1938).

Sixth, an individual can distinguish among the effects of different possible responses and purposefully act toward a particular outcome. Not only is an individual ready to respond, but the individual can distinguish between the possible outcomes of different responses. This is not necessarily a distinction made in reflective conduct. In many instances, the distinction is only evident in overt conduct. When cooking a pancake, for example, one reaches for a larger plate from the kitchen cabinet (rather than a smaller plate) without any pause to choose which plate to take. The distinction in outcome (in this case a plate that accommodates the size of pancake) and the intended consequence of the act are inherent in the act of reaching.

Seventh, an individual has bio-physical mechanisms that facilitate the conditions for human agency outlined herein. Two issues need to be raised about the ordination of this condition. Firstly, there is no temporal ordering of the enabling conditions for a moment of human agency, nor is there any prioritizing. The bio-physical mechanisms must exist when any of the delineated conditions exist. At the same time, precisely because there is no temporal ordering of these conditions, it is not being claimed that bio-physical mechanisms are the cause of the previously delineated conditions. This matter shall be discussed in some depth in the fifth chapter.

Eighth, the response of an individual in a social situation assumes a reliable ability to anticipate the responses of others engaged in that situation and, in accordance with the fifth condition, to distinguish the effects of different manners in which other individuals might respond.

Ninth, in order to engage in the social processes of human society, an individual purposively attunes to and assumes the same attitude as another. That is, an individual is

ready to respond functionally in the same way as another to a situation. On the face of it, this condition appears somewhat circular. The social processes of human society depend on individuals capable of engaging with these processes and yet a condition of human agency is the ability to engage with social processes. This way of understanding things is not circular because, over phylogenetic and ontogenetic temporal spans of analysis, social processes emerge from the agentive activity of individuals and become a determining influence over agentive activity. In the microgenesis of a human agentive act, the individual and social processes exist in tandem within a situation. In phylogenesis and ontogenesis, an account must be provided as to how individual human agency and social processes emerged as mutually formative processes. The emergence of social processes through the conduct of individuals is a key feature of a Meadian analysis of human agency and will be developed in detail as this thesis continues.

An account of a moment of human agency is an account of a moment in which an individual has a self-determining influence over her own conduct. That is, the events we consider to be explanatory of an individual's conduct include her own deliberating about and coordinating of her own purposeful acts. Such an account, it will be argued, demands the conditions outlined above and argues that an individual human agent whose activity is enabled by these conditions cannot be reduced to physical matter.

As may be apparent to many readers and as shall be discussed in Chapter five, the first seven conditions pertain to living agency in general rather than solely to human agency. The eighth enabling condition for human agency applies to many mammals and birds. The ninth condition may pertain only to human agency.

In this chapter and the next, I focus on the ninth condition: an individual purposively attunes to and assumes the functionally same attitude as another. A human individual is ready to respond to a situation in the same way as another. Crucially, this is a mutual process, not primarily an imitative one. An individual in active engagement with a situation assumes in her conduct that others may take the same attitude as hers. This is distinct from the mother hen that pecks at the ground and is followed by her chicks, for the mother hen does not assume in her conduct that the chicks are ready to respond in the same way (Mead, 1922). It is also distinct from monkeys that have different alarm calls for different predators (Hauser, 2000). Even if the shriek issued at the sight of a snake purposively calls out in other monkeys the same response as that in the monkey that issued the call (which is only one possible explanation for the monkey's conduct), the monkeys are not purposively attuning to and seeking the same attitude as others. They are reacting to the shriek with what Vygotsky (1987) referred to as the contamination of fear.

Purposively attuning to and assuming the attitude of another is a key enabling condition for a moment of human agency. Our engagement in situations as varied as lessons, dinner parties, religious ceremonies, military conquest, and trade all depend on our ability to take the attitude of another. Language itself depends on taking the attitude of another as does the deliberation arising in reflective conduct through which individuals are able to reflect and decide on their own acts.

Founding the ensuing discussion on Mead's thought and the description of a moment of human agency provided in the previous chapter, I shall develop an argument to support the claims just made. To do this, several issues need to be addressed. The first is how individuals come to respond in accord with a social situation, assume their own

roles in a social process, and respond in accord with the perspective of others. The second is how the "I" attunes to the arising of attitudes and its implications for agentive deliberation. The third is how individuals can respond other than in accordance with the social process; that is, how individuals assume a self-determining role in selecting their actions over-against the demands of social processes. The next chapter addresses how individuals come to occupy the broad array of perspectives that equip them with a readiness to respond within the social processes of human activity. Emergence, including the emergence of social processes, is addressed in Chapter five.

Engaging with Others: Assuming Perspectives

Although much has already been said about the arising of attitudes and the moment to moment coordinating of attitudes in response to the attitudes of others, little has been said regarding the social nature of this process. Individuals respond to each other through a vast array of vocal, hand, head, and body gestures (Mead, 1910, 1934). Through the use of gestures, individuals in a situation are able to mutually adjust their attitudes towards the situation. There are occasions in human conduct when the gesturing of an individual is not a purposeful signal to others in the situation. The student fiddling with his pen as the teacher speaks, for example, is not purposefully announcing his lack of interest to the teacher. Most gestures, however, are purposeful signals to others—a call on others to adjust their array of attitudes in some way. A purposeful gesture of this kind is referred to by Mead as a significant gesture or significant symbol.

An individual makes a significant gesture, say by pointing. In making the gesture, he takes the attitude of the other. He is ready to respond to himself as the other would respond. By pointing, the individual is purposively attending to an aspect of the situation.

Simultaneously, he is responding to his gesture as the other responds by purposively attending to the same particular aspect of the situation. Inherent in such an interaction is a shared intentionality. We need to set limits on this claim. It is not a claim that an individual assumes the motives of others or empathizes with the emotional and deliberative perspectives underlying another's conduct. Nor, for that matter, is it denying that individuals often do empathize in this manner. Rather, as outlined in the previous section, an enabling condition for human agency is that an intended outcome is inherent in a readiness to respond. Shared intentionality in this thesis refers to a specific claim. Namely, a condition for human agency is that inherent in a particular significant symbol is a particular purposive attitude that can be assumed by two or more individuals. Such a significant symbol can be any kind of gesture or sign. In social conduct, it is the vocal gesture—language—that is the most prevalent.

As a call for others to adjust their attitudes, the individual who is indicating with a significant symbol must have a sense of the attitudes that the significant symbol will call out in others. The significant symbol "calls out in the individual making it the same attitude toward it (or toward its meaning) that it calls out in the other individuals participating with him in the given social act" (Mead, 1934, p. 46).

We need to consider in a little more depth the claim that an individual takes "the same attitude" as another (Mead, 1925, p. 272) and that a significant symbol calls out "the same attitude" (Mead, 1934, p. 46) in two or more individuals. Prima facie, there is reason to doubt this claim. Significant symbols such as justice, hockey, or soup may call out very different attitudes in different individuals. However, it is pertinent to recall here that, in this thesis, an attitude is considered as a momentary and particular readiness to

respond. Thus, if a Scot were to point at a haggis and utter the word “eat,” the hand gesture of pointing will call out in both individuals (speaker and hearer) the same particular functional response of attending to the haggis and the vocal gesture will call out the same readiness to respond by eating. Nevertheless, the overt conduct of the Scot may be very different to that of an English inter-actor. Recall that situations are characterized by the relation of an individual to the world. This (already simplified) situation may be very different for the Scot and the Englishman. The reason is that the attuning to a haggis with a readiness to eat calls out a very different array of attitudes in each individual because they are not only responding to the one particular symbolic symbol, but to the situation within which the significant symbol is embedded. As discussed in the previous chapter, an attitude tends not to arise autonomously, but rather within an array of attitudes; that is, an array of possible ways of responding. To the Scot, the array of attitudes might include a readiness to eat the haggis, a readiness to share, and a readiness to celebrate a national identity. To the Englishman, the array of attitudes might include a readiness to please a friend, but also a readiness to withdraw from an unfamiliar smell, and a readiness to withdraw from eating sheep’s stomach. When interpreted in this light, Mead’s (1934) claim that a significant symbol calls out “the same” (p. 46) attitude in both the signifier (the individual making the symbol) and the interpretant (the individual attuning to the symbol) still holds. The significant symbol “eat” calls out the same particular attitude in the two individuals: a readiness to eat. Yet this significant symbol is embedded in a situation and the situation may call out a differing array of attitudes in each individual. To the extent that the attitudes called out by the significant symbol are the same for all individuals involved in the act, the function of

the significant symbol is also the same for those involved. To the extent that the situation calls out a differing array of attitudes, the function of the significant symbol in that particular situation also differs. This becomes a useful illustration of how the very momentary and particular readiness of an attitude is embedded within the complex array of attitudes that form a perspective.

This example thus helps to illuminate the taking of the perspective of the other. Perspectives are intricately bound to an individual's attuning to a situation. Attuning is seldom to a single significant symbol, but rather, to a series of such symbols embedded in a situation. A complex and unique array of attitudes arises which form the perspective from which the "I" coordinates conduct. As just noted, however, the significant symbol brings recognition of its shared meaning. By attuning to significant symbols, attuning is to the perspective of the other. It is an attuning to the complex array of attitudes that arises in the other through which the individual can anticipate the overt response of the other. The individual thus takes the perspective both of the other and of herself (Mead, 1934).

This prompts the question of how an individual can anticipate the perspective (and thus overt conduct) of others given the complex and singular array of attitudes that arise in any particular individual. The individual is engaging within a world of other individuals. The conduct of an individual is primarily in relation to and in engagement with other individuals (Mead, 1912). Such conduct is social conduct (Mead, 1910). It is embedded within a social process and "partially predetermine[s]" (Mead, 1934, p. 159) the conduct of an individual. For example, when a student enters a classroom in which a lesson is in progress, the conduct of the other individuals in the class who are sitting and

listening attentively shapes the conduct of the individual. The conduct of the group, in this case the lesson, becomes a "social object" (Mead, 1925, p. 264)[10] and the conduct of the individual, in this case sitting down and listening attentively, becomes a "social act" (1925, p. 264). "The objective of the act is then found in the life-process of the group, not in those of the separate individuals alone" (1925, p. 264). Each individual occupies a particular perspective which subsumes the perspectives of the other individuals. By so doing, the perspective of the social object—a somewhat familiar social process that encompasses the social acts of several individuals—is present in the perspective of each individual. A social object is a social process whose function is recognizable by an individual. In engaging with a social object, an individual is ready[11] to adopt a particular role (such as student in a lesson or food ordering at a restaurant).

It is because the individual and the other often engage with the same social objects and occupy either similar or complementary perspectives through their social acts that an individual can anticipate the perspective of others (Gillespie, 2005; Martin, 2006). As noted in the first condition for human agency, processes, including social processes typically offer a degree of predictability.

It is important to reflect for a moment on the vast array of social objects within which an individual engages in social acts. Social objects—the group processes within which individuals participate—take many forms. The manifestations of social objects vary from rigid and sometimes mandatory processes such as attending church in 11th

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[10] This definition of social object is from *The Genesis of the Self and Social Control* (1925). Other works by Mead or attributable to Mead's thought (e.g., 1912; 1934) were less precise.

[11] Being "ready" to adopt a certain role or engage in a certain act does not imply an ability to do so. A readiness is an incipient readiness to respond in coordination with others, but does not imply the ability to complete the act. Two illustrations of readiness without ability would be toddlers trying to play with older children and sports fans watching professional sports.

Century Britain to comparatively fluid and voluntary processes such as dinner parties in 21st Century North America. Social objects also vary in their discernability. A lesson in a school is intuitively discernible to all involved as is a line up at the checkout counter of the supermarket. Other social objects are less discernible, especially as the scale of social processes in modern society grows. A traffic jam is a social object. It is part of the "life-process of the group" (Mead, 1925, p. 264) and it is a process in which the individual takes the perspective of others and performs a social act within the process of the social object, albeit not an object of mutual design or intent. The world economy is a social object. This is not because we are all to some extent involved in the transactions of which it is constituted. On the contrary, it is not a social object to many of its participants who buy food or sell services. It becomes a social object within the perspective of an individual (perhaps a banker selling currency or a truck driver buying gas) when that individual assumes the perspective of others to world trade and adjusts his perspective—his readiness to respond to a situation—accordingly. In the case of a trucker buying gas in early 21st Century North America, this perspective may be constituted by a readiness to sigh as he first attunes to the price of gas at a gas station and then assumes the perspective of new car owners in India and China.

The social objects with which an individual engages and the social acts through which that individual engages with the social objects are integrated into the perspective occupied by that individual. Mead (1925, 1934) refers to the perspective of the broad social group with which an individual engages as the "generalized other" (1925, p. 268). Crucially, the generalized other is not the perspective of others to which an individual responds. Rather, it is the perspective within which the individual responds. This will be

more apparent if we work back a little from the current point in the thesis. The generalized other is the perspective that integrates the array of social objects and their constituent social acts with which an individual typically engages. A social object is only possible if each individual engages in a specific social act that in itself takes account of the perspective of the other individuals engaging with the social object; say a student taking the perspective of the teacher and other students in engaging with a lesson. The social act of an individual is a response from his own perspective and is also a response that assumes the perspective of others towards the social object with which all are engaged. A perspective is an array of attitudes—an array of possible responses—to a situation. An individual can respond to himself as others respond because the individual assumes the responses of others within his own array of attitudes. As a perspective, the generalized other is an array of possible responses arising in an individual.

As we have seen, attuning is the active adjusting and responding to a situation. In a familiar situation such as walking into a classroom, a situation in which a well honed array of attitudes facilitates a flow into overt conduct (say, walking to one's seat), attuning is an anticipatory activity seeking out the next key moment of engagement with the social objects embedded in the situation. In this case, one might be attuning to the teacher and whether the lesson has started. In entering the classroom, the responding of the individual is a prereflective responding from within the perspective of the generalized other. The overt social act of the individual arises from a prereflective array of attitudes that assumes the attitudes of the other individuals in the forming and maintenance of the relevant social objects.

The perspective of the generalized other within which the individual engages with the world was, to Mead, a key aspect of a moment of human agency. The countless social objects from which the generalized other is constituted and the innumerable significant symbols upon which a social object often depends are unique characteristics of human activity. The attuning to social objects and the prereflective responding with appropriate social acts is also a defining feature of normal psychological functioning in clinical psychology and the benchmark of normality in the folk psychology of any culture. An individual's social conduct from within the perspective of the generalized other is also a profoundly constraining feature of human social activity. From moment to moment, fine muscle activity of facial expression, gross motor activity, and verbal expression are substantially determined by the social objects with which an individual is engaging. In most situations, individuals adjust their demeanour according to a small array of possible social acts that are determined by the social objects embedded in the situation. In contemporary North American culture, this coordination is particularly evident in a classroom or office situation, but equally pertinent in any situation in which an individual engages with others. For example, when an individual walks into a coffee shop, she walks at a certain pace over to the counter and places an order in a certain tone and with a certain facial expression. Should that individual hear a favourite song being played as she enters, she will not sing it out loud or start to dance, nor will she take a seat and start to read a book before placing an order.

Deliberation: The Attuning of the "I" to the "Me"

In the previous section, we discussed how taking the attitude of another facilitates the flow of social processes into complex social objects. Taking the attitude of another

allows individuals to assume the role of another within their perspectival engagement with the world. We have also discussed how individuals assume the perspective of the social group and conduct themselves in accordance with this perspective. The constraining influences of social processes might lead some to think that individual self-determining human agency does not exist. Rather, conduct, language, and attitudes are formed and guided by the social objects with which we engage. Mead did indeed consider the constraining influence of social processes to be formative of individual conduct. Nevertheless, Mead (1925, 1932, 1934, 1938) also considered people to be deliberative, self-determining agents. I shall now consider individual deliberation in reflective conduct and the individuation of human agency.

Attuning is not only to the individual's surroundings but also to the arrays of attitudes that arise, including the individual's own readiness to respond. Attuning in this way is an attuning to what Mead referred to as the "me." The attuning of the "I" to the "me" can be outlined in terms of four features.

First, in a moment of attuning, attitudes arise. In familiar situations, the "I" is an attuning to the ongoing flow of activity towards-which attitudes arise as a readiness to respond in the immediacy of the situation. There is scant attuning to the arising of well honed attitudes when engaging with familiar situations (Mead, 1934). As we have just discussed, in a familiar situation such as entering a classroom, an individual is attuning to the anticipated flow of events rather than to the attitudes that arise within that moment.

Second, in less familiar situations, there can be an inward shift in attuning. When the outcome of a response is not implicit in the attitudes, or possibly conflicting attitudes arise simultaneously, the attuning of the "I" shifts inward to the arising attitudes. By

attuning to one's own momentary attitudes, other attitudes arise in a readiness to respond. Attuning to the arising of attitudes thus brings about a stream of reflective conduct in which attitudes arise and attuning to those attitudes calls out subsequent arrays of attitudes.

Third, there is an individuation of the self. The perspective of others is incorporated into the array of attitudes that arise in a moment of attuning. Mead (1934) emphasizes that through significant symbols, an individual calls out the same attitude in himself as he does in the interpretant. The attuning of the "I" to the arising of attitudes, incorporates an attuning to the anticipated response of others towards the individual's own possibilities for overt conduct that are incipient in the arising of attitudes. This facilitates an attuning to the individuation of the self as the distinguishing of one's own possible overt conduct from the responses of others. The attuning of the "I" to the arising of attitudes transforms these attitudes into an object for the "I." That is, the array of attitudes becomes a "me" to which the "I" attunes. The individual is attuning to himself.

Fourth, in attuning to one's own attitudes, deliberation begins. An array of attitudes can be a predominantly emotional readiness to respond or the initial stages of a motor response to a situation. Often significant symbols also arise in attitudes. With the attuning of the "I" to the significant symbols arising in attitudes, attitudes may arise in response that are constituted by significant symbols. The stream of reflective conduct then becomes a dialogue in which arrays of attitudes that are replete with significant symbols become that to which the "I" is attuning and that which calls out an array of attitudes that is likewise replete with significant symbols. Deliberation has begun.

The Individuated Self: A Modification of the Concept of the "I"

In this thesis, I take a slightly different tack from the account of Mead's thought in *Mind, Self and Society* (1934) in analyzing the attuning of the "I" to the "me." To explain, I shall start with an outline of the account in *Mind, Self and Society* before addressing the modified analysis offered herein.

An individual responds to herself as others would respond to her. To elaborate, the "me" is an object responded to in reflective conduct in the same way as others respond to the individual in overt conduct. The "me" is the array of attitudes that arise in attuning to a situation. The array of attitudes is the perspective that frames the moment to moment adjusting of overt conduct in social acts. "The individual experiences himself as such, not directly, but only indirectly..." (Mead, 1934, p. 138) from the perspective of another or the generalized other. The argument here stems from Mead's (1910, 1912, 1922, 1934) analysis of gesture and the significant symbol. When an individual's gesture is not significant, that is, when the gesture is not a purposive signal to another individual, the attuning of the "I" cannot be to the significance of the gesture (for no significance was intended). When a gesture becomes significant, it is because the individual calls out the same attitude in the self as in the other. The other and the expression of an attitude in the other are objects to which the individual attunes. Attuning to the same attitude in the self is an attuning to a self that is attuned to by the other. The significance of a significant gesture is the functional similarity of the attitude of the individual with that of the interpretant. The attuning of the "I" to a significant gesture (or symbol) is an attuning to an attitude that is an object of the self as it is an object attuned to by the other. An individual "first becomes an object to himself just as other individuals are objects to him

or in his experience; and he becomes an object to himself only by taking the attitudes of other individuals toward himself..." (Mead, 1934, p. 138). Attuning to a self that is engaging with others in conduct toward social objects (Mead, 1934) is an attuning to the "me" as an object being responded to by others.

I agree that individuals become objects to themselves by taking the attitudes of others. However, as I shall now explain, I do not hold the presumption in *Mind, Self and Society* (Mead, 1934) that the "me" is the perspective of others and the "I" is the individuated agent. Rather, I will argue that the "I" is the attuning of an individual engaged in a situation. The individuated self is an array of attitudes that is distinct from the perspective of another or the generalized other.

In *Mind, Self and Society* (Mead, 1934), Mead is recorded as saying that the "me" is conforming and conventional. The "me" assumes the perspective of other individuals towards one's own conduct and assumes the perspective of the determining and constraining generalized other through which an individual engages with the myriad social objects of daily life. And yet, Mead (1932, 1934) claimed, an individual's overt conduct is not entirely determined by the social processes within which it is embedded. The explanation for a degree of self-determination in the conduct of human agents lay in the activity of the "I."

In attuning to a situation and to the array of attitudes that arise within it, the "I" is a coordinating that moves from attitude to overt conduct.

> The "I" is the response of the organism to the attitudes of the others; the "me" is the organized set of attitudes of others which one himself assumes. The attitudes of the others constitute the organized "me," and then one reacts toward that as an "I." (Mead, 1934, p. 175)

In *Mind, Self and Society* (Mead, 1934), it was noted that in attuning to the attitudes called out in others, there is a distinction between self and others. “It is as he takes the attitude of the other that the individual is able to realize himself as a self” (p. 194). In *Mind, Self and Society*, the “I” is the individuating of the self against the generalized other. The “me” may be ready to respond in accord with the social objects present in the situation, but the attuning of the “I” individuates the self from the responses entailed by the social objects within the situation and can adjust and respond to a situation as an individual self.

> The “I” is the response of the individual to the attitude of the community as this appears in his own experience. The adjustment to that organized world which is present in our own nature is one that represents the “me” and is constantly there. But if the response to it is a response which is of the nature of the conversation of gestures, if it creates a situation which is in some sense novel, if one puts up his side of the case, asserts himself over against others and insists that they take a different attitude toward himself, then there is something important occurring that is not previously present in experience. (Mead, 1934, p. 196)

I take a somewhat different approach to certain aspects of the “I.” It will be argued that the “I” does not appear as an object in reflective conduct. Furthermore, the distinction between the “I” and the “me” will not encompass a distinction between the individuated self of the “I” and the generalized other of the “me” as implied in the quote cited above. It shall be argued herein that the array of attitudes that arises in the “me” may for the most part be the conforming perspective of the generalized other. Nonetheless, the individuating of the self is also present in the arising of attitudes and, contrary to the claim in *Mind, Self and Society* (Mead, 1934), may well be “previously present in experience."

Before elaborating this argument, however, it is important to note where the significance of the distinction between the account given of the “I” in *Mind, Self and*

Society (Mead, 1934) and that put forward in this thesis lies. As a response to the reductive physicalism of Jaegwon Kim (1998, 1999, 2005), my analysis emphasizes the attuning and responding of the "I" to social processes that constitute an individual's engagement with the world which, I claim, cannot be sufficiently explained in terms of physical particles. Mead's account of the "I" provides a sound analysis of an individual's attuning to the social objects and to the attitudes that arise as a readiness to respond within those social objects. As I shall elaborate shortly, such an account raises serious questions about Kim's (2005) claim that "any phenomenon of the world can be physically explained if it can be explained at all" (p. 150). Mead's account suggests that a key condition for a moment of human agency is the active attuning of individuals to social processes. Neither the social objects with which individuals engage nor the significant gestures that facilitate both cooperative engagement within and through social objects and the deliberative quality of reflective conduct can be readily explained in terms of the particles from which they are constituted. The question of whether a social process can be explained solely in terms of its physical particles and the laws of physics is thus brought into sharp focus. Nevertheless, the account of the "I" presented in *Mind, Self, and Society* (Mead, 1934) will be rearranged somewhat in this thesis. I believe that *Mind, Self, and Society* (Mead, 1934) confounded two separate facets of human agency. The first is the attuning of the "I" to the arising of arrays of attitudes; the second is the distinguishing between the self and the generalized other. Moreover, by making a clear distinction between these two facets and focusing on the former, an account can be developed that coheres with contemporary theories of emergence and also coheres with the empirical observations of cognitive science. It should also be noted that *Mind, Self*

and Society (Mead, 1934) is a posthumous work and earlier works (e.g., Mead, 1903, 1913) directly attributable to the pen of Mead do not describe the "I" and the "me" as a distinction between the individuated self and other individuals or the generalized other.

The first modification of Mead's account I propose is that the distinction between the "I" and the "me" cannot be identified with the distinction of an individuated self and the generalized other. In a moment of attuning, attitudes arise. In *Mind, Self and Society* (1934) it is repeatedly noted that the "me" is an array of attitudes of others, of the community, or of the generalized other and that the "I" reacts or responds to these attitudes. Mead did not, however, explicitly state that the "I" is an alternative array of attitudes individuating the self from the other, although he never explicitly precluded this. This thesis will hold that the perspective of the individuated self, the perspective of other particular individuals, and the perspective of the generalized other are all arrays of attitudes. They all can arise in a readiness to respond to a situation. The readiness to respond that arises in a moment of attuning may not and often does not express itself in overt conduct. However, overt conduct is always a coordination from a readiness to respond. That is, the purposive overt conduct of an individual is only possible if the overt conduct were present within the preceding attitudes. If this were not the case, overt conduct would not have arisen out of the attitudes shaped within the central nervous system as the individual engages with a situation, which would raise dualist implications to which Mead himself did not subscribe. If the overt conduct of the individual does not conform with the social objects of society, it is because attitudes arose that did not conform with the social objects of society. The individuated self is constituted within the array of attitudes to which the "I" may attune.

The distinction between self and other is a distinction between perspectives; a distinction between differing arrays of attitudes. The arrays of attitudes that arise in moment to moment attuning, one in response to another, may constitute any number of perspectives. For example, the attuning of the "I" at a particular moment may be to a negatively emotive array of attitudes that arise in a moment of attuning to a situation—perhaps a readiness to respond with furrowed brow and angry words. In attuning to this array of attitudes, the array of attitudes constituting the generalized other may arise as a readiness to respond to the first array. The attuning of the "I" to the attitudes of the generalized other may call out yet another array of attitudes, say, a readiness to engage with the perspective of another individual. The attuning of the "I" can be to any perspective, whether it be the perspective of the generalized other, another individual, or the perspective of the individuating self.

It needs to be stressed here that there is neither physiological, psychological, nor cognitive categorization of perspectives other than within the post-hoc analysis of reflective conduct. As an array of attitudes arises in a moment of attuning, one cannot identify each particular attitude with a particular perspective; say the perspective of the individuated self or the generalized other. It is most likely that within an array of attitudes arising in a moment of attuning, elements of several perspectives arise simultaneously and that a particular attitude may not necessarily be associated with a single perspective. For example, a young man attunes to a soccer game on the television while walking through an electronics store and in the moment of attuning, he is ready to respond by pausing and turning towards the television. There is no suggestion that the readiness to pause is necessarily an attitude that belongs to the perspective of his father who would

have done the same, to the individuated self of the individual who loves soccer despite his friend's love of hockey, or to the generalized other of young men that enjoy watching sports. In this moment of attuning, the attitude is the readiness to respond of the young man in the situation. If he were walking through the store with his father, then the readiness to pause would arise in an array of attitudes that involved the response of his father and as such, his perspective would tend toward the perspective of another. If he were walking through the store with his hockey loving friend, the array of attitudes would involve the differing response of his friend to his own and as such, the perspective of the individuated self may be more prominent.

I consider the individuated self and the "I" to be distinct terms that cannot be identified with each other. The former refers to any array of attitudes that individuates the self from the perspectives of other individuals or from the generalized other. The "I" is the immediate attuning and anticipatory adjusting of the individual engaged in a situation.

This interpretation is close to Mead's earlier writings (1903, 1912, 1913) on the "I." In these writings, Mead emphasized the fleeting temporal nature of the "I's" engagement with a situation.

> [A]n 'I' is a presupposition, but never a presentation of conscious experience, for the moment it is presented it has passed into the objective case, presuming, if you like, an 'I' that observes but an 'I' that can disclose himself only by ceasing to be the subject for whom the object 'me' exists. (Mead, 1913, p. 374)

Mead himself offered two alternative answers as to whether the "I" becomes an object in reflective conduct. His 1912 paper, *The Mechanism of Social Consciousness*, presented the stand that the "I" cannot exist as an object in reflective conduct. Rather, the "I" is implied in deliberation, in the responding of an individual to the arising of an array of attitudes with another array of attitudes. The self found in reflective conduct is a "me"

continually responding to itself and "implying a fictitious 'I' always out of sight of himself" (1912, p. 406). A year later, Mead (1913) published *The Social Self*. In this paper, he argued that the "I" can become an object of reflective conduct. As such, it is no longer the "I" of the "fleeting present" (Martin, 2006, p. 73), but an object in the memory of the self that acted. The "I" that becomes an object for the attuning of the "I" is the initiated conduct of the previous moment, whereas the "me" is the attitudes that arose in the moments prior to and after the moment of overt conduct.

This thesis adopts a position closer to that laid out in the earlier of the two papers. In the attuning of the "I" to a moment of overt conduct, attitudes arise as a readiness to respond to that moment of overt conduct. The individual acts and only in attuning to the act does it become an object of reflective conduct. It is not, however, the "I" that enters into reflective conduct as a "me," but the attitudes that arose in anticipation of overt conduct and the overt conduct itself. The attuning of the "I" is never present as an object of reflective conduct. Rather, it is the act itself including the emotive, motor, and deliberative attitudes to which the "I" of the moments prior was attuning that become objects to the attuning of the "I" in the fleeting present. A partial analogy would be a mirror that is so clear and unblemished that only the reflections are apparent. The mirror that is reflecting cannot be seen.

How, then, should we understand the "me?" The "me" is the arrays of attitudes that constitute a "repository of perspectival understandings" (Martin, 2006, p. 73). The "me" can arise in reflective conduct as an objectified self to which the "I" attunes. As such, the "me" includes both arrays of attitudes that constitute an individuated self and also arrays of attitudes that assume the response of others to the self. The "me," however,

is not an object that only arises with an inward attuning of the "I." Rather, the "me" is the perspectival understanding from which all agentive activity occurs.

As a brief, but pertinent, aside, it is worth noting the implications of the relation of the "I" and the "me" to an anti-sceptical position. A Meadian account of human agency proposes an individual actively engaging with the world. A possible sceptical objection to such an account might be that an individual is perfectly capable of thinking and deliberating in a dark room for weeks at a time. That is, our ability to deliberate is autonomous from the world around us. Of course, a Meadian account would not deny the ability to deliberate in total isolation. With no external stimuli to attune to, attuning is to the arising of attitudes in a stream of reflective activity. As I move to an investigation of the ontogenesis of a moment of human agency, however, it will be argued that there would be little to attune to (other than basic physiological states) without an active history of attuning to the world. The unique qualities of human agency are not found in an impossibly detached attuning, but in the relationships of that to which we attune; relationships that have been shaped through ontogenesis with each moment of engaging with the world.

Novelty and the Self-Determination of the "I"

For Mead (1932), a condition for the self-determination of an individual's activity is that there is a degree of novelty in a moment of attuning. In the uncertainty of a moment of engagement, the perspectives formed through previous engagements with the world do not always transition into a certain outcome for overt conduct. We need to make choices based on anticipated possibilities. In order to consider this condition in depth, I first consider the formative influence of previous engagements. This will lead to the

question of what is meant by the past of an individual and then to the question of how we interpret novelty. Finally I shall discuss the self-determining activity of the “I” engaging in an uncertain world.

First then, I shall consider the constraining and formative influences over human agency from within a Meadian framework. For Mead (1932), an individual’s conduct is partially determined by the past. That is, past engagements with situations have a formative influence on conduct in the fleeting present. This is evident in the conduct of individuals in very familiar situations: situations with which they have engaged many times before. In such situations there is little, if any, reflective conduct and little doubt as to how the individual will behave. An individual that approaches a door will open it; an individual that drives toward a red traffic light will apply the brake. Facial expression, gesture, and tone of voice are constrained and guided by situations. In North America, one does not jog through a mall nor talk to a cashier with the same tone, gesture, and facial expression one might use with a close friend or a child.

A very brief excursion into a philosophical possible worlds experiment helps to illustrate the formative influence of past engagements. Assume a world where situations were identical: a world in which the same series of events repeated ad infinitum over a short temporal cycle, and in which individuals were continually engaging. After repeated engagements with identical situations, the attitudes that arose would soon set into a fixed array. The attitudes of the individual would be formed by past engagement and, with no novelty in the situation, there would be no demand for overt conduct to differ from past encounters with identical situations.

Of course, in the case of an individual's engagement with the world, situations are never entirely identical to those encountered in the past. *The past*, however, is a term that requires some elaboration. Without seeking to make any metaphysical claims,[12] I shall restrict myself to the question of how we interpret the past of an individual. One possible interpretation of Mead is as follows. The past of an individual is the readiness of that individual to engage with the present. Readiness is formed and constrained by previous engagement with the world (through both phylogenesis and ontogenesis). Perspectives formed through past engagement become the array of attitudes that arise in the fleeting present. A reader might object that individuals can recall events, stories, and images that have no bearing on the present. *Recall*, however, is an array of attitudes that arises when attuning either to aspects of a situation or to attitudes arising in reflective conduct. Attitudes are a readiness to respond. Another objection might be that the past of an individual is in the history of the society rather than the readiness of a singular individual. This objection, however, does not contradict the claim that the past of an individual is in her readiness to engage with the present. The practices and perspectives of societies form over temporal spans ranging from days to millennia, but only exist in the present to the extent that they are assumed within the perspectives of individuals. As we have seen, individuals engage with and assume the perspectives of both other individuals and social groups. Perspectives are arrays of attitudes. Attitudes are a readiness to respond.

We now turn to the novelty that Mead (1932) considered crucial for a moment of human agency. Despite the constraining influence of perspectives, individuals do not act

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[12] Mead himself did not avoid the metaphysical. However, for the purposes of maintaining scope, seeking a metaphysical explanation of the past is not attempted in this thesis. Readers may refer to Martin (2006, 2007) for an excellent analysis of Mead's metaphysics.

in exactly the same way as they have in the past. Mead (1932) accounted for this by the novelty of the present. Few, if any, situations are the same. That is, an individual rarely, if ever, engages with a situation in which the possibilities for responding are exactly the same possibilities as those that occurred in any previous situation—even in seemingly familiar situations. As an illustration, a student often walks into a classroom while a lesson is in progress. Each time, however, the teacher may be standing in a different place or may be in a different mood. The chairs or desks may be in different positions and the students may be sitting in different places and attune to the late-comer in different ways. Each situation is novel because the relations between individuals and things in that moment are unique to that moment and emerge from the activity of multiple individuals engaging with events from a multiplicity of perspectives.

In this thesis, a relationship refers to the relation between living agents and the world in which agents acts. More specifically, a relation exists between a living agent's readiness to respond (or lack of readiness) and that to which the living agent is attuning. There is nothing in the relationship that defies the laws of physics, but the laws of physics no longer suffice to define, explain, nor determine the relationships. The relationships that emerge are between the purposive activities of living agents and the world they occupy. No claim is being made that this description of relation is an all encompassing definition. Rather, relation, thus understood, underpins a description of an agent's active relationship with the world.

In any moment of the present, there is an array of relations that constitute a situation. These relations are "given" (Mead, 1932, p. 18) in the events that preceded the moment. By *given* Mead meant that events are real occurrences that can be traced back in

a causal chain. Events occur and are irrevocable, but the causal explanation sought for the past flow of events does not encompass an explanation for novelty that arises in the fleeting present. Rather, in each momentary present, novelty arises, which people can analyze and attribute to a deterministic past post-hoc. Each moment of the fleeting present offers possibilities for new interpretations of the past and new uncertainties for the future.

Novelty, for Mead (1932), referred to new relations that emerge as individuals encounter each other and encounter the social objects within which they respond to each other. Novelty is intrinsic to perspectival engagement with the world.

Mead's (1932) view of novelty is both important and plausible. I, however, cautiously avoid analytic arguments for and against determinism. In Chapter five, I shall return to the issue of novelty and determinism where it will be argued that the emergence of human agency does not hinge on an ontological conception of novelty that precludes determinism. Rather, emergence and novelty hinge on the question of downward causation.

In a moment of human agency, the self-determining activity of the "I" is in the anticipatory readiness to respond to novelty. As individuals engage with novel situations, they occupy different temporal perspectives simultaneously (Mead, 1932). In the momentary attuning to a situation, perspectives arise in an individual that were formed through previous engagements with similar situations. At the same time, attuning is anticipatory. Attuning projects the perspectival understandings of past engagement into the possibilities unfolding in the fleeting present. It is an anticipatory coordination between the arising of perspectives and the immediate, novel situation with which the

individual is engaging. Mead (1926) wrote: “We are acting toward the future realization of the act, as though it were present, because the organism is taking the role of the other” (p. 83). That is, in attuning to a situation, an individual anticipates the response of other people and things within his own perspective. Anticipation is an arising of attitudes in the fleeting present. By occupying both the perspective of past engagements and, through the attuning of the “I” in the fleeting present, anticipating the attitudes of others to the present situation, the coordinating activity of the “I” is a self-determining influence within human agency.

As expressed by Martin (2006):

> As a “Me,” the self is a repository of perspectival understandings. As an “I,” the self is an active agent simultaneously occupying situations that have been in one sense determined by the past, but which (because of the ever-present emergence of novel circumstances) in another sense are open to determination by the momentary activity of the “I” in the fleeting present. By being simultaneously present in both of these temporal perspectives, the self is a source of both the achieved wisdom of the past and the agentive cultivation of the future. (p. 73)

In encountering events when engaging with a situation, multiple perspectives arise in an individual. Moreover, each individual holds differing perspectives. The anticipatory attuning of a particular individual coordinates arrays of attitudes into overt conduct, thus generating another event that alters the situation to which other individuals attune and adjust in like manner. This is the essence of Mead’s term *sociality*. There are two aspects to sociality. First, sociality is the adjustment between the readiness to respond in a manner cohering with past experience and the anticipatory coordination with which the individual engages with the novelty of the fleeting present (Mead, 1932; Joas, 1997). Sociality, however, is not simply the relation between the determined past of a single individual and the formative influence of that individual as he coordinates his

conduct in the fleeting present. A second aspect of sociality is that any situation and any objects within a situation are continually formed and shifted by the perspectives of the individuals involved and their consequent overt conduct in engaging with the situation (Mead, 1932). The common feature to sociality is the occupation of two or more perspectives (Martin, 2007). Anticipatory attuning brings the individual into the perspective of the novel present while the attitudes arising in that moment of attuning are formed in a perspective of past engagements. Individuals are also occupying, sharing, and continually adjusting to multiple perspectives of others while engaging in a situation.

The account of the self-determining influence of the "I" provided so far, is an account of prereflective human agency. It does not follow from the discussion so far that the self-determining coordination of perspectives into overt conduct demands the attuning of the "I" to the arising of attitudes. In many novel situations, the coordinating of the "I" requires no reflective conduct, especially if it is a situation in which many of the elements are familiar, even though the situation itself is novel. This is exemplified in expert chess players that can anticipate moves in a chess game based on the novel situation presented to them with no demand for reflective conduct (Ericsson & Lehmann, 1996). There are times, however, when the attuning of the "I" is to the arising of attitudes and deliberation commences. As mentioned earlier, the arrays of attitudes that arise in a moment of attuning to a previous array of attitudes can be emotive, motor, and symbolic. Deliberation is seldom, if ever, an entirely rational process. Nevertheless, in attuning to the multiple perspectives present in a given moment, the depth of engagement with a situation grows. Anticipation can extend to temporal spans of months and years. Moreover, in deliberation, the perspectives that have developed through an individual's

involvement with social processes and a sociality that extend well beyond the mechanisms of an individual's central nervous system, have now become that which the anticipatory and coordinating adjustment of the "I" brings to overt conduct.

The reader who is still somewhat sceptical of the Meadian account of human agency may note that the theoretical parsing of the "I" from the "me" has now become so fine that there may be no distinction to be made. As noted in the previous chapter, the temporal distinction between attuning and the arising of attitudes is slight. Attitudes continually arise with the continual attuning of the "I." Attitudes that arise from past engagements with the world often coordinate into overt conduct in a novel situation with an effortless necessity and no demand for reflective conduct. Moreover, the relation between the "I" and the "me" is profoundly recursive with the attuning of the "I" calling out an array of attitudes and the array of attitudes simultaneously influencing that to which the "I" attunes. It could just as well be argued, a sceptical reader may claim, that the "I" and the "me" are one and the same. They are, so to speak, two sides of the same coin. A Meadian account of human agency would accept such an objection. The "I" and the "me" are not two different entities, nor two entirely separate functions. If one takes a conceptual step back from the individual and considers the vast array of social objects with which individuals engage and the evershifting web of meanings that constitutes the perspectives of individuals as they continually transition themselves from one social act to the next, an individual is a partially self-determining agent within social processes that extend well beyond the central nervous system. To the extent that the "I" and the "me" can be parsed, it is as two threads in a process that embeds an individual within the life process of an everchanging world. The distinction between the "I" and the "me" is a

conceptual distinction between two temporal spans: the anticipatory projection with which an individual engages with the novelty of the fleeting present and those past engagements with the world that are formative of the readiness to respond.

The Bio-Physical Mechanisms of Human Agency

There is still much work that needs to be done before a coherent argument for emergent human agency has been developed. Nonetheless, the thesis, as developed so far, already raises serious questions about how the complex sociality occupied by a human individual and the deliberative agency with which an individual engages with the world can be explained solely by particles of matter conforming with the laws of physics.

For now, however, the reductive physicalist might attempt to stand firm and unfazed. A possible response might be as follows. First, the “me” does not appear to be a bone of contention between the reductive physicalist and the Meadian. The “me” is an array of attitudes that arises in the central nervous system in a moment of attuning. As such, the “me” is no more than the release of neurotransmitters and the neural assemblies activated at that moment; assemblies that can be reduced to molecular constituents. The neurotransmitters and neural assemblies are the physical realizers (Kim, 1998) that are identified with the functional property—the “me.” The “I,” Mead proposed, is the agentic activity of an individual attuning to a situation and coordinating the arising of attitudes into overt conduct. Moreover, the “I” is individual. It occupies a particular perspectival opening on the world. The “I” then must be “in the head” of the individual. Thus, it is a function of the brain. If it is a functional property of the brain then it too can be identified with its basal constituents and ultimately with physical particles. Human agency has been both encapsulated and reduced. Despite the seemingly complex social processes within

which a human agent engages, the coordinating of the "I" from an array of attitudes into an overt motor response is nonetheless identified with a certain threshold at which action potentials transition into motor activity.

I don't believe that such a physicalist response accounts for the sociality of individuals engaged in a world of social and life processes. This thesis will continue to develop an argument as to why social and life processes are emergent and have a determining influence over their basal physical constituents. Nonetheless, the empirical evidence provided through the investigations of cognitive science may appear to offer prima facie support to the reductive physicalist. A wealth of empirical research supports the axiom that individual synaptic connections combined into neural assemblies have electro-chemical thresholds at which a signal passes through neural structures and ultimately into overt motor responses. As the technologies of neuroscience have improved over the last two decades, an ever more detailed account has been provided of the types of neurons, electro-chemical signals, and brain areas that are involved in different aspects of human activity. Often an individual pays minimal attention to the task at hand; say, opening a door. As discussed in Chapter two, this is referred to as acting with a high degree of automaticity (Shiffrin & Schneider, 1977). With a high degree of automaticity, the electro-chemical activation of neural assemblies associated with motor activity (Poldrack et al., 2005) together with neural assemblies in the parietal lobe, frontal cortex, basal ganglia, and thalamus (Jonides, 2008) tend to be associated with the overt response. These assemblies have formed through repetitive engagement with similar situations.

The neural network model of brain function (Rogers & McClelland, 2004; Rumlehart et al., 1986) posits that multiple responses activate as electro-chemical impulses in neural assemblies. In situations in which automaticity does not prevail and choices need to be made as to what overt motor activity is required, it is suggested that the neural assembly with the strongest activation determines the individual's overt conduct. The following is a very brief outline of this proposed model of neural functioning. Two or more potential responses activate as neural assemblies in the premotor cortex (Frank & Claus, 2006). The basal ganglia system modulates which response is further activated into a motor response and which is suppressed by signalling "go or no-go" (Frank & Claus, 2006, p. 300) to each response. This signal is sent as a release of dopamine from the basal ganglia which amplifies the activation of one of the neural assemblies in the premotor cortex while inhibiting alternative modes of response which are simultaneously activating other neural assemblies. Neural assemblies in the orbitofrontal cortex also activate with a strength that depends both on whether or not previous activations of the neural assembly had been associated with the release of dopamine from the basal ganglia, and also on the strength of the dopamine release. This is because the strength of the electro-chemical signal in the neural assemblies in the orbitofrontal cortex is formed, in part, by previous releases of dopamine from the basal ganglia into those neural assemblies. The neural assemblies in the orbitofrontal cortex are connected to those in the premotor cortex and thus add to the go or no-go signal that determines motor activity. A similar role also has been attributed to the anterior cingulate cortex (Rushworth & Behrens, 2008).

In a moment of human agency, the reductive physicalist can claim, the determining aspect of human action is the strength of electro-chemical activation in a neural network generated by past and current release of dopamine. It is a physiological process that can be and, in some respects, already has been reduced to its physical constituents and the laws of physics. Mental properties such as the "I," it may be claimed, can be identified with their physical realizers, and mental properties can only be explained in terms of the basal constituents of these physical realizers.

A physical reductionist may also question the existence of the "I" as described in a Meadian account of human agency.[13] This is because Kim (1998) requires that a functional property is identified with a physical realizer and that this physical realizer satisfies the conditions under which the functional property occurs. In the case of the "I," considered as a functional property, there must be a physical realizer in the basal constituents of the brain that can satisfy the conditions under which the function of the "I" occurs. However, no clear set of conditions exists. The findings of neuroscience do not suggest a coordinating "I," but rather a complex of neural assemblies that vary considerably depending on automaticity and the nature of the task, i.e., whether it be, for example, a spatial task, a verbal task, or a facial recognition task. There are no neural correlates of the coordinating "I" nor is there any clear set of basal conditions within which the "I" occurs. Cognitive science often refers to the central executive which on the face of it may appear to be an analog of the "I." The central executive is an "attentional control system" (Baddeley, 1998, p. 167) whose functions attend to aspects of a situation

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[13] Such a challenge is not required from the standpoint of reductive physicalism as long as the functional "I" is identified with its physical realizers. Nonetheless, this is a possible challenge that may come from reductive cognitive scientists that lean towards a physical reductionist position.

and also to the responses that arise in attending to the situation. However, empirical investigation suggests that the "central executive" may be a term that "constitutes a way of labelling the problem" (Baddeley, 1996, p. 26) of an individual's coordinating activity in a situation, rather than being an adequate explanation. Studies conducted in cognitive science laboratories (see Baddeley, 1996 for review) suggest that the central executive can be reduced to a diverse number of distinct functions, including the coordination of attention between two tasks—activation of memory systems and selective attention (Baddeley, 1996). More than this, the distinct functions associated with executive control have been connected to a specific region of the brain, the prefrontal cortex (D'Esposito et al., 1995; Shallice, Burgess, & Robertson, 1996), which in turn can be reduced to the activation of neural assemblies. The "I," moreover, encompasses a far broader array of functions than the central executive, including perception and the gross and fine motor activity with which an individual coordinates attitudes into overt conduct. It has been suggested (Kolb, 1944) that the "I" is a convenient name for a group of heterogeneous functions that Mead was unable to account for in the social processes within which the individual engages the world. A reductive physicalist may demand an analytic differentiation of the concept of the "I" from within the framework of cognitive science which would require even further functional reduction as perceptual processes, decision making heuristics, and motor activation (to name but a few) are taken into account. If the functional reduction becomes sufficiently refined, the reductive physicalist may claim, it then will be possible to identify each function with a physical state in the brain and the "I" will offer no more interest to the study of human psychology than other historical concepts such as Freud's superego (Freud, 1922).

The evidence just cited in support of a reductionist position, however, does not conflict with a Meadian account. The reductive physicalist and the Meadian theorist may be able to agree that the “me” is the array of attitudes that arise in a moment of attuning and that it can be identified with the release of neurotransmitters and the activation of neural assemblies. However, the Meadian could not agree that this is a sufficient explanation for the “me.” The array of attitudes arises within much broader processes and needs to be accounted for within a much broader temporal span than the fleeting present. These are issues that will be addressed in the following chapter on ontogenesis.

Both a Meadian and a reductive physicalist account would also agree that the “I” cannot be reified as a part of the brain. Neither the “I” nor the central executive is a homunculus: “a little man who sits in the head and in some mysterious way makes the important decisions” (Baddeley, 1996, p. 6). A homunculus would connote a dualist position in which the individual did not act or decide, but rather, action and decision were carried out by some sentient being inside the person. Reifying the “I” within a computational or information processing paradigm is also untenable. The “I” is not analogous to an autonomous computational module that receives inputs from other modules and acts upon them. As we have seen in the previous chapter, the inputs (as they would be termed in the computational paradigm) to which the “I” attunes at any given moment are so complex, reciprocal, and multifarious that they could not be considered part of a separate module of cognition such as the sensory and short term memory units

(Atkinson & Shiffrin, 2003[14]) as they are presented in many introductory psychological texts (e.g., Matlin, 2001).

Admittedly, Atkinson and Shiffrin (2003) and also Baddeley and Hitch (1974) had a somewhat more subtle view of processing units than the seemingly autonomous modules presented in some introductory psychological texts. Their models of information processing proposed that information flows through neural assemblies that can be modelled in terms of functional processing units but are not bio-physical units. There is a temporal flow of events in which the sensory engagement may precede (by milliseconds) the coordinating of responses. Even so, modelling a "flow of information" (Atkinson & Shiffrin, p. 373) in terms of "units" (p. 373) and "storage" (p. 374) is as unwieldy an analogy as it would be if applied to "units" of sand "storing" water on a beach as a wave rolls in, while neglecting the dynamics of the wave and the shifting grains of sand on the beach. Modelling a brain (or a beach) by encapsulating temporal aspects of a flow of events in terms that seem to reify the flow into discreet "items" (p. 374) and "stores" (p. 373) confounds the functioning of an ongoing temporal process with discreet reified functional modules.

One might reasonably wonder whether the "I" isn't just such a confounding of an ongoing process with a reified module. Mead (1934) certainly saw the "I" as functional, that is, as a response to the attitudes that arise in a situation. The constitution of the "I" involves diverse biological components and functions all of which play a role in the attuning of the individual. Nevertheless, attuning cannot be reduced to these functions. Attuning is actively engaging with the world by all means available. An individual may

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[14] Atkinson and Shiffrin (2003) is a reprint of a paper originally published in 1971.

be deprived of one or several functions, whether it is the sense of sight, a motor response capacity, or a cognitive process, but will nevertheless continue attuning to the world (Merleau-Ponty, 2002). The discussion presented herein has already attributed several functions to the "I." For example, the "I" is implicit in the analyzing of each moment of sensory stimulation and the guiding of attention. The "I" coordinates attitudes in reflective conduct and the "I" anticipates the outcome of attitudes before coordinating through attitudes to overt conduct. The Meadian account itself seems to fall into the reductive functional framework proposed by Jaegwon Kim (1999).

I do not deny the possibility of such a functional analysis nor doubt the value of such a reduction as part of an endeavour to understand the mechanisms of the central nervous system. Over the last two centuries of empirical investigation, scientists have achieved an ever more detailed understanding of an individual's physical and biological constitution. The reductive method of empirical investigation has provided us with an array of epistemologically succinct components, typically arranged into levels of analysis ranging from the organism—in this case a human being—through the molecular to the particle. Although the "I" is a functional reduction to the extent that it is a term that distinguishes a particular aspect of an individual's engagement with the world, the "I" is also a term that reconstitutes some of the myriad functions and biological components with which such engagement is carried out and frames them within an emergentist, process account. No claim is being made here that the "I" is immune to the reductive method of empirical investigation. The claim that was made in the previous chapter is that such a reduction presupposes the situation within which the individual is responding. The "I" is the active, momentary, anticipatory attuning and coordinating with a world that

is there. No matter how precisely the agentive activity of an individual is parsed and reduced into specific functions and neural processes, these functions are nonetheless functions for an individual to engage with a world that is there. Biological and physical reduction does not offer a complete account of the individual shaped by such processes. What Jaegwon Kim seems to have missed is this: Functional reduction offers no account whatsoever until the functions are recombined into an individual's engagement within a social process.

The reduction of the individual is a method of empirical investigation, rather than an ontological statement of an individual's being. This is either explicitly recognized or presupposed by many cognitive scientists. Neuroscientists, for example, tend to refer to the brain as part of a process in which neural mechanisms activate in engagement with a broader situation. For example, in a review of the neurological basis of decision making in the journal *Nature Neuroscience*, the editor (Bayer, 2008) referred to the findings of empirical research in this field as the "basic brain mechanisms" (Bayer, 2008, p. 387) and "the neural circuitry underlying decision making" (Bayer, 2008, p. 387). *Underlie* is a term that the author uses five times in a very short introductory article. It appears to be a carefully chosen term and coheres well with a Meadian interpretation of the neural mechanisms of human agency. Explaining neural circuitry and neural mechanisms as *underlying* decision making processes neither precludes an involvement in processes extending well beyond the central nervous system nor demands that the choices people make can be explained solely in terms of these mechanisms. Rushworth and Behrens (2008) and Jonides (2008) likewise refer to neural mechanisms. Neural mechanisms have

been posited for learning (Jonides, 2008), decision making (Rushworth & Behrens, 2008), and anticipation (Frank, 2006) to name but a very few.

As a further example of the manner in which the interpretations of neuroscience often complement a Meadian account, the neural mechanisms for decision making represent[15] (Bayer, 2008; Frank, 2006) value and reward. The value found in a neural mechanism, however, necessarily assumes that these mechanisms are in engagement with a world of value and reward. For humans, the value may be no more than that granted to a slice of processed cheese in the fridge, but it also may be the value of the next chapter of the *Brother's Karamazov*.

The constitution of value within both bio-physical and social processes can be further illustrated by returning to the example of my browsing Saida's notes described in the previous chapter. In attuning to Saida's notes, an arrays of attitudes arose and were coordinated into overt conduct. To restrict ourselves to a simplified neuroscientific analysis of the brain, the array of attitudes that arose may be associated with neural assemblies and the value of Saida's notes may be associated with a release of the neurotransmitter dopamine. The results of research provided by neuroscience, however, do not conflict in the slightest with a Meadian account. The former explains in great detail the mechanisms of the brain and as such, explains the physical mechanisms for my assignation of value to Saida's notes. The Meadian account includes the bio-physical mechanisms, but also provides an explanation for the distinction between the value I found in Saida's notes and the lack of value which I found in the fashion magazine lying

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[15] The term "represent" is frequently used in cognitive science and neuroscience papers on perception, decision making etc. The use of this term is debatable as representation is intrinsic to the readiness to respond of an attitude. However, this is not an issue that will be engaged with in this thesis.

nearby. The value distinction I made between the two items needs to be accounted for. It is not clear that this can be done without accounting for my active engagement in social processes where meaning and value are determined in the sociality of interaction among individuals. Kim's (1998, 1999, 2005) account of reductive physicalism does not address this issue. A Meadian would concur with Kim that values, beliefs, intentions, and other "mental properties" (Kim, 2005, p. 166) require basal physical constituents. Moreover, the basal physical constituents are "characterizable in terms of the causal work they do in the overall economy of human behaviour" (Kim, 2005, p. 65). The possibility that a basal constituent of the value I place in Saida's notes is dopamine is not at issue here. However, Kim has not accounted for the reason why more value was placed (and more dopamine was released) when attuning to Saida's notes than other items in the situation. The absence of this issue from Kim's account is highlighted by his observation that physical reduction can be illustrated by machines that have perceptions and beliefs. Kim writes:

> Looking at the situation less globally, suppose that we are told to create a device that perceives shapes and colors of medium-sized objects presented to it (perception), processes and stores the information so gained (belief, memory, knowledge), and uses it to guide its actions (agency). I believe we know how to go about designing and building machines with such capacities; in fact, I believe simple machines with such powers have already been manufactured. That is because these states and processes, like perception, belief, memory; and using information to guide action, are specifiable in terms of their causal roles, or job descriptions. A creature, or system, that has the capacity to do certain things in certain ways under certain conditions is ipso facto something that perceives, remembers, and appropriately behaves. (2005, p. 166)

With such a machine, the explanation as to why the machine guided its actions in a certain way when it received certain physical stimuli (such as light waves) is fairly straightforward. It guided its actions in a certain way upon detection of certain stimuli

because it was programmed to do so by a human being. It is very difficult to imagine a machine that could engage with its surroundings in a coherent manner of any form if a human had not developed a process through which the machine engaged with and distinguished between items in a situation. Indeed, one would assume that the key feature of the search for artificial intelligence must be to identify the processes through which a physical entity coherently engages with a complex situation and then *for a human* to implement those processes through robotic and computational technologies. With the processes and purposes of engagement pre-designed by a human being, it is a moot point that light waves and electronic signals explain the mechanisms of engagement.

The issue at hand then is why light waves emanating from the oscillation of electrons at a particular coordinate in my field of vision triggered a release of dopamine. Can the release of dopamine initiated by neural processes triggered by the input of light waves at one coordinate rather than another ultimately be explained without any recourse to the ready-to-hand world with which I engage? I have raised some serious doubts about the claim that an individual's active engagement in social processes can be reduced to the physical realizers of that social process.

Nonetheless, the argument for the irreducible emergence of human agency is incomplete. Perhaps, some may suggest, the social processes, perspectives, and attuning of individuals engaging with the world can be reduced to and explained by particles of matter and the laws of physics, even though that which demands explanation is far more extensive and complex than the mental properties in an individual's brain. Although gaps in Kim's (1998, 1999, 2005) account of reductive physicalism have been pointed out, his analysis is far from refuted.

In the following chapters, I argue that an individual is a distinct element within an emergent social process. In order to do this, we shall step back from the temporal span of the fleeting present and engage with the emergence of human agency in ontogenesis and then in phylogenesis.

Chapter 4: The Enabling Conditions for a Moment of Human Agency in Ontogenesis

Life and Social Processes: Three Clarifications

It is hoped that by this point in the thesis, the demand for an account of the social processes with which an individual human agent is inextricably engaged has become sufficiently explicit. Biophysical life processes that facilitate brain maturation and physical growth cannot and should not be ignored. However, the emphasis here shall be on the social processes within which and into which a child grows. The key condition for the ontogenesis of human agency is the attuning of children within the social processes in which they are involved and the gradual development of perspective taking that enables them to participate in these processes.

We will start this chapter with three clarifications before embarking on an account of the enabling conditions for engaging in a social world that develops through ontogenesis. First, some clarity is required about the use of the terms *life processes* and *social processes.* According to Mead, sociality is not unique to human individuals. It is the involvement of any physical object in more than one process (Mead, 1932). No process is autonomous and an object may play a role in more than one process simultaneously. A molecule of water, for example, is involved in the covalent bonding of the particles that constitute the molecule. It may also be involved in the wave formations of a body of water or the hydration of an animal. Processes are interdependent and interrelated. I will refer to life processes as the processes through which life maintains itself on this planet. To the extent that Mead considered sociality to be a feature of all processes in the universe, all life processes are social processes. However, to be more in accord with common English usage and to emphasize the interrelatedness of human

individuals which is the underlying theme of this thesis, social processes will refer to the life processes through which human individuals inter-relate and respond to each other. Life processes are profoundly intertwined with social processes. Life processes such as the mechanisms of the central nervous system are tied implicitly to the social processes with which an individual is engaged. The stress of a pregnant woman who fears physical abuse may affect the birth weight and gestation period of her foetus (Copper et al., 1996). The origin of the mother's stress originates in her engagement in social processes and the bio-physical impact of the stress on the unborn child may also manifest itself in subsequent social processes such as the child's academic performance (Lagerstrom, Bremme, Eneroth, & Magnusson, 1991). Yet, the bio-physical development of a child in the womb is predominantly a life process according to the definition of life process provided herein. This lack of categorical clarity, however, does not highlight a lack of conceptual clarity. Rather, it emphasizes the complex sociality of life on Earth as highlighted both by Mead (1932) and also by contemporary theories of human culture (Tomasello & Rakoczy, 1993) and emergence (Kauffman, 1995) that shall be discussed later.

Another related clarification is about the Meadian standpoint on the nature versus nurture debate. It is a crucial debate that has implications for many social and moral issues. The overall thrust of Mead's own writings suggests that he considered the ontogenesis of an individual engaging with others in complex social processes to be the guiding feature of human agency. In other words, he leaned towards nurture over nature as the major determining factor of an individual's agency. Nonetheless, Mead (e.g., 1907, 1932, 1934, 1938) also considered the biological evolution of human beings to be

essential to the understanding of human agency. His interest was not in parsing nature from nurture, but rather in understanding the two as threads of the sociality within which individual humans engage with the world. “[T]here is a social process out of which selves arise and within which further differentiation, further evolution, further organization, take place” (Mead, 1934, p. 164). This thesis adopts a similar position. Life processes (which in the case of human beings are predominantly social processes) depend upon dynamic bio-physical mechanisms. Physical change occurs over temporal spans ranging from the momentary to the evolutionary. The rate of physical change in many life processes is still a subject for investigation in the life sciences. In the last decade, however, investigations have tended to show that the rate of bio-physical change in human evolution (Burger, Kirchner, Bramanti, Haak, & Thomas, 2007), ontogenesis (McCain, Mustard, & Shanker, 2007), and neural functioning (Lazar et al., 2005) is faster than had been previously assumed and the degree of change can be greater than had been previously assumed. Recent empirical evidence, for example, suggests that lactose tolerance in European populations evolved over a period of twenty thousand years or less (Burger et al., 2007) and that dwarfism can evolve in isolated groups of humans in approximately one thousand years (Berger, Churchill, De Klerk, & Quinn, 2008). Hypotheses that specific genetic changes have determined specific cognitive and behavioural human traits are widespread in psychology and the life sciences (e.g., Dawkins, 1976; Pinker, 1999; Trivers, 1971), although such hypotheses are not without their critics (e.g., Gould, 1979). A Meadian account of human agency, however, does not hinge upon the outcome of such debates. The degree to which temperament, for example, is genetically constituted has no bearing on a Meadian account of human agency. No matter what the temporal span,

social processes are a determining influence on bio-physical change. The adoption of dairy farming practices can be a determining influence on the lactose tolerance in the genetic constitution of later generations, and the reprimand issued to a recalcitrant student can be a determining influence on the array of attitudes in the central nervous system of that student a moment later. The focus of a Meadian account of human agency is the life and social processes within which an individual engages with the world.

The third clarification is about the approach taken in this chapter. Although Mead discussed ontogenesis in his own writings (1903, 1922, 1925) and in the lecture series that formed the basis of the posthumous book *Mind, Self, and Society* (1934), he tended to discuss ontogenesis as an aspect of a conceptual point such as the use of symbolic symbols or the role of the generalized other. He never provided an extended ontogenetic account of how an infant comes to engage in and grow into the social processes that constitute its world. Rather, his writings typically combined phylogenetic, ontogenetic, and microgenetic conditions for the particular matter he was addressing (Gillespie, 2005). In an attempt to provide a coherent account of the ontogenesis of an individual's engagement with the social processes that constitute his world, this chapter will follow the interpretations of empirical research in developmental psychology and assimilate them into a Meadian interpretation.

The thesis started with a description of a moment of human agency. In the previous chapter the enabling conditions for a moment of human agency were examined from within the momentary temporal framework of a social act. To recap, the conditions were as follows. Human agency occurs in engagement with a situation. Individuals can attune to a situation within which they are engaged and they can purposively respond to

it. There is a degree of uncertainty in situations. In a moment of attuning, an individual is able to anticipate and distinguish between different possible outcomes of different possible responses. An individual has a bio-physical constitution that facilitates the above conditions. The response of an individual in a social situation assumes a reliable ability to anticipate the responses of others engaged in that situation. Finally an individual can take the perspective of others and participate in social objects within which the individual's act is but one element of a coordinated process.

The previous chapter investigated in some depth the attuning of individuals to social objects and also to the perspectives that arise in a moment of attuning. The chapter concluded with a brief overview of some of the physical mechanisms through which an individual engages within a situation. So far, however, little has been said about how individuals come to occupy the perspectives that they do. The emphasis of this chapter will be to provide such an account.

The Interactive Engagement of a Neonate

At the moment of birth, a healthy neonate has a bio-physical readiness to engage within the world. This readiness is largely determined by the complex evolutionary history of life processes on this planet which will be the focus of the next chapter. The focus of this chapter is on how the bio-physically embodied human agent is formed within the activity of social processes through ontogenesis.

A human neonate is already enmeshed in the life processes and (through the mediation of the mother's life experiences) the social processes of the world. There are four particular aspects of a neonate's engagement with the world that have been repeatedly observed and are pertinent to a Meadian account of ontogenesis. First, a

neonate attunes to the world (Feldman, 2006; Kugiumutzakis, 1998). Moreover, a neonate does not attune to all stimuli with equal attention. A neonate attunes to some stimuli for longer than others (Batki, Baron-Cohen, Wheelwright, Connellan, & Ahluwalia, 2000; Spelke, 1998). Second, in attuning to the world, it is ready to respond (Kugiumutzakis, 1998; Trevarthen & Aitken, 2001). Third, a neonate attunes to other human individuals preferentially over other stimuli and is ready to respond to them (Batki et al., 2000; Hobson, 2004; Kugiumutzakis, 1998). Specifically, a neonate tends to attune more to human faces (and cognitive scientists symbolic representations of human faces; see Valenza, Simion, Cassia & Umilta, 1996) over other visual stimuli and responds to facial gestures with similar facial gestures of its own (Kugiumutzakis, 1998). Fourth, a neonate attends to novelty from the very first hours of life (Spelke, 1992, 1998) which implies both an ability to learn (to recognize what is not novel) and to distinguish between what has been learned and what has not.

When referring to the activity of neonates, it is important not to over-state their depth of engagement with the world. To say that a neonate attunes is to say no more than the neonate is sensually connected with its surroundings and that incipient responses arise in any given moment of attuning. Moreover, none of these four aspects of a neonate's engagement with the world are unique to humans. They have also been observed in other primates such as macaques (Ferrari et al., 2006; Nelson, 2001). It would seem then that the unique "deliberative, reflective activity of a human being in framing, choosing and executing his or her actions" (Martin, et al., 2003, p. 82) is not present in the neonate but emerges in ontogenesis through the unfolding of and engagement with biophysical and social processes.

Perhaps the most relevant neonatal aspect of human agency is that, compared to other primates, the newborn is entirely dependent on its mother (or caregiver). Whereas baby monkeys can cling to their mother and seek out a teat, the human infant cannot. Of course, all mammals, almost by definition, are dependent on their mothers in the early stages of life. However, a human neonate starts life in a position of greater dependence, is dependent for longer, and has a much more complex world of social engagement to learn about before it can function independently. As noted by Macmurray (1957), in order to understand the ontogenesis of human agency, the focus cannot be on the bio-physical constitution of the infant, but rather it should be on the social processes that develop between the mother and infant in the first weeks and months of life that subsequently develop into the social engagement of an individual within a social world. Indeed, it is in this relationship that some key distinctive features of human agency have been found.

The social nature of the mother-child relationship in the first year of an infant's life has been carefully studied over the past three decades. In an in-depth review of these studies by Trevarthen and Aitken (2001) outlined some of their key conclusions. As well as the rhythmic activity that provides physical comfort to the infant such as stroking, breast feeding, and rocking, the mother and child engage in interactions that include mutual attention and the "rhythmic synchrony" (p. 6) of vocal utterances and facial expressions. The mother's vocal communication with her infant, referred to in developmental psychology as infant directed speech (IDS), is not the typical spoken language used with other adults, but rather a rhythmic and melodic intonation of often repeated phrases and simple syllables that bears a striking similarity to the principles of musicality (Malloch, 1999). IDS has been observed in cultures around the world, and

shares a rhythm and prosodic features that are specific to no single social or cultural group.

The mother-child interactions are not mono-directional with the mother conducting the interaction and the child simply responding. Even in the earliest days of life there is turn taking in which the mother and child alternately voice soft sounds and gesture with face and hands. An infant actively attunes to its mother, anticipating the mother's communication and then responds with sounds and gestures of its own. Malloch (1999), for example, analyzed the rhythmic coordination between a mother and four month old infant. The communicative musicality of mother-child interaction consists of a regular succession of expressive events and a timbre or melodic intonation of vocalizations. Combined together they form what he calls a "narrative" (p. 29) in which the mother and child alternate their expressions in accord with the rhythm and timbre of the interaction.

To further illustrate the bi-directional nature of mother-child interaction, a study was designed in which a mother interacted with her two month old infant (Murray & Trevarthen, 1985; Nadel, Carchon, Kervella, Marcelli, & Reserbat-Plantey, 1999) over a live television link. The communicative musicality of mother-child communication continued as though the two were engaging face to face. However, when a thirty second delay was added to the transmission, the communication began to break down with the infant frowning more and becoming less engaged in the interaction. The importance of these findings to a Meadian account of the ontogenesis of human agency is that from very early infancy, a child can already be seen to be taking the attitude of the mother and responding in anticipation of her attitude. The minimal nature of this Meadian

interpretation of empirical findings cannot be over-emphasized. No claim is being made that an infant adopts the perspective of the mother as an adult would. Nor is it being claimed that the two month old perceives the mother as an individual or that the infant is individuating his own self from that of his mother. The interpretation is very specific. The readiness of the infant to respond adjusts from moment to moment in accord with the anticipated conduct of the mother. The study involving mother-child interaction over delayed video feed (Murray & Trevarthen, 1985) shows that the child is not simply responding to the mother's conduct, but is also anticipating how the mother will respond and assuming the mother's response in its own conduct. Hence when the anticipated response does not occur, that is, when the attitude of the mother assumed by the infant is not apparent in the mother's conduct, the interaction begins to break down, perhaps because the attitudes that arise in the infant have fallen into disarray. There is also little specificity to this attitude taking. Unlike the adult that takes the same attitude as the interpretant when he says "eat," the infant is only taking the same attitude as the mother to the extent that it is responding in a rhythmic synchrony with the mother's responses. Nonetheless, in this limited manner, attitude taking is present in very early infancy and may be the ontogenetic seed of perspective taking in later life.

It is notable that the mother-child interactions in the first months of life are non-referential (Trevarthen & Aitken, 2001). The infant does not refer to objects in the environment nor does it seek to indicate intentions to the mother. It is a "protoconversation" (p. 4) that seems to serve predominantly as a positive exchange of affect and as inter-relational engagement with others. It is an open question whether protoconversations are a necessary enabling condition for a child to engage subsequently

in the social processes that constitute its world. There are children who have suffered extreme deprivation of social contact in the first year and yet still enter into social interactivity at a slightly later age (MacLean, 2003).

Nonetheless, the role of the mother in responding to the infant's activity is uniquely human (Hauser, 2000; Tomasello, 1999). The mother often refers to objects and in following the infant's gaze responds to aspects of the situation to which the infant is attending (Halliday, 1993). As the infant grows into the second year of life, these qualities of the mother-child interaction become ever more complex and referential as the child learns that the mother will follow his focus of attention and that he can follow the mother's focus of attention (Carpenter, Nagell, & Tomasello, 1998). The child is responding not only to objects in the environment, but also to his caregiver's reaction to and relation with the objects (Hobson, 2002). The child's attitudes—his readiness to respond to aspects of a situation—are intricately related to the attitudes of those close to him.

A Shared World of Objects and Events

By eighteen months of age, normally developing children are engaging their caregivers in joint attention. They follow the gaze and pointing gestures of others and also point to objects with the clear expectation that their caregivers will direct their attention to the object at which they are pointing. Adults and children also check each other's gaze to see if they are paying attention to the same object. There is a triadic pattern of interaction in which the object becomes an object of shared attention and also the caregiver and child become objects of each other's attention. There is little doubt that

a child's engagement in joint attention with others is a necessary condition for a child to engage with the social processes of the human world (Hauser, 2000; Tomasello, 1999).

In brief, joint attention begins at around nine months of age as an infant attends to an object (such as a toy) and then to the face of the caregiver (Carpenter et al., 1998). Shortly thereafter, a child will attempt to gesture intentionally by gaze or arm movements when they want their caregiver to direct attention towards a particular object and, shortly after that, the child will follow the direction of another's attention. With these patterns of interaction established, imitative learning and the rudiments of language quickly follow. Equally important (if not more important) is that these interactions not only lead to a child's ability to imitate the actions of adults, but they also enable the adult to teach the child. These patterns of interaction are unique to humans (Carpenter et al., 1998; Hauser, 2000; Tomasello, 1999) and language development is dependent on them. Without the ability to attend to what another individual is attending to and also to attend to whether or not both individuals are attending to the same object, even the development of a lexicon of a few simple nouns would be impossible.

With the use of a significant gesture such as pointing, the child is ready to respond to his gesture as the other would respond to it (Mead, 1912). The attitude of the other assumed by the child becomes more referential than the protoconversations of early infancy. As the child points, she is attending to an aspect of her situation as her mother attends. The perspective taking of a toddler is, of course, very limited compared to older children and adults. With a significant gesture such as a single word or a pointing gesture, the toddler assumes the attitude of the mother just as she has assumed the mother's attitude when the mother gestures to her. At this age, however, a child's significant

gesture does not correlate closely with any particular attitude. For the infant, pointing across a room and gazing intently may be roughly translated at one moment as “look where I am looking and bring the yellow teddy over here” and at another moment as “I want to get my bottle.” Significant gestures thus have a broader meaning than the mother’s use of those gestures (Peccei, 1999), although the mother can often assume the attitude of the child despite the vagaries of the gestures.

There are five notable aspects of the child’s very early use of significant gestures. First, Mead (1912, 1934) proposed that a significant gesture is a gesture that calls out the same attitude in the caller as in the interpretant. On the face of it, this may seem counter-intuitive in these very early uses of significant gestures. A very young child cannot respond to his own gesture by getting the yellow teddy bear from the top shelf. An attitude, however, is a readiness to respond and needn’t require an ability to respond. One can reasonably hypothesize that significant gestures at this early age call out a readiness to respond in the young child even though she is unable to complete the response in overt conduct. Further empirical investigation may be required to add weight to such a hypothesis, but there is already some evidence that points toward this. A child’s first significant gestures such as pointing tend to be towards proximal objects and only later toward more distal objects (Carpenter et al., 1998). It is plausible that these gestures originate as the child’s readiness to respond to an object by reaching for it but failing to do so. The caregiver, in seeing the child’s attempt, passes the object to her. After a few repetitions of this interaction, the child learns the significant gesture of pointing (Carpenter et al., 1998; Vygotsky, 1986). The child is ready to respond as the caregiver responds but is not able to do so. Moreover, as young children learn to share attention

with others, they become very imitative learners, modeling their own conduct on that of others (Bandura, 1977; Carpenter et al., 1998; Horner & Whiten, 2005). In order to learn through imitation and modeling, a children must be ready to respond in ways that others are able but they are not. This is a presupposition of the zone of proximal development (Vygotsky, 1978) through which children learn from adults and more capable peers.

The second aspect is that language acquisition follows rapidly after the early use of significant gestures. For want of space, this is a topic that cannot be addressed in any detail here and the reader is referred to Halliday (1993) for an overview of a child's language acquisition through engaging with others. From a Meadian perspective, as children acquire an ever more complex language, they are acquiring an increasingly complex array of significant symbols. A significant symbol calls out a shared attitude between two or more people. By acquiring significant symbols, children are acquiring the attitudes of others as part of their own response to a situation. They are acquiring an ever broader array of attitudes from the people around them. Moreover, with growing language skills, the specificity of each symbol increases and the subtlety of the child's attitudes towards social situations increases accordingly. It is not only that the child develops more subtle attitudes through learning specific differences between significant symbols, such as between skirt and pants or funny and silly, but also, that the array of attitudes that arises in a moment of attuning to a situation can become more complex as the array of attitudes—the array of learned responses—broadens.

The third aspect is that the child's conduct has become social conduct engaged with a social object. The act of getting the teddy bear, for example, becomes an act that depends upon the social conduct of both the child and the caregiver. Once the child is

capable of engaging in these rudimentary forms of social conduct, the child's caregivers become very involved in attuning the young child to an ever growing number of social objects within the social world in which she is growing up. Through interactions with parents, other adults, and other children, the young child engages in "guided participation" (Rogoff, 1993, p. 5) with the social activities of the community. For the most part, guided participation of children in their second year focuses on the child's involvement in the daily social practises of a community, such as greeting others, eating with others, and playing with others.

The fourth is that children are not only ready to respond as the other responds, but that they are ready to respond as the other intentionally responds (Tomasello & Rakoczy, 2003). In the simple act of following the mother's gaze or pointing finger, the child is ready to respond as the mother would respond to the gesture. In so doing, the child is ready to respond to the situation as the mother would respond to it. The very earliest shared attention between mother and child is a shared intentionality; a shared response to the situation.

Finally, for Mead (1912, 1934) and also Tomasello and Rakoczy (2003), the early use of significant gestures is associated with the beginnings of the child's individuation of the self. From the very first moments of life, the child has been learning to respond to different situations through interaction with others and—after the first nine months or so (Carpenter et al., 1998; Tomasello, 1999; Tomasello & Rakoczy, 2003)—under the guidance of others. In a moment of attuning to a situation, these learned attitudes arise. Through the use of significant symbols, the young child also assumes the attitude of others who are attuning to the situation. That the child is able to respond intentionally as

the other responds requires that the child can attend to the intentions of others towards a situation. In this relationship with others, the rudiments of a social object emerge and, with this, the rudiments of social conduct in which the child's conduct is differentiated from the other. The individuation of the self becomes more distinct as the young child engages in situations where the attitudes that arise do not cohere with those of the guiding adults. For example, a child's attention may be guided towards a dog in a park and the caregiver may take the child's hand and bring her to pet the dog. The child, however, may be fearful and wish to withdraw. In this case, the array of attitudes that arises in the caregiver is not wholly shared by the child and a distinction of self and other can arise. It is notable that as no other animals share and guide each other's attention, the individuation of a self may well be, as Mead (1912, 1934) claimed, unique to humans. Although the just mentioned factors are enabling conditions for an individuation of the self, it is only with the "tools" (Vygotsky, 1978, p. 19) of language that a "me" can truly emerge as an object for the attuning of the "I." If attuning in reflective conduct were simply an attuning to emotional and motor attitudes, the attitudes that arise in that moment of attuning would not have the specificity and flexibility facilitated through the practise of language that enable the deliberation that ensues in attuning to perspectives.

Differing Perspectives on a Situation

In the first three years of life, children are already developing complex perspectives with which they engage with their world (Tomasello & Rakoczy, 2003). They acquire vast arrays of attitudes, arrays of possible responses to different situations. They learn to respond to others and respond to situations as others intentionally respond. They gradually learn to individuate their own attitudes from the attitudes of others and as

their language skills become more complex, they can attune to the arising of attitudes within themselves. However, according to studies of the sources of children's beliefs, in the first four to five years of life, children do not understand that their own attitudes could be other than the attitudes they currently hold (Gopnik & Astington, 1988). If they see a box of candy and find pencils inside, they say that they initially responded to the box as a box of pencils (even though they had claimed prior to opening it that they thought there was candy in it). They understand that another's attitude to a situation can be different from theirs. A teacher, for example, may respond to a situation differently to the way they respond. However, young children do not understand that another individual may be responding to a different situation than they are. They do not understand that a situation is only the same for all involved to the extent that it offers the same possible responses and is different to the extent that their responses may differ. This is famously illustrated in the Sally Anne Test (Wimmer, Perner, & Child, 1983) in which the child witnesses Anne move an object while Sally is away and is then asked where Sally thinks the object will be when she returns. Younger children (generally under four years of age) claim that Sally will look for the object in the place to which it has been moved. In other words, younger children assume that Sally is responding to the same situation—the situation in which the object has been moved—to which they are responding. This is generally interpreted as the child not being able to take the perspective of others or understand that their own perspective is continually shifting.[16]

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[16] The Sally Anne experiment is often associated with "theory of mind." This term will not be used here because it is much too broad. A two year old can predict when mother will be angry or happy or whether or not mother likes the object to which she is paying attention.. The Sally Anne experiment pertains specifically to whether a child responds to a situation as though it were from a different perspective to that of another. This interpretation will be discussed in depth shortly.

This issue was addressed by Tomasello and Rakoczy (2003). They emphasized that there is no cognitive "revolution" at around the age of four that brings about a realization that there are other perspectives than the one held by the young child, but rather, there is a gradual development in the sophistication of the perspective occupied by the child. In many respects, a two year old is already able "to participate in cultural activities using shared, perspectival symbols with a conventional/normative/reflective dimension" (p. 121). Specifically, Tomasello and Rakoczy note that a child's language use becomes more sophisticated and the use of sentential components such as knowing, believing, and feeling becomes more prevalent and is much more likely to be used in the third person as a child moves into the fourth year of life. A child is also increasingly exposed to disagreements and conflicts in which the perspectives of others become more apparent to the child.

I very much concur with Tomasello and Rakoczy's interpretation and the Vygotskian and Meadian theoretical basis from which it was derived. I will both provide an outline of this theoretical basis and expand upon it in order to provide a more in depth account of how children come to occupy the perspectives of others and the generalized other. Like Mead, Vygotsky (1978) had emphasized the role of symbols in a child's development. In the second year of life, children use a symbol as a tool to signify to others. As children become more proficient in the use of these symbols as tools, they make use of these tools to mediate their own activity. When confronted with a problematic situation, for example, a child often uses self-talk (or "egocentric speech" as it was referred to by Vygotsky, 1986, p. 12) in the process of engaging with the situation. Through the use of the tools of language, the child is able to break a task down into

separate components (such as “the car’s stuck” and “the tunnel is too small”). Rather than responding directly in overt conduct (to use a Meadian term), the child is mediating the response to the situation through the tools of language. The child is signifying to himself.

> The greatest change in children’s capacity to use language as a problem-solving tool takes place somewhat later in their development, when socialized speech (which has previously been used to address an adult) is turned inward. Instead of appealing to the adult, children appeal to themselves; language thus takes on an intrapersonal function in addition to its interpersonal use. When children develop a method of behavior for guiding themselves that had previously been used in relation to another person, when they organize their own activities according to a social form of behavior, they succeed in applying a social attitude to themselves. The history of the process of the internalization of social speech is also the history of the socialization of children’s practical intellect. (Vygotsky, 1978, p. 27)

The key contribution of Vygotsky is recognition that symbols such as language become tools with which an individual mediates direct, overt conduct with the world. According to Tomasello and Rakoczy (2003), without the tools with which to signify the differing perspectives of others, that is, without the proficient use of sentential components such as he knows, she believes, and they feel, a child does not have the mediational means with which to identify the differing perspectives of others.

This leads to the question as to why these particular mediational means only emerge in the fourth or fifth year of life. A Meadian interpretation may be able to offer a plausible hypothesis. Recall that a significant symbol calls out the same response in the signifier and the interpretant and that the first use of significant symbols occurs shortly after children engage in joint attention with others. Children’s early adoption of significant symbols depends on their assuming the same response in themselves as in the other. They assume they are in the same situation as the other. If children assumed that they responded to the symbol “eat” by laughing and the mother responded to it by eating, then language simply could not develop. In early language development, when children

are learning the basic tools with which to signify to self and others about their engagement with the world, they need to attune with ever more refinement to the similarity of responses between themselves and others. They need to see, for example, that when they sip they are responding in the same way as another who sips and that sipping is a different mode of responding than drinking or gulping. In short, in the early stages of language development, if the child responded to a situation as though it were a different situation from that to which the other were responding, then language learning probably would not occur. Young children respond to the same situation as others and, through this, they learn how others respond and how they can respond. They "fail" the Mary Anne Test because they assume they are responding to the same situation as the other and the other is responding to the same situation—the same relations between people and objects—as they are.

Having proffered a possible explanation as to why young children assume that others are responding to the same situation that they are, an explanation for how children later come to differentiate their situation from that of others is still required. There are two threads of early ontogenesis that need to be highlighted in order to understand how a child comes to occupy the perspective of others. The first is the ever more complex engagements with the social objects that constitute the world. Children are actively taught by their caregivers and older children to recognize social objects, such as visits to the village chief, burning money for their ancestors, or multiplayer, mass online role playing games. Through these engagements with the social processes of the world, children are learning their individual roles of social conduct and that others' roles in the social object may differ from their own. With this individuation of the self in social conduct, the

child's response subsumes the responses of others that play different roles in the situation. Many two year olds, for example, can participate in circle time at a pre-school or dinner with their family. This alone, however, does not facilitate the child's responding to a situation as though it were a different situation to that of the other. It only facilitates the individuation of the child in responding to a situation with the other.

Another thread in the ontogenesis of children is their ever more refined ability to signify to themselves through the tools of language. In Meadian terms, one would say that the attitudes that arise in a child in a moment of attuning to the "me" become more complex and more replete with significant symbols. The relation of the "I" to a "me" described in the previous chapter becomes more complex. In a moment of attuning, the perspectives of others (such as the mother, the teacher, or the sibling) may arise along with the attitudes developed through the child's own direct sensory engagement with the world. Attuning to an array of attitudes in the young child's readiness to respond to a situation becomes an attuning to multiple and sometimes conflicting perspectives. The tools of language become more sophisticated and begin to involve sentential components such as "he thinks." In the deliberation that arises in reflective conduct as the child attunes to these possibly conflicting perspectives of the "me," he begins to distinguish between the perspectives of others.

Younger children say that they responded to a situation previously as they would respond to it now, as in the example of the pencils in the candy box (Gopnik & Astington, 1988). Although this seems intuitively strange to an enculturated adult, one needs to consider what is required for a child to recognize that their previous responses differed from their current response. For children to say that they responded differently in

a previous moment, they need to attune to the array of attitudes that arose in the earlier situation, attune to the array of attitudes that are currently arising, and differentiate between them. This can only occur with sophisticated deliberation that demands an individuation of the self, an attunement to one's own attitudes in reflective conduct, and a sophisticated array of language tools that facilitates deliberation of this sort. Until around the fifth year of life, children's involvement in social processes does not really demand this kind of differentiation. A toddler may first learn to call all animals dogs and later learn that dogs are different from cats (Peccei, 1999). Whether one takes a social or bio-physical view of learning, there is no demand that toddlers must attune to the previous error in order to learn a new word. Rather they accommodate (Piaget, 1954) the new distinction within their perspective. Children develop the perspective taking tools that facilitate internal mediation and the attuning to a "me" that is a repository of self-understanding through an ever more sophisticated engagement with their social world.

An account has been provided of how, by around the sixth year of life, the child comes to occupy the perspectives of others, differentiate between perspectives and individuate the self from others. How though does the child come to occupy the perspective of the generalized other? As we have noted, as soon as the child can share attention with the mother, the mother is introducing the child to the social processes of the community and the different roles of individuals (Rogoff, 1993). Mothers introduce uncles, slaves, monks, teachers, and policemen rather than introducing them with individual names. They learn to say "thank you to the nice lady" rather than say "thank you to Mrs Smith." In play, children adopt the roles that they have learned through guided participation in social processes, responding to make-believe situations in the role

of another (Mead, 1925, 1934), say, by playing at being a policeman or doctor or teacher. As children get older, again through guided participation, they learn to participate in rule based games. By playing second base in baseball, for example, a child learns the combining of roles such as pitcher, batter, and outfielder into a social object, in this case a game of baseball. Through interactions such as these, children learn the inter-dependency of roles in a social object and eventually the inter-dependence of all roles in a community. Through these interactions, children subsequently begin to respond from the perspective of a generalized other that is the perspective of the society as a whole. As discussed in the previous chapter, the perspective of the generalized other predominates as a determining mode of conduct in particular situations, such as social conduct at a coffee shop, school, or a cock fight. For Mead (1925, 1934), the generalized other was not just a determinant of how an individual engaged with a particular situation, but also an individual's readiness to respond to a situation in accord with the morals, rights, and obligations of a society. The generalized other, for example, was present in my attuning to Saida's notes not only in that the array of attitudes that arose at that moment involved general modes of conduct in similar situations, but also in that I responded to the notes as Saida's notes; as the property of another member of the community.

I shall conclude this account by emphasizing a key thread throughout the ontogenesis of a perspectival human agent. Namely, at every step of the journey from infancy to middle childhood (say, to the age of five or six), the child's participation in daily life is guided and taught by others. Infants interact with their caregivers from the first days of life, learn to follow their gaze, and watch for their responses to a situation. They are taught by their caregivers how to engage with the artifacts of their culture and

other individuals, how to respond to the different roles of other people around them, and how to conduct themselves in different situations and within different social objects. As they get older, these teaching and guiding roles are assumed by a broader community of individuals. At each moment of engagement, the children are learning new and ever more refined responses to an ever broader array of situations. They are not learning in a process of autonomous self-discovery but in a process of social engagement and often under the tutelage of others. As Tomasello (2003) pointed out, should a child (or, we might add, a group of children) be left to learn in a process of autonomous self-discovery in the absence of others, there is no reason to assume their social conduct or intellectual abilities would be much different from those of a chimpanzee.

I do not, however, claim that a child is entirely determined by these social processes. As we have seen, in the recursive flow of attuning to arising attitudes, deliberation occurs. The bio-physical processes of ontogenesis make each individual a unique, intentional being that is continually attuning to a changing world. Moreover, the worldly situations to which each individual child attunes and the growing arrays of attitudes that constitute the “me” to which the child subsequently attunes in reflective conduct are also unique. The attuning and deliberation that ensues facilitate an active, intentional engagement with the world.

Perhaps the key shortcoming in the account provided in this chapter and in many other accounts of human agency (e.g., Mead, 1934; Vygotsky, 1978) is that it focuses on the emergence of an individual human agent within the social processes that constitute the world. The focus is on the individual rather than the social processes in with which the individual engages. An equally salient mode of analysis is to investigate how social

processes persist and adjust through the incorporation of new participants. Indeed, it is worth commenting that Mead's primary readership has traditionally been in sociology rather than psychology. A sound conceptual grasp of human agency depends upon both a grasp of the social processes and the individual's engagement within them.

In this chapter, I have focused on the ninth enabling condition for human agency outlined in the previous chapter, namely, that an individual occupies the perspectives of others. This condition is enabled by other conditions that become apparent as one extends the analysis through an ontogenetic temporal span. A key condition is joint attention through which significant symbols can be shared. Subsequent to this, but of equal significance, is intentional teaching. It is hard to conceptualize a society in which there is shared attention but not intentional teaching. However, one can reasonably assume that the deliberate guidance of others plays a key role in the emergent perspectival engagement of a child with the social objects that constitute her world. It shall be argued in the next chapter that it was from the conditions of joint attention and intentional guidance that emergent, perspectival human agency arose.

The ability to make new distinctions between possible responses to a situation and also to respond in new ways to a situation (i.e., learning) is another enabling condition that has not been mentioned previously. The array of attitudes through which a child responds to a particular situation develops as a dynamic accumulation of previous engagements with the world. Admittedly, this condition has been somewhat neglected in this discussion of ontogenesis. The neural mechanisms through which learning occurs are crucial to an understanding of human agency. However, other than cases in which neural mechanisms that facilitate the making of new distinctions between possible responses are

disrupted, the analysis of the capacity to respond to situations differentially depending on previous engagements belongs to a temporal span that extends beyond ontogenesis to the evolution of living agency. In ontogenesis, what an individual attunes to and what an individual distinguishes when engaging with the world are far more formative of the perspective taking human agent than the facilitating neural mechanisms that differ little from those of a chimpanzee. The account elaborated in this thesis of how individuals come to occupy the perspectives that they do is not a comprehensive account of ontogenesis, but rather highlights the issues that pertain to a response to Jaegwon Kim's (1998, 1999, 2005) reductive physicalism and the alternative possibility that human agency is emergent within the social processes that constitute the world of human activity. The bio-physical mechanisms of the process, for example, have not been discussed. As mentioned earlier, genetic, epigenetic, brain maturation, and learning processes undoubtedly underlie the ontogenesis of socially involved individuals. There may well be, for example, a brain maturation mechanism that facilitates the joint attention that develops at around nine months of age. If this is the case, it suggests that there is a longer temporal span than that of ontogenesis through which social processes and life processes combined to produce the socially immersed, perspective taking human agent that is under investigation here. Over an evolutionary temporal span, it is the social and life processes through which joint attention evolved that need to be explained, and Kim's reductive physicalism has not done this.

This chapter is not a refutation of reductive physicalism, but rather, shifts the arena of debate between reductive physicalists and theorists of emergent human agency away from the moment to moment activity of the central nervous system and toward the

life and social processes through and within which individuals engage over ontogenetic and phylogenetic time spans. It is not just the brain that the reductive physicalist needs to reduce to particles of matter conforming with the laws of physics, but those parts of the world consisting of significant symbols, social objects, and actively engaged individuals.

Chapter 5: The Enabling Conditions for a Moment of Human Agency in Phylogenesis

Emergent Processes or Reductive Physical Processes?

This chapter will turn to a temporal framework of analysis that extends beyond the ontogenesis of an individual. Perspective taking individuals emerge in a complex of relations with the world that must be explained in a broad temporal framework. An account of human agency demands an analysis of the evolutionary temporal span through which we seek the origins of joint attention and inter-subjectivity, as well as some of the emotional basis of our attunement; the historical temporal span, through which we analyze the emergence of meaning and ideas far removed from the immediacy of the moment to moment activity of most non-human agentic activity; the ontogenetic temporal span, through which we understand the emergence of the "me" and a fabric of thought internalized through each individual's dealings in the world; and the momentary temporal span, in which the "I" acts.

A reductive physicalist may respond by saying that what has been provided here is an epistemological analysis. According to the reductive physicalist, an account of a moment of human agency may be better provided through an understanding of attuning in the fleeting present and that to which the human agent has become attuned over temporal spans ranging from the momentary to the evolutionary. This, however, is not an assertion that physical matter and the laws of physics do not govern every possible temporal span of analysis. It is simply a claim that we are not yet close to a scientific understanding of human agency in physical terms. Ultimately, the reductive physicalist may say, a reductive physicalist scientific explanation will prevail as the techniques of physics, bio-chemistry, and neuroscience progress.

Moreover, the reductive physicalist may continue, the Meadian account provided herein is an account of social processes through which individual's engage with situations. And yet, the account so far has taken the reality of social and life processes as a premise that seems to be presented as an a priori feature of the universe, or at least, of life on Earth. Such a premise, a reductive physicalist would insist, is at best a dangerous assumption and at worst fallacious.

A reductive physicalist may, for example, cite Dowe's (2000) process ontology. Dowe takes a process to be a conserved physical quantity such as mass, energy, or charge that can be traced through the spatio-temporal universe. The universe is a world of objects. Each object has a world line, which is the path of that object through space time. A causal process, Dowe proposes, "is a world line of an object which possesses a conserved quantity. A causal interaction is an intersection of world lines which involves exchange of a conserved quantity" (p. 90). The evaporation of water is a causal process as it involves a conservation of mass and energy as the water molecules dissipate. The shadow of Lion's Gate Bridge in Vancouver is a process to the extent that it has a path through space time. But it is a pseudo process, not a causal process, as no physical quantity is conserved as the shadow moves. The political succession from Stalin to Krushchev, according to Dowe's thesis is not a process at all. Krushchev and Stalin are not the same object through space time and no physical quantity was conserved in an intersection of world lines at the moment of succession. Rather, the succession from Stalin to Krushchev as president of the USSR is, in the words of Dowe, "not a process of any sort, let alone a causal process; it qualifies on my account as spatiotemporal junk" (p. 101). Many social objects such as a drop-in day care where children come and go and

staff turnover is high are not part of a process. The election of the last US president, likewise, is not a process as no conserved quantity from the ballot boxes passed to the president in a causal interaction.

This is not to say that one cannot talk about the last or the next presidential election. According to Armstrong (1993, 1997), and concurred with by Dowe (2000), the world is held to be states of affairs. The presidential election is a contingent state of affairs with particulars, properties, and relations. The presidential election, however, is ontologically no more than the particulars, properties, and relations from which it is constituted. That is to say, a state of affairs is supervenient on its particulars, properties, and relations, and each particular (say, a ballot card) is likewise a state of affairs supervenient on its parts. "[A]ll the alleged further relations in the regress flow necessarily from the structure of the state of affairs" (Armstrong, 1993, p. 432) and the state of affairs holds no more ontological relevance than the mental properties that supervene on the basal constituents of our central nervous system (Kim, 1998, 1999, 2005).

A Meadian theorist might respond to a critique such as this by noting that Mead (1925, 1932) was clear in what he meant by the term process. A process is a series of occurrences or events in which one event has a determining influence over another. In a world of living organisms, many of these events are the acts of individual organisms and groups of organisms each to some extent determining the acts of others.[17] Admittedly, such a description of process is not a description of the physical mechanisms of causality

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[17] It is worth noting that Seibt (2004) offers a process ontology founded on activity and its linguistic description. This may be an interesting avenue for a metaphysical investigation of Mead's process ontology. Moreover, it provides an interesting alternative to the view of Dowe (2000).

and may include many social processes that Dowe might refer to as spatiotemporal junk. At the same time, the thesis of Dowe (2000) is problematic from a Meadian standpoint. Suppose a carpenter cuts some wood and goes to lunch. While he is out, his assistant returns and constructs a table from the cut wood. For Mead (1925), the carpenter and his assistant were engaged in social conduct towards the completion of a social object. To Dowe, one would presume, this social object might be spatio-temporal junk. No conserved quantity passed from the carpenter to his assistant, nor from the carpenter to the wood to his assistant. Moreover, Mead (1932) would certainly not have accepted Armstrong's thesis that states of affairs supervene on a physical base in a reductive manner. For Mead, a state of affairs would be roughly analogous to a situation in which relations emerge between objects and individuals in the novelty of the fleeting present. Reduction, according to Mead (1932), is an a posteriori analysis of what has occurred rather than an ontological description of what is occurring.

Whether theses such as those of Dowe and Armstrong outlined above can entirely be refuted from a Meadian standpoint hinges on whether or not downward causation (Campbell, 1974b) offers explanatory relevance to life on this planet. That is, whether or not a process has a determining influence over its constituent parts.

Without the notion of downward causation, our interpretation of a process will ultimately rely on our understanding of how particles of matter combine and the causal efficacy of varying combinations. Some form of reductionism seems inevitable. In light of downward causation, however, our interpretation of a process becomes one in which the process has a determining influence over the particles from which it is constituted and an emergent account is possible.

The question of downward causation is the key issue on which a Meadian response to reductive physicalism stands or falls. Downward causation, however, was not an issue that had been clearly formulated in Mead's day. For Mead (1932), emergence rested on the novelty of the fleeting present and the reality of perspectives in a world of spatio-temporal relativity. The arguments for the emergence of human agency that will be provided in this thesis have shifted from those provided by Mead himself. For Mead, emergence and the self-determination of human agency depended on ontological novelty, while in this thesis the emphasis is on downward causation. There is a need to justify this shift.

Determinism, Emergence, and Self-Determining Agency

In Chapter three, I discussed the relation between novelty and the self-determination of the "I." In this thesis, novelty refers to a relation between events and individuals in a situation. It is a relation that was not present in the past of the individual engaging within the situation. The novelty that emerges in the fleeting present simultaneously situates an agent both within perspectives determined by past events and perspectives of anticipated possibilities. For Mead (1932), this novelty was intrinsic to his ontology of the universe. He asserted that we should take "that which is novel as an essential part of the universe" (p. 11). Novelty, for Mead, was a refutation of determinism. The present, he believed, was not entirely determined by preceding events. There is undetermined novelty in each moment of the present. Novelty frees the self-determining activity of the "I" to act agentively in the fleeting present.

However, in this thesis, an argument for the emergence of human agency will not rest on a refutation of determinism. Under closer analysis, there are two issues here. The

first is whether emergence—the concept that a process can have causal efficacy over its physical basal constituents—depends on an ontological novelty that refutes determinism. The second is whether human agency depends on an ontological novelty that refutes determinism.

While I have no interest in making arguments for determinism, I believe that there is also no need to refute determinism in order to develop an argument for emergence. An argument for emergence does not require that novelty preclude determinism. This is because theories of emergence are theories about whether processes have causal influence over their basal constituents. As Kim (1999) observes, if emergent phenomena have no causal efficacy over their basal constituents, then emergent phenomena are epiphenomena. The claim that is being developed in this thesis is that emergent life and social processes do have causal influence over their basal constituents. Indeed, without such an argument, the self-determining influence of human agency could only be a result of basal physical properties. It will be argued that the emergence of a process can originate from the causal influence of both its basal constituents and other processes, but once instantiated, a process has a formative influence over its basal constituents. The process is a formative influence that cannot be accounted for by the causal efficacy of particles of matter conforming with the laws of physics, but is nonetheless embedded within a determining, causal flow of events. In this thesis, novelty refers to new relations that emerge as living agents encounter each other, their surroundings and, in the case of people, encounter the social objects within which they respond to each other. As shall be explained shortly, this thesis holds that novelty is an ontological aspect of a perspective, not an aspect of an undetermined universe. In the argument for emergence that will be

presented herein, there is no claim that novelty refutes determinism or that determinism must be refuted.

Since I do not refute determinism, it needs to be asked whether a determined universe is compatible with individual human agency. Is determinism compatible with the emergent self-determining activity of the "I" in the fleeting present? The scope of this thesis does not allow for an in depth analysis of the question of determinism and free will in all the forms through which it has been discussed over the centuries. Moreover, this thesis offers no new arguments for or against free will. Rather, I assume a compatibilist position. Compatibilism is a position that has been argued and defended elsewhere (Frankfurt, 1971; Martin et al., 2003). The task at hand is to explain why the Meadian position expressed in this thesis is a compatibilist position.

An account of the relation of the "I" and the "me" is an account of the processes through which people engage within the world. It is an account that calls for a degree of self-determination. As mentioned earlier, the processes through which an individual attunes to and engages within the world are embedded in and determined by causal influences. They are processes shaped within a flow of events stretching through our phylogenetic and ontogenetic history. Unless we also take into account an individual's own deliberative agency, however, social and bio-physical processes cannot account for an individual's acts (Martin et al., 2003). A case needs to be made that, to a certain extent, the motives that guide an individual's actions originate in the individual's perspective.

One argument for "a limited aspect of origination" (Martin, et al., 2003, p. 81) could be outlined as follows. The totality of bio-physical mechanisms of thought and the

entirety of perspectives formed through a history of engagement with the world do not arise as a comprehensive whole in a moment of attuning. Rather, in a moment of attuning, a readiness to respond arises in the individual. This is a readiness constituted by the bio-physical mechanisms of thought required by that particular momentary attunement to the situation and the particular perspectives relevant to possibilities of engagement in that particular situation. These arise within the individual and her conduct in relation to the world. They arise with active attuning. An account of an individual's agentive activity must account for the particular perspectives that arise. In a moment of engagement with the world, the particular perspectives that arise, the particular bio-physical mechanisms of engagement and the particular overt acts originate not only in causes attributable to our biological and social past, but also to the recursive, (often) deliberative flow of active attuning and the perspectives that arise within that flow.

In a moment of attuning, it is within the coalescing of causal influences into perspectives that the agentive activity of the "I" coordinates an array of possibilities into a singular act.

If, however, one is to make an argument that human agency is a deliberative, reflective, self-determining process (Martin et al., 2003), then it is insufficient to argue that an individual's acts originate to some extent in his own attuning and the arising of perspectives. In accord with Martin et al., we also need to argue that an act is deliberate and that an individual can reflect on and coordinate his intended acts.

As has already been made clear, individuals deliberate by attuning and responding to their own perspectives. Deliberation is a recursive flow of reflective

conduct in which attuning to the arising of attitudes calls out a subsequent array of attitudes.

Deliberation thus understood coheres with Frankfurt's (1971) compatibilist conception of second-order volition. In brief, Frankfurt notes that an individual may have conflicting desires. An individual may then attend to the conflicting desires, say, a desire to take a drug over the desire to desist. The individual not only has desires about his actions in the world, but also desires about what he desires. That is, the individual desires to take the drug, but also desires to have a different desire than this particular desire. The individual has second order volition. He is "free to will what he wants to will" (p. 15).

A Meadian position offers an explanation as to how second order desires arise. In a moment of attuning, attitudes arise. As an individual attunes to an array of attitudes, a contending array of attitudes may arise—that can be understood as Frankfurt's (1971) conflicting desires. In the attuning to one array of attitudes over another, the attuning of the "I" becomes an attuning to the conflict of attitudes and a second order volition arises as an array of attitudes about the conflict. The individual is attuning to his own agency. The attuning of the "I" is to a situation, the perspectives that arise in a situation, and the perspectives that arise in attuning to one's own activity. Agency is in the coordinating of these multiple arrays of perspectives into overt conduct. It is not only activity that to some extent originates in the moment to moment attuning of the "I," but is also a deliberative and reflective process. The activity of the "I" is self-determining activity (Martin, 2006).

As long as a case can be made for downward causation, undetermined novelty is not a cornerstone of a response to reductive physicalism nor is it demanded as the cornerstone for a thesis concerning self-determining human agency.

An argument for downward causation is an argument that processes have causal influence over their basal constituents. It is an argument that seeks to refute reductive physicalism. As discussed earlier in this chapter, it is an argument for emergence. I have argued that determinism is an ontological question that neither demands support nor refutation. Emergence, however, is an ontological issue that must be embraced and supported. Emergence is a concept that pertains to the kind of world we live in and the kind of people that occupy that world. It is a concept that applies to a world in which people are irreducible to the laws of physics and are open to the determining influence of their own reflective deliberation.

An argument will be presented here that provides some important elements towards an ontology of emergent processes and emergent human agency. First, I turn to an argument for the possibility of emergence in a universe of intrinsic complexity. Then, I will turn to the possibility of emergence in life processes. It will be argued that not only can life processes be considered emergent but that they can also be considered as embedded in a perspectival engagement with events in the world. It will be shown that the enabling conditions for a moment of human agency emerged within the relationship of life processes to the world. In a moment of attuning, attitudes arise. This statement is as true for a bee as it is for a human. One condition that pertains to human persons, however, is not apparent in other life processes, namely, taking the perspective of others. This latter condition—a condition emphasized in the preceding discussions of the

microgenesis and ontogenesis of human agency—also emerged within the life processes of this planet, but brought about a qualitatively different form of engagement with the world. A person's perspectival engagement may be considered a qualitatively different emergent process or array of emergent processes. An explanation for a moment of human agency, above all else, is an account of that to which an individual attunes in an emergent world of meaning.

Towards an Argument for a Universe of Emergent Processes

An account has been provided that suggests that a moment of human agency is emergent. It is emergent within the social processes through which an individual engages in the world. As the temporal span of analysis extends beyond that of ontogenesis, one might ask whether emergence is a unique characteristic of human agency or whether emergence is a characteristic of a universe that existed long before the emergence of human individuals. The short answer that a Meadian theorist might proffer is that emergence may be both. There is no demand that emergence be shown to be a universal causal mechanism or process. Rather, emergence may refer to a commonality among differing processes in which downward causation is of ontological relevance.

I start by looking at emergence as an aspect of the universe. If downward causation were inherent in the physical fabric of the universe, the fundamental premise of Jaegwon Kim's thesis, viz., that a mental property is no more than the causal efficacy of its reduction base, would be under considerable duress.

There is a growing body of evidence in the study of physics (Halsey & Jensen, 2004), biology (Kauffman, 1995), and neuroscience (Freeman, 2001) that there are complex self-organizing systems (Halsey & Jensen, 2004; Ott, 2002) referred to by

Bickhard (2002) as "patterns of process" (p. 11). These patterns of process may not simply be constituted by the laws of nature at some lower level and their irreducibility may be more than an epistemological obstacle to a reductionist ontology. A brief discussion of complexity theory will be presented here. This will set the conceptual groundwork for an argument that within the complexity of the universe, the nascent conditions for life processes and many of the enabling conditions for emergent human agency were already present. For an in depth discussion of complexity theory, readers are referred to Heylighen (1992), Kauffman (1995), and Bickhard and Campbell (2003).

Patterns of process are often described in terms of state space and attractors (Kauffman, 1995). State space is a map of all the possibilities open to a process. A single light bulb, for example, has two possible states, on or off. A matrix of one hundred light bulbs has 2^{100} possible states within its state space. The state space of a ball bearing at the moment it is dropped from a height into a bowl will include a broad array of spatio-temporal points and energy levels but will eventually settle at a point of equilibrium at the bottom of the bowl. This point is an attractor, a point of local equilibrium. Although different balls dropped into the bowl at different times could travel through a broad array of points in phase space, they will all end up at the point attractor—the bottom of the bowl. An attractor is a point in state space in which the trajectories of many different prior conditions end.[18] Let us now take a situation in which one placed five bowls in a bathtub and standing at the opposite end of the bathroom, tossed a ball bearing into the tub. Once the ball bearing has entered the tub, the state space would be any point in the tub that it could pass through, but there would be six basins of attraction, namely each

[18] Typically scientific research refers to "initial conditions" rather than prior conditions. This only pertains, however, in a laboratory experiment with a fixed temporal starting point.

bowl and the bath tub itself, and six point attractors, the bottom of each bowl and the plughole in the tub. Once the ball bearing has landed in a basin of attraction, it will move to the point attractor within that basin. The basin is an absorbing state, from which there is a trajectory in, but no trajectory out. Only a large perturbation (perhaps you cheat, for example, and flick the ball with your finger) will move the ball to another basin of attraction.

A point attractor is part of a stability process. That is, the possible events occurring within the absorbing state of a point attractor are constrained by the energy level within the absorbing state. As well as point attractors, there are several other types of attractors that can develop into a stability process. The solar system, for example, is a limit cycle attractor, as is a pendulum, or our heart when we are at rest. Stability processes around local attractors are present throughout the universe. Most are found in energy wells (Bickhard, 2002). These would include the bottom of a bowl in the example just given, a black hole or the temperature and final resting position of lava that has flowed into the sea. Stability processes can also be found in far-from-equilibrium processes in which the process continues as long as external energy maintains it. The temperature of an office, for example, will remain at eighteen degrees Celsius and the temperature of a cup of coffee in that office will fall to 18 degrees as long as the central heating (an external source of energy) is on. Stability processes are open to perturbation by other stability processes. Two galaxies may collide, in which case the point cycle attractors in both systems would be perturbed and a new point cycle attractor may form. Should the outside temperature fall to minus thirty degrees Celsius, the self-maintenant stability process that held the temperature of the office constant would be perturbed and

additional energy would be needed to restore the temperature to a comfortable eighteen degrees.

An attractor and its stability process is a constraint on the phase space of particular physical constituents of the process (Emmeche, et al., 2000). Prior conditions and local conditions are determining factors on physical constituents of the process. All constituent physical particles conform to the laws of physics at any moment of a stability process. However, it can be argued that the physical constituents of a stability process in a particular local condition and with particular prior conditions also conform with organizational patterns of process that are dependent on the laws of physics but are not reducible to them (Heylighen, 1992). If one takes the example of a hurricane, the particles within the hurricane organize into a vortex, a swirling mass of air around a central point or line. The vortex is a complex process that depends on the prior conditions of the particles that form the atmosphere and, of course, the laws of physics with which these particles conform. Once the varying initial conditions of each particle narrow into the phase space of the absorbing state of the vortex, the process of the vortex becomes an explanatory factor in the activity of the constituting particles. To elaborate, a pattern of process at an attractor in the phase space of particle trajectories can become a self-perpetuating series of events. That is, event A leads to event B which leads to event C and then event C leads to event A. This is referred to as closure (Heylighen, 1992), as the process is now more independent from the broader environment (although it is still prone to perturbation and dissipation through entropy). This closed process may become an element in another higher level process which in turn may reach closure. It is the organizational processes in which a closed process becomes an element in a higher level

closed process that generates phenomena such as crystals and snowflakes. It has been noted that similar patterns of process are evident at levels of analysis ranging from the molecular to the ecosystem (Fontana & Buss, 1996; Heylighen, 1992; Kauffman, 1995; Ponge, 2005). A soap bubble for example is a closed process that has a distinct (but not impermeable) boundary with the surrounding environment and an attractor at which the constituting parts are constrained to a limited number of possible trajectories. Similar descriptions can be applied to other bubble like phenomena such as a living cell, a multicellular organism, and even an ecosystem (Ponge, 2005).

It has been argued that a pattern of process such as a hurricane, a soap bubble, or a snowflake is an emergent. These processes present possible examples of downward causation in which particles of matter conforming with the laws of physics are not the sole determinants of the process, but rather, the organizational structure of the process constrains the phase space of its constituting elements (Emmeche et al., 2000; Heylighen, 1992). These patterns of process are determined by the organization of the whole as well as by the physical laws to which the particles conform.

Hurricanes, cells and ecosystems have not been explained in reductionist terms. Even though the first law of chemistry states that the behavior of all matter is determined by its constituents, this has not been convincingly demonstrated “for any but the simplest of molecules, and we are far from solving it for the general molecule, let alone a protein” (Benner & Gaucher, 2001, p. 414).

The above quote, however, is not in itself an argument for emergence or downward causation. Downward causation is still an open question when analyzing strictly physical (by which I mean non-living) processes. Theories of emergent patterns

of process are what Weinberg (2002) refers to as “free floating theories” (p. 45). They are independent of the fundamental principles of physics. If one analyzes a crystal at the level of any particular particle, the prior condition (i.e., the trajectory, mass, and energy of each particle), its conformity with the laws of physics, and local conditions (such as energy levels from the sun, gravitational forces, and the trajectory of other particles in the vicinity) are the only requisite factors of analysis. Complex closed processes such as crystals are not built down from the top level, but rather are determined by the activity of individual particles in closed processes that form lower levels of the structure.

If self-organizing patterns of process are not emergent, but caused solely by prior conditions at the particle level along with the laws of physics, an account still needs to be provided as to how these patterns of process persist. We need to account for both processes entering into ever more complex processes in which the basal constituents conform with these complex patterns, and also complex processes influencing each other’s activity. As we shall see, this issue becomes ever more pressing when one considers life processes.

Life Processes and Living Agents

In this section I consider the possibility that living agency is an emergent process. In the following section we I consider emergence in a world of interacting living agents.

A stability process that has yet to be discussed is a far-from-equilibrium, self-maintenant process (Bickhard, 2002) in which the process contributes to its own maintenance by consuming the energy and matter required to maintain equilibrium and emitting those substances that are detrimental to it. Kauffman (1995) hypothesizes that in the molecular complexity of early Earth, a self-maintenant process became auto-

catalyzing. Auto-catalysis refers to a recurrent series of events such as those of a closed process in which the process itself triggers a separate, yet similar process. That is, if a process were able to make copies of itself without changing itself, then life processes could have emerged. All living organisms on our planet are self-maintenant, far-from-equilibrium systems.

There are two additional aspects of a far-from-equilibrium, self-maintenant process that are characteristic of life forms on Earth and also pertain to the argument that a life process is emergent. The first is that a process can be recursively self-maintenant (Bickhard & Campbell, 2003; Campbell, 1974a). A recursively self-maintenant process is a process that responds to its own equilibrium by moving towards increased equilibrium. The process "tends to maintain its own property of being self maintaining" (Bickhard & Campbell, 2003, p. 225). Such a process involves feedback through which the overall process maintains equilibrium. A "vicariant" (Campbell, 1974a) thread[19] (or, we could say, sub-process) within the overall self-maintenant process responds to the equilibrium of the self-maintenant process, or to an aspect of that equilibrium. An illustration of this is given by Campbell (1974a). An organism responds to the detection of an energy source through a vicariant thread. The vicariant thread responds to the external source by absorbing the energy source into the organism. It should be clarified, however, that a vicariant thread is not an analogy for an eye or a mouth. It is a flow of events that maintains the stability of another self-maintaining flow of events. In this case, it is a flow of events that maintains (through the absorption of energy) the stability of the organism.

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[19] Campbell (1974a) refers to a vicariant selector rather than a vicariant thread. The use of "thread" coheres with a process account, but is a thread that moves a process towards a particular series of events and can thus be considered to "select" that series of events. There is no intention to change Campbell's meaning, just to couch it more comfortably in a process account.

The second aspect of a far-from-equilibrium, self-maintenant process is that it responds to local conditions. Recall that a far-from-equilibrium, self-maintenant process contributes to its own maintenance by consuming the energy and matter required to maintain equilibrium. In order for a process to persist, it requires a steady consumption of energy. A process that is impervious to local conditions can only persist as long as sufficient energy is immediately available. A far-from-equilibrium, self-maintenant process involves threads that respond to distal sources of energy either by moving the process as a whole towards that source or by regulating the energy of the process until such a source were in the immediate vicinity. A process such as this would be able to persist for longer by being responsive to its local conditions (Barham, 1996).

Auto-catalyzing far-from-equilibrium, self-maintenant processes may provide an explanation for how the first simple life forms developed on this planet (Kauffman, 1995) and may also be considered a minimal analysis of living agency. Specifically, a minimal analysis of living agency here refers to the ability of an agent to complete a work cycle in which it expends energy in order to create energy for itself. It can detect and attain energy from the environment and thus exhibits different behaviours depending on the location of the energy source and the current phase of its energy cycle (Barham, 1996; Kauffman & Clayton, 2005). This is far from a complete definition of a living biological agent, but it is a specification of some of the key necessary conditions for living agency as observed on Earth. It is the process as much as the physical particles that define the living agent. A living agent, for my purposes, refers to a particular organism that meets the specifications just delineated. Life process refers to the extended temporal span over which living agents perpetuate over several generations.

According to the second law of thermodynamics, the total entropy of any isolated thermodynamic system increases over time, approaching a maximum value at which point energy differences within the system have smoothed out and no physical work can be done. However, as specified in the description of living agency above, there are systems that are capable of maintaining a surplus of energy by attaining sufficient energy from the surroundings to compensate for energy expended in physical work. Auto-catalyzing, far-from-equilibrium, self-maintenant systems (i.e., living agents) are process driven and dependent on complex interactions between the system and its environment (Bickhard, 2002; Kauffman, 1995; Mead, 1932). The process driven constitution of a far-from-equilibrium, self-maintenant system operates at the level of the system as a whole and the system itself is inextricably and dynamically connected to the environment from which it consumes energy and avoids perturbation.

Living agency is a complex self-maintaining process in which the case for emergence extends beyond those put forward so far. Let us, for now, put aside the question of whether or not far-from-equilibrium processes such as hurricanes are emergent, and, for now, assume that such processes are not emergent. An argument can still be made that living agents are emergent. Each occurrence of a hurricane can, theoretically, be explained in terms of the prior conditions and trajectories of the individual particles, the laws of physics, and local conditions. This is not the case with living agents. Perhaps only one seminal living agent that existed momentarily some four billion years ago can be explained in this way. Since then, living agency has been a continual bifurcating process. For the most part, the prior conditions and trajectories of individual particles have pertained to living agency only in so far as they have either been

involved as an internal thread of the life process (as a protein for example) or have been responded to by a living agent (perhaps as photons of sunlight towards which a bacterium moves). The life process does not perpetuate and change because it was caused to do so by its constituent particles, but because of the prior conditions of the process—prior conditions constituted by the activity of other processes—and the local conditions within which the process maintains itself. The individual particles have been subsumed within that process for four billion years. This suggests that the perpetuation of life processes is a determinant of the basal constituents of that process. As noted at the beginning of the thesis, the eye did not evolve because it was caused to do so by the trajectories of particles of matter, but rather because the processes that responded to distal stimuli were better able to perpetuate. As shall be discussed shortly, evolution may be the paradigmatic case of downward causation (Campbell, 1974b).

Briefly, however, it is worth noting some aspects of this most minimal outline of a living agent and how they might accord with a Meadian position. One is that the very simplest living agent detects features of the environment it occupies. Another is that it responds both to local conditions and to its own equilibrium. The third is that the response of the living agent depends on what is detected. The first seven conditions of human agency outlined in Chapter three were that an individual must necessarily be in a situation rather than in a void; that an individual can attune to the situation; that there is a readiness to respond to the situation; that an individual's activity is purposeful; that an individual can distinguish between different possible responses, and that an individual has bio-physical mechanisms that facilitate the above mentioned conditions. These

conditions appear to be primordial (Heidegger, 1962) to the life process.[20] The term *primordial* means that they are a (not necessarily complete) set of enabling conditions for living agency on which all other conditions for living agency depend. A living agent, it has been argued, is within and depends on local conditions, it attunes to a situation (with varying degrees of acuity), it has a readiness to respond, responds for the sake of its own self-maintenance (a function, and in some cases, a purpose), and can respond differentially depending on the situation. Differential responding has been interpreted as the physical origins for a theory of meaning (Barham, 1996). Freeman (2003) sums up this interpretation of meaning as follows: "In biological terms the meanings of stimuli for an organism are demonstrated by the uses to which they are put in successful adaptation to environmental constraints" (p. 2495). Identifying the generation of meaning in the activity of the simplest living agent depends on the definition of "meaning" that is applied. Mead (1910), however, considered meaning to be in the differential responding of an organism to elements of its environment; a position that coheres with a primordial condition for meaning being the responding of the simplest living agents.

Nonetheless, Mead (1910) also noted a distinction between meaning and awareness of meaning, the latter only being present in reflective conduct. There is, of course, a profound qualitative distinction between the agency of a bacterium and the agency of a human being. Crucially, an enabling condition of human agency that is not primordial to living agency is that an individual occupies perspectives that subsume the

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[20] Heidegger (1962) likely would not have used the term "primordial" to refer to the primordial conditions for living agency. His project was to seek the primordial conditions of the being of a person, which, as shall be addressed in the final chapter, is a different project. Nonetheless, primordial refers to the condition upon which other conditions depend and can (over Heidegger's dead body) be used in this context.

perspectives of others. To develop an argument for the emergence of human agency in phylogenesis, one can take two temporal spans of analysis. In the first, one considers whether the life processes through which perspective taking evolved are emergent and, in the second, whether perspective taking itself is an emergent within the life processes on Earth. The former question has been partially addressed in our examination of the living agent. I now turn to the world in which living agents have evolved, diversified, and eventually evolved a perspective taking living agent engaged in significant gesture and reflective conduct. I then move to the second temporal span so as to analyze that which has emerged within and through the exercise of human agency.

Downward Causation in the World of Living Agents

An account has been provided that delineates the minimal features of a living agent and which, according to Kauffman (1995), may also account for the origins of the first living agent. This is the inside-out argument in which it is argued that the processes that constitute the living agent may be irreducible to their basal constituents. An account also needs to be provided of how these living agents diversified and perpetuated. This is the outside-in argument that the relationship between living agents and the world they occupy is a downward causal process through which phylogenesis of organisms occurs. This is the evolutionary, and arguably emergent, account of life on Earth. It is not however, an account that ignores upward causal determinants of evolutionary processes. In the words of Kim (1999):

> To reduce the gene to the DNA molecule, we must first prime the target property, by giving it a functional interpretation—that is, by construing it in terms of the causal work it is to perform. Briefly, the property of being a gene is the property of having some property (or being a mechanism) that performs a certain causal function, namely that of transmitting phenotypic characteristics from parents to offsprings. As it turns out, it is the DNA molecule that fills this causal

> specification (‘causal role’’), and we have a theory that explains just how the DNA molecule is able to perform this causal work. When all of this is in, we are entitled to the claim that the gene has been reduced to the DNA molecule. We can now formulate a general model to accommodate reductions of this form. (p. 10)

The causal efficacy of DNA is crucial to life processes. Leaving aside the gaps in our understanding of the determination of DNA in terms of its basal constituents conforming with the laws of physics or chemistry (Benner & Gaucher, 2001), and leaving aside that DNA is embedded in chromosomes which in turn are embedded in cells that constitute a process that has perpetuated for hundreds of millions of years, there is still a reasonable assumption to be made that each particular change in the structure of DNA depends on no more than chemical processes in which the trajectories of particles of matter conform with the laws of physics. If this is the case, then each particular change in DNA and each resultant genotype is the result of events caused by no more than particles of matter conforming with the laws of physics.

What Kim does not address is the perpetuation of these genetic changes over time spans ranging from the ontogenetic to the evolutionary. The first proponent of downward causation, Donald Campbell (1974b), developed the theory of variation and selective retention.[21] According to Campbell, all processes of living agency conform with the laws of “lower levels” including the laws of physics. Moreover, an explanation of living agency will remain incomplete until the lower level mechanisms and processes have been specified. However, Campbell writes:

> [b]iological evolution in its meandering exploration of segments of the universe encounters laws, operating as selective systems, which are not described by the laws of physics and inorganic chemistry, and which will not be described by the

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[21] In 1974 a or b , Cambell used the term “Blind Variation and Selective Retention.” He later changed this as intrinsic constraints (which shall be discussed) suggest that variation is not entirely random.

> future substitutes for the present approximations of physics and inorganic chemistry. (p. 180)

The selective systems constrain the activity of processes at lower levels and their "presence, prevalence or distribution (all needed for a complete explanation of biological phenomena) will often require reference to laws at a higher level of organisation as well" (Campbell, 1974b, p. 180). These selective "laws" are what Campbell refers to as downward causation although it will suffice here to refer to them as selective processes. Campbell noted that downward causation in evolution is not evident when the temporal span of analysis is telescoped to the momentary and may only be evident as the temporal span of analysis extends over several reproductive generations. He famously illustrates downward causation by describing the jaws of a worker termite. The jaws are optimally developed in accordance with laws of physics, in particular, the principles of macro-mechanics that are an underlying aspect of the functionality of the jaws. The jaws were not, however, selected by the DNA template. Rather they were selected by the termite's active engagement with its world. The DNA template could just as readily produce lesser functioning or even dysfunctional jaws and still conform entirely with the laws of physics. There is, Campbell suggests, a "reverse-directional" (p. 181) cause in which the efficacy of the jaws selects the DNA template. An even more vivid example of downward causation is that many soldier termites have jaws so well adapted to combat that they are entirely unable to feed themselves. They depend on the workers to feed them. The activity of the ants is dependent on sociological processes such as division of labour.

Evolution is not simply a bio-physical process. Changes to the bio-chemical structure of a living organism occur through mutations to the organic structure during

reproduction. Mutations are determined through processes of upward causation in which physical and chemical processes alter the structure of the DNA. Changes to the phenotype resulting from such mutations are multifarious and, in terms of the organism's capacity to reproduce, can have a detrimental, neutral, or positive effect. The upward causal process is not the sole determinant of the evolutionary process. The evolutionary process is determined by the individual organism's ability to cope with its environment and by coping we are referring to activity that emerges within a living agent's primordial condition of maintaining stability. If the phenotype enables the organism to cope with its environment with greater efficacy, then the genetic mutation continues to the next generation. In other words, the coping relationship between the organism as a whole occupying an environment as a whole is a determinant of the evolutionary process and is a causal factor in the resultant physical form.

As an example, to the extent that temperament (Clark, 2005; Goldsmith, Buss, & Lemery, 1999) is a thread in a life process that extends beyond the ontogenesis of a particular individual, it may be possible to identify strands of DNA that are a contributing cause to the temperament of an individual. However, in the evolutionary account of living agency, the perpetuation of this strand of DNA over generations occurs through the engagement of a life process in a dynamic world. DNA is a moderator through which a self-maintaining, far-from-equilibrium process adjusts and perpetuates to its everchanging local conditions. To say that temperament is genetic is only saying that this thread of a living agent's engagement with the world has perpetuated over several reproductive cycles. It does not explain what temperament is or why it perpetuates. These

issues can only be explained in terms of both the engagement of the life process with its world over a temporal span and the conditions of its world over that period.

To sum up the argument presented so far, life processes are self-maintenant processes that perpetuate through the detection and absorption of energy in their surroundings. They are sensitive to local conditions. Of the multitude of bio-physical changes that occur within the life process, those changes that perpetuate can only be explained in terms of a living agent's engagement with a world of activity. It has been argued that the selective retention of change in evolution is the paradigmatic case of downward causation.

Three elements of a theory of emergence have been discussed thus far. The first is that a self-organizing process such as a hurricane may be irreducible to its basal constituents. The second is that the continual bifurcation of life processes cannot be accounted for by the prior conditions of basal constituents even if (theoretically) a hurricane, or other non-living dynamic processes, can be accounted for in this way. Life processes have become threads of other life processes in a continual and cumulative series of bifurcation and combination that extends over four billion years. Third, the world with which life processes engage has emerged within a selective process that is insufficiently explained by the laws of physics.

Mead's Theory of Emergence and Perspectives

Theories of emergence through patterns of process and downward causation were developed over the last three decades of the 20th Century and were not available to Mead. It cannot and will not be claimed that Mead presented arguments for the emergence of living agency in the terms expressed above. Nonetheless, the coherence between Mead's

theories of emergence (Mead, 1925, 1932, 1938) and the substance of these later theories is noteworthy. Moreover, his conception of perspectivalism is an important contribution to theories of emergence.

In *The Philosophy of the Present* (1932), Mead presented a theory of emergence based on sociality. He considered sociality to be a dynamic process of interdependent activity. The prior conditions of a process including the prior condition of each particle of matter in that process are determining conditions under which a process perpetuates. At each moment of temporal passage, the process encounters novelty both in terms of change within the process and relations with surrounding processes. The process "enter[s] into new relations with what has arisen" (p. 47). What occurs at any particular moment is irrevocable and belongs to the determining conditions of the following moment. But the process of readjustment to a new stability in the present moment of activity is unpredictable and irreducible to the basal constituents of either the process or the local conditions.

As discussed earlier, if determinism holds, then novelty is, in one sense, an epistemological issue; an omniscient knower could still predict the future. In another sense—a sense much closer to Mead's (1926, 1932) thought—even if determinism holds, the concept of novelty has ontological implications. As I now discuss in some depth, the world is a world of perspectives. Events originate within a perspective. Events are real and the perspective has real causal influence on an event. Novelty is in the new relations that emerge as an individual encounters others and encounters the social objects within which he responds to others. This novelty is intrinsic to a perspective. Novelty has a

formative influence on an individual's activity, which, in turn, has a determining influence on ensuing events.

To Mead (1932) then, the emergence of novelty is in the continual readjustment of physical processes to an unpredictable present with each readjustment becoming an event to which other processes adjust. Life itself is a process in continual readjustment. Mead (1932) observed; "Plants and animals... present to science objects whose essential characters are found not in that which undergoes transformation but in the process itself and in the forms which the object assumes within that process" (p. 34).

Just as the detection of distal sources of energy (Barham, 1996) is specified as a primordial condition of living agency in the preceding analysis, Mead (1926, 1938) noted that success in perceiving distal stimuli facilitated the coping of living processes (although his focus remained on multicellular organisms). An organism's activity depends on its contact with its environment. As I will now discuss, life processes in continual readjustment constituted the primary example of Mead's (1926) reality of perspectives.

In short, the reality of perspectives[22] is an organism's engagement with the events of its environment through its sensitivity to contact and distal stimuli. The response of the organism to the events of its environment becomes an event to which other organisms respond. The events including the responses of individual organisms are real. They occur in a shared environment. Perspectives are unique. Living processes attune and respond to events in accord with their own modes of activity. Because the events are real, the perspectival processes that caused the events are equally real. As I go on to discuss, this

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[22] A perspective may refer to the perspective of a particular organism, group of organisms or an ecosystem (Mead, 1926).

perspectival processes also accord with contemporary theories of complex systems and emergent life processes.

The central notion of a reality of perspectives is fundamental to an ontology in which self-determining human agents engage within the world. However, Mead mistakenly made use of the theory of relativity to argue for the reality of perspectives. Following the thought of the philosopher, Whithead (1919), Mead (1926, 1932) believed that the reality of perspectives was best illustrated by consentient sets in which the organism's engagement with a percipient event depends on its spatio-temporal position and that of the event. The difference in perspectives between two organisms is in the difference of spatio-temporal standpoint. According to Mead (1926, 1932), the sets of relations between objects and actors in a situation were consentient sets and the acts of individuals were percipient events. However, percipient events, as derived from relativity theory, pertain to the perceived speed of moving objects and the perceived time it takes for an event to occur or a process to continue from one event to the next. There is negligible difference in the motion and temporal span of a percipient event of any two earthly organisms capable of perceiving it. Mead's application of relativity is an interesting analogy but not a plausible explanation for the reality of perspectives.

Although Mead's (1925, 1926, 1932) employment of relativity theory is mistaken, the concept of perspectivalism that Mead presented is fundamental to an emergent ontology. Perspectivalism explains the causal efficacy of living agents on the occurrence of events and the reality of events that is determined, at least in part, by the attuning and responding of living agents. Moreover, events are reciprocally determining of the activity of living agents. An organism, through its sensitivity to distal events, is engaging with

possibilities rather than certainties and engaging with them from a unique spatio-temporal standpoint. Both the past and the future are engaged with from a perspective. Both past and future only exist as the readiness of an individual to engage with the fleeting present.

> [T]he only instance we have of prehension in experience is this holding together of future and past as possibilities—for all pasts are as essentially subject to revision as the futures, and are, therefore, only possibilities—and the common content which endures is that which is common to the organism and environment in the perspective. (Mead, 1926, pp. 83-84).

Through the processes of evolution, the emergence of human society brought about the complex perspective taking described in the previous three chapters. Human engagement with the world is a perspectival engagement that cannot, even with the practices of science, discover a single, perspective free reality, because the perspectives with which humans and other organisms engage with the reality of events is intrinsic to that reality.

Mead's error was to account for novelty in terms of relativity theory, namely: "the relativity of time, that is, an indefinite number of possible orders of events" (1926, p. 84). This "indefinite number of possible orders of events" is combined within an individual perspective into a coherent array of attitudes constituting a past and future. Contemporary theories of emergence and complexity suggest that without recourse to consentient sets and relativity theory, there is still a vast (if not indefinite) number of possible orders of events. Recall that novelty, for Mead (1932), referred to new relations that emerge as individuals encounter each other and encounter the social objects within which they respond to each other. For living agency, this can be restated as follows: novelty refers to new relations that emerge as living agents encounter each other and encounter the environment within which they respond to each other. If novelty is thus understood, there

is a top down novelty inherent in downward causation. In any moment of activity, relations arise among living agents that have causal efficacy over events and also over the basal physical constituents within a situation. The novelty of relations among living agents is accentuated by bottom up processes. Any sequence of events (i.e., a process) in which perturbation may occur is a profoundly uncertain sequence of events, whether the perturbation originates in the motion of particles or contact with other processes. The moment a perturbation does occur, it can bring about new relations among living agents and these new relations in turn bring about new possibilities of downward causation. Crucially, it is not that perturbations to a regular sequence are novel or undetermined. Such perturbations may be entirely determined. Rather the key point is that perturbations in the physical fabric of the universe lead to novel relations between living agents.

From the simplest living organisms to the most complex human society, novelty is present in the relations among living agents. I will start by considering a single cell. Novel relations can be illustrated by a chemical perturbation in a replicating cell that may have made that cell more sensitive to light. The chemical perturbation is physical (and perhaps determined). However, it also brought about a novel relation and novel situations. The relation between a newly photosynthetic cell and its environment influenced that cell’s activity and events that subsequently occurred. Downward causation is the causal influence of such relations on basal physical properties. Novelty arises in relations. Relations are between that to which an agent attunes and the readiness (or lack thereof) of that agent to respond. A perspective is constituted by an agent's readiness (i.e., attitudes). Novelty, thus described, is inherent in a perspective whether or not the world is determined.

In short, the reality of perspectives is a reality of multiple, bifurcating causal influences generating new relations among living agents. The question of living agency in general and human agency in particular is a question of self-determining engagement in a world of novelty.

The Reality of Perspectives

I now offer an alternative argument in support of the reality of perspectives: the determining influence of perspectives on the flow of events that constitute the world. Elements of an argument have been presented that suggest that some physical processes are not sufficiently explained by particles of matter and the laws of physics. These processes can become stable, auto-catalytic, self-maintaining processes, viz., life processes, in which some perturbations perpetuate and others are extinguished. The selective retention of perturbation in life processes depends on local conditions as well as the effect of the perturbation on internal stability of the process. Selective retention is an argument for downward causation. The relationship between a life process and local conditions precedes and thus partially determines which perturbations will perpetuate.

An account will now be provided for the emergence of perspectival engagement within life processes. This account will illustrate the primordiality of a perspectival world and also the profound qualitative difference between the perspectival engagement of living agency and the perspectival engagement of human agency. The primordial conditions of living agency have been outlined above. The novelty of each moment and the perpetuation of novelty in selective retention have also been considered. These primordial conditions can be considered as rudimentary capacities from which varying modes of engaging with the world and hence varying perspectives emerged.

In *The Fundamental Concepts of Metaphysics* (1995), Heidegger presents a thesis that the stone is worldless, the animal is poor in world, and that Dasein, (which preliminarily can refer to the being of a self-interpreting individual) is world-forming. His thesis is worthy of attention as it highlights the constraints on life processes, the differing relationships of living agents with their worlds, and the differing perspectives that they occupy. Moreover, as we move to a discussion of human agency, it will be argued that Heidegger offers primordial enabling conditions for the "I" that complement Mead's thesis.

The stone is worldless because it requires no active interaction with the world. The living agent, however, is connected to the world. The connection is through its organs such as eyes, nose, and mouth. Although the organs have a towards-which—the eye, for example, is for seeing—organs are not equipment in the same sense that pens or hammers are. "As equipment the pen is ready for writing, but it has no capacity [*fahigkeit*] for writing" (Heidegger, 1995, p. 220). The eye, however, has a capacity for seeing, a capacity that precedes the evolution of the eye and belongs to the living agent of which it is a part. A capacity is a possibility manifest in the constitution of the living agent prior to the actualization of the organs and behaviours that realize the possibility. A capacity is neither a Platonic nor teleological ideal, but rather, it is a readiness to engage with the world in certain ways.

I presented earlier some of the primordial conditions for living agency. These conditions are not only enabling conditions for living agency, but, as shall be discussed in some detail shortly, enabling conditions are also constraints on the possible modes of functioning and engaging with the world. A capacity is a possible mode of engagement

within the world that is enabled by the conditions for existing as a living agent and is also constrained by modes of existence enabled by these conditions. Clearly, a capacity is not a static property of a living agent or a pre-given list of phylogenetic possibilities. One cannot, for example, claim that a single cell organism one billion years ago possessed the capacity for joint attention. Rather, a capacity is constituted by the shifting constraints and enabling conditions of life processes. I will argue that the continual bifurcating and combining of life processes brings about new enabling conditions and new constraints that constitute new capacities for engaging within the world.

Capacities can be illustrated with the example of a single cell organism such as a bacterium that, as a living agent, maintains the primordial conditions of a living process. It can, for example, detect and ingest energy sources. As such, bacteria have a capacity to detect and digest, and it is these capacities that perpetuate and diversify in the relationship between the life process and the world it occupies. “The capacity itself governs and delimits the emergence of what it takes into service and the manner in which it does so” (Heidegger, 1995, p. 226). The eye emerged from a capacity to attune; a capacity that preceded the emergence of the eye. Moreover, the capacity to see is not a capacity of the eye, but one of the many capacities of the living agent. The eye does not see, the living agent sees as the capacity of seeing emerges with increased acuity through the evolution of the eye.

The implications of this argument are as follows. First, Kim’s (1998, 2005) reductive physicalism is a functional reduction and yet Heidegger’s (1995) discussion of the capacities of living agents suggests that, as the temporal span of analysis is extended into phylogenesis, functions are not reducible to their basal constituents. The capacities of

living agents did not evolve because they were caused to do so by particles of matter and the laws of physics, but because the primordial conditions for living agency, that is, the enabling conditions for a process as a whole to cope in the world, opened possibilities of relating to the world.

Second, capacities can be considered as intrinsic constraints on the emergence of life processes (Bickhard & Campbell, 2003). As we have discussed, novelty is pervasive, and yet life processes perpetuate in fairly stable configurations despite this. There are physical constraints on novelty, such as the bonding of molecules in a protein, or a strand of DNA, that prevent random variation and can be reduced to the laws of physics. Other constraints, such as the primordial capacity to detect energy sources may not be readily reduced to the laws of physics, and yet, they are a constraint on the possibilities of the life process. No matter how local conditions change; there are intrinsic constraints on how a life process can adapt. What can emerge is constrained by what has emerged. The capacities of living agents emerge within the intrinsic constraints inherent in life processes. The events occurring within the world to which living agents attune constitute the primordial conditions of a perspectival world. A living agent attunes and acts from within a bio-physically and spatio-temporally constrained set of possibilities. Each living agent's perspective is a unique subset of the arrays of perspectives emergent within a world of relations among living agents.

Heidegger (1995) continues his thesis with a discussion of the captivation of the living agent by its world and the *disinhibiting rings* within which it behaves. Focusing his attention on insects and single cell organisms (and openly evading an investigation of primates), Heidegger says that, "the behaviour of the animal is not a doing and acting as

in human comportment, but a driven performing" (p. 237). The captivation of the living agent is in its impulsive driven activity through which it is bound to the environment in which it lives. Bees, for example, see and perceive to the extent that they attune to and respond to their world. They do not, however, apprehend "something as something" (p. 259); that is, they do not take a flower as a flower or even nectar as nectar. The bee is both open to the world in that it can attune and respond, but it is also captivated within its innate modes of response. The responding of a bee is confined to an inter-connected, "intrinsically determined" (p. 249) fixed array of responses. In Heidegger's words, the bee is

> within a ring which it cannot escape and within which something is open for the animal. Yet while it is certain that all instinctual behavior is a relating to... , it is just as surely the case that in all its behavior the animal is incapable of ever properly attending to something as such. (p. 249)

A living agent such as a bee, according to Heidegger (1995), evolved in relation to the world, a relationship between the capacities of the agent to cope and the world within which the capacities are actualized. Nevertheless, the living agent is held in captivation, unable to take the environment it occupies as a world, for it is unable to perceive the being of that with which it connects. The behaviour of the living agent is a relating to the world it occupies and that while it is bound by its own instinctual drives, it is open to behave in the world within those bounds. The disinhibiting ring within which its "contextual behaviour and instinctual activity moves" (Heidegger, 1995, p. 277) is intrinsic to the agent and also specific to it. Each agent encircles itself with its own disinhibiting ring and each disinhibiting ring intersects with the disinhibiting rings of other agents. This argument finds agreement with Mead (1925) who wrote: "[T]he ongoing activity of the individual form marks and defines its world for the form, which

thus exists for it as it does not for any other form" (Mead, 1925, pp. 256-257). There are differences in the array of possible responses available to individual living agents that, along with each agent's spatio-temporal standpoint, constitute the perspective of the agent.

For Mead (1925, 1932, 1938), (but not necessarily Heidegger) naturalism is a mode of scientific engagement with a world of real events that can be empirically investigated. Events are substantially determined by the interacting, perspectival engagements of living agents. Because of this, perspectivalism is part of the natural world. Perspectivalism is both a subject of naturalist empirical investigation and also the perspectival standpoint from which such investigations take place. Crucially, for Mead perspectivalism was not the relativism of internal qualia, mental states, or phenomena of consciousness, but the conduct—the attuning and responding—of living agents within the natural flow of emergent events.

Heidegger (1995) and Mead (1925, 1926, 1932, 1938) develop their accounts in different ways. Heidegger, as we have seen, focuses on the capacities of a living agent developing into driven behaviour as the living agent relates to its world within a disinhibiting ring. Heidegger's concept of capacities implies a temporal flow of events within which they are actualized. Mead, however, also focuses on the temporal sense a living agent has in relationship to the environment and how this differentiates the perspective occupied by each living agent. Temporality, for Mead, is perspectival. It is formed through the conduct of living agents in relation to their world (Joas, 1997). In the case of a living agent such as our bee, there is no sense of past and future but only immediate attuning and responding within the disinhibiting rings of impulsive conduct.

Nonetheless, the temporal flow from irrevocable past to novel present is constitutive of the situation. The adjustment of the living agent is a product of the irrevocable past within which the response was phylogenetically determined. The future is not in the bee's anticipation of future events but in the impulsive coping with moment to moment novelty in its world through which the life process perpetuates.

I will briefly summarize the argument for an emergent relational account of life processes as developed so far. Four billion years ago there was a world of bits of matter and structures aggregated out of bits of matter. The physical laws to which the matter accorded were complex and allowed for the forming of systems far from the thermodynamic equilibrium at which such systems would no longer have had sufficient surplus energy to maintain themselves. These systems, which were already inextricably entwined in a dynamic relationship with their environment, evolved into living agents. The phylogenesis of living agents is not determined solely by the upward causal factors of bio-physical change, but also, by the determining role of the world through which changes are either retained or extinguished. Furthermore, a key feature of the simplest living agent is to detect distal sources of energy and adjust behaviour accordingly. The coming to existence of this primordial feature of the living agent brought with it the potential to behave differentially in ever more complex situations, and brought about a relationship of the agent with the world that is determining of which potential physical attributes and behaviours (i.e., capacities) will be actualized. Capacities are discussed in depth by Heidegger, who then proceeds to note the bounds of the entailing relationship, bounds set by the captivation of the living agent within a disinhibiting ring of behaviours. These disinhibiting rings are analogous to Mead's reality of perspectives in several

respects. Neither can be sufficiently explained by the physical particles that constitute the agent and both are dependent on a temporal flow in which the relationship between the agent and the world is a determining factor in the agent's phylogenesis, ontogenesis, and moment to moment behaviour.

Emergence, it can be argued, is not a unique aspect of human agency, but rather, an aspect of life processes and maybe complex non-living processes. Emergence is not, as Kim (1992) claims, a set of "quasi-scientific, quasi-metaphysical theses" (p. 121). Rather, emergence is a credible hypothesis that attempts to provide a more complete account of life processes and living agency than the insufficient account provided so far through reductive physicalism.

Emergence may not be subject to a single mode of explanation. One cannot assume that the algebraic constraints proposed as the organizing process for chemical reactions (Fontana & Buss, 1996) are necessarily the same constraints or even the same underlying principles of constraints within which the Cambrian explosion occurred or flowers evolved. As we move to a discussion of the emergence of human agency and the profound qualitative difference between that and any other form of living agency, this argument will be developed.

From Living Agency to Human Agency

It is from within the emergence of living agency that human agency has emerged. There is a historical account to be told of evolution and the emergence of human agency (Bickhard & Campbell, 2003). The historical course of evolution can be traced in terms of actualizations of capacities from within intrinsic constraints combined with the selective processes that constitute a living agent's engagement with its world. Some

events not only led to new modes of engaging with the world, but also new modes of constraints and new capacities for possible relations with the world. The emergence of the eukaryotic cell from within the intrinsic constraints of the prokaryotic cell or the emergence of sexuality from within the intrinsic constraints of multicellular auto-catalytic living agents, or the evolution of symbolic gestures from within the intrinsic constraints of perceptual and motor abilities would all be examples of the emergence of new capacities.

> All of these satisfy some selection constraints, offer new adaptednesses, encounter new forms of selection, and manifest new selections on and opportunities for other individuals and species. In this manner, evolution involves a high degree of evolving internal constraint, and the internal emergence of new potentialities for adaptedness. In being in these senses intrinsically internally driven, biological evolution is ipso facto intrinsically historistic: its conditions at any given point are not fully determined by its external boundary conditions, but are in large part determined by its own internal conditions that result from its own history. (Bickhard & Campbell, 2003, p. 227)

The precise course of this historical account is still a question open to empirical investigation. Moreover, the details of this account are not demanded in response to reductive physicalism. That evolution occurred is not at issue here, nor is the precise historical course of evolutionary events. The question of whether or not evolution is an emergent process (or array of emergent processes) has already been discussed. The issue at hand, then, is the novel quality of emergence in human agency.

As the world of living agents became more complex, the captivation of the living agent in instinctive drives developed into a “commando principle” (Dennett, 1994, p. 161) in which the animal acquired arrays of attitudes through engagement with its world and applied them to overcome obstacles. This loosened the bounds of the disinhibiting ring by bestowing animals with ever more complex learning and decision making

abilities. As the capacities of living agents actualized in differing modes of engagement with their worlds, conduct became more varied and complex and, after four billion years, humans emerged. Humans are not the end product of the evolution of life processes. Many other living agents out-perform human agents in terms of acuity of perception, speed of responding, and a myriad of other modes of coping. Research is also finding evidence that many modes of coping once assumed to be uniquely human, such as tool use, deception, and problem solving (Hauser, 2000) are present in other living agents.

All living agency is captivated within the disinhibiting rings constituted by the array of attitudes that arise in a moment of attuning. Nonetheless, while animal agency is captivated within disinhibiting rings delineated by a readiness to respond to the moment to moment events of an immediate situation, the disinhibiting rings of human agentive activity have been extended to encompass deliberative acts over temporal spans of hundreds of years (such as the building of a cathedral) and spatial spans well beyond the immediate range of perception (such as a national election or the Second World War).[23] Limits to the disinhibition of human agency are not clear. While the limits are perhaps best indicated by Wittgenstein's (2001) famous statement that "[t]he limits of my language mean the limits of my world" (p. 149), language is forever shifting and the emergence and changing usage of words such as *atom*, *self-determination*, and *email* all denote a shift in the bounds of the disinhibiting rings of human agency. Nor does language encapsulate the entire array of attitudes that arise in a moment of attuning; the attitudes that arise when listening to Beethoven or witnessing the abuse of a dog often

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[23] Heidegger (1995) insists that in the case of Dasein, the disinhibiting rings have been broken. I do not go this far as people are still very much embodied beings whose activity, thought, and desires are confined within the bounds of embodiment.

only arise in language in reflective conduct after the “I” has coordinated the attitudes into overt conduct.

Heidegger (1995), unlike Mead, did not consider living agency to be relevant to the question of human agency. There are degrees of difference in the extent to which varying living agents make decisions about their activity in the world based on prior learning rather than responding impulsively, but human agency is qualitatively different from that of the living agency from within which it has emerged. The emergence of human agency does not appear to be emergence by degree. As a human agent, I am writing a thesis on emergent human agency, while my closest non-human relative is captivated in an impoverished world with little if any language and scant capability for reflection. Seeking to understand human agency solely or even substantially in terms of its origins in the animal world is a futile program. The emphasis in this thesis is not to explain human agency in terms of living agency, but rather to show how an emergent relational account is a necessary condition for human agency.

A brief illustration of the differing quality of human and living agency shall be provided, followed by an even briefer revisiting of the Meadian account of human agency already provided in the preceding chapters. Finally, I consider the underlying qualities of human perspectival engagement in the world.

Imagine a group of chimpanzees being presented with a cake upon which there are four candles. They grab the cake, possibly fighting and intimidating each other in the process. The cake is something sweet and something to be eaten. Now imagine that same cake in front of a group of humans. It is placed in front of a four year old child in a North American family. Neither the child, nor anyone else, grabs the cake or fights others for it.

Rather the child sits there beaming a smile from ear to ear as she stares at the cake. The group of humans sing a song, then clap their hands, and then the child closes her eyes and makes a wish. The child is not responding to the cake as something sweet, something to be eaten. Rather the perspective with which she engages with the situation involves her being the focus of the group's attention, her being four years old, and her being "big" in the attitude of her peers. It is an array of attitudes involved in a world of social objects and differing perspectives. It is a world in which today she is the birthday girl. Her conduct is not the impulsive grab of the chimpanzee, but rather it is mediated by the array of significant symbols (Mead, 1934) or signs (Vygotsky, 1978) that have been incorporated into her perspective through her previous engagement within the world.

What are the enabling conditions that differentiate the child from the chimpanzee? Clearly there is a phylogenetic story to be told, for no chimpanzee can, through ontogenesis, be raised into the perspective taking typical of human conduct (Tomasello, 1999). However, the phylogenetic story may be a very small change in the mode of engaging with the world from which significant gestures extended the relevant disinhibiting rings of activity exponentially. A larger prefrontal cortex, for example, is associated with greater inhibition (Rubia, Smith, Brammer, & Taylor, 2003) and this may indeed be part of the account, but it is also worth noting that a chimpanzee or a dog can be taught to exercise inhibition when presented with a cake. Inhibition is not a uniquely human characteristic. The importance of this observation is that the chimpanzee is taught by a human to exercise inhibition and teaching is unique to (Hauser, 2000) and pervasive among (Rogoff, 1993) human agents. Teaching is a key enabling condition for a moment of human agency, but it is a condition that depends on joint attention (Tomasello, 1999;

Tomasello & Rakoczy, 2003). This is not to dismiss other important capacities that were actualized in the historical course of human phylogenesis. The dropping of the larynx (Barsh, 1999) and the growth in brain size (Semendeferi, Damasio, Frank, & Van Hoesen, 1997), for example, are notable developments in this history. That the dropped larynx perpetuated and became a pervasive feature of human agency depended on its efficacy as a mode of engaging with the world, especially as it significantly increased the chances of death through asphyxiation (Davidson, 2003). The dropping of the larynx may have evolved as an actualization for a capacity for complex, non-significant communication prior to the advent of joint attention. The growth in size of the brain may have facilitated attentional control (Donald, 2002) for any number of modes of engagement in the world. Neither of these actualizations come close to explaining the perspective of the birthday girl. However, with the advent of joint attention, a change of no greater bio-physical magnitude than either of the other two changes just mentioned, the conditions for human agency emerged, co-opting attention, vocal communication, inhibition, social interaction, and a myriad of other modes of conduct into a social world of symbolic meaning and perspective taking. For Mead (1925, 1932, 1934), the key distinction between human and other forms of living agency is that the human can take the attitude of another.

The case of human agency is the illustrative case for the suggestion that emergence is not a single kind of process, pattern of processes, or particular mode of constraint. Certainly, the activity of humanity shares characteristics with other emergent processes and many of the conditions for human agency are primordial to the simplest living agents. Many of the same constraints still apply. A human society needs to attain

as much energy as it uses, just as a colony of bacteria does. However, social conduct through the use of significant symbols removes constraints such as temporal and bio-physical constraints on acquiring skills. It also removes communicative and cognitive barriers to developing practices from concepts. *Justice* or *eugenics,* for example, are not only concepts that arose through social practice, but also concepts that guide and develop social practices. Social conduct also introduces new constraints such as police, social contracts, and organized militia. If one were to consider cultural history in the account of human agency—an essential endeavour which is beyond the scope of this thesis—other moments of emergence may also be identified, such as the advent of agriculture, of writing, and of the printing press. Each broke down some constraints, while new constraints emerged.

Chapter 6: The Enabling Conditions for a Moment of Human Agency: Persons Acting in the World

Mead and Heidegger

For Mead (1926, 1932, 1938), the world occupied by people, living agents, and particles of matter is a singular world of events. The world is not, however, a world of a singular flow of events. Events in a world of living agency, issue from a myriad of interacting perspectives. That is, the attuning and responding of a living agent becomes a causal influence on the activity of other living agents with which it is interacting. (See Chapter five for a detailed argument as to why this is the case). The perspective occupied by a person appears to be qualitatively distinct from that occupied by other living agents. A person can take the perspective of others. Because of this, the perspectival openings through which an individual engages with the world are continually shifting and often expanding to incorporate new modes of engaging within the world.

In this chapter, I offer some elements of a description of the perspectival openings through which an individual engages within the world. Of course, this is hardly a topic that can be presented in a single volume, let alone a single chapter. The elements focused on here will be the elements that underpin Mead's account of the emergent social world occupied by people; elements that are gleaned from the thought of Heidegger. Many times in this thesis, it has been argued that cognitive science or biology attempt to explain the mechanisms through which life and social processes occur without accounting for the relational activity within which these processes take place. At another level of analysis, one might say that Mead has accounted for the processes through which the complex social world of people has emerged, but he has said little about the being of that world

and the people who occupy it. Mead himself considered his account to be a functional account (1925, 1932, 1934); an account of how people engage in social conduct and how the social objects of human engagement emerged through their activity in both ontogenesis and phylogenesis. These were issues that were of little interest to Heidegger (1962, 1995). For Heidegger, it was the being of people, the being of the world, and the being-in-the-world inherent in the being of people that were the key foci of analysis.

A very brief comparison of the thought of Mead's colleague John Dewey and the thought of Heidegger will highlight that in some respects Mead's thought was, nonetheless, very close to that of Heidegger. Blattner (2000, under review) has analyzed the difference between Heidegger and Dewey in terms of their approach to knowledge and truth. In short, the difference comes down to Dewey's position that people encounter problems. Problems then bring people into deliberative, reflective conduct through which they overcome obstacles to their activity and continue with their activity. Knowledge and the assertability of that knowledge are determined by the efficacy of the practice derived through solution to the problem. For Dewey, like Heidegger, a person's understanding of the world is a very practical affair embedded in the "primacy of practice" (Blattner, 2000, p. 231). However, for Dewey, knowledge is derived from deliberative, reflective conduct when engaging within problematic situations. For Heidegger, understanding of the world is inherent in a person's revealing of the world through an individuated attunement to the situation at hand. Understanding is a person's prereflective being-in-the-world.

Mead's position in this respect is closer to that of Heidegger than that of Dewey. Indeed, when Mead (1938) wrote: "If knowledge is discovery of the unknown, this world

is not known—it is simply there" (p. 45), he was most likely critiquing the same aspect of Dewey's position as Blattner (2000).

Heidegger (1962), referred to the self-interpreting being of an individual person as *Dasein*. Dasein can be considered as that from which we attune and that to which we can attune. I argue here that Heidegger's thought on Dasein revealing a world with an individuated attunement elaborates Mead's position. Mead, like Heidegger, took prereflective conduct as a person's understanding of the world, and understood the attuning of the individuated self to be a product of practical conduct rather than a pre-condition for such conduct.[24]

Three clarifications need to be made about seeking any form of cohesion between the thought of Mead and Heidegger. First, this is not an attempt at a seamless integration of two scholars' arguments, but an attempt to adopt elements from the thought of Heidegger to add additional depth of interpretation to the thought of Mead. Once again, it is emphasized that no general claims are being made about the coherence of Meadian and Heideggerian accounts of people and the world. Indeed one can imagine areas of vehement disagreement between the two scholars on the subjects of reality, science, and the relevance of the bio-physical mechanisms of an embodied human being. Another important clarification needs to be made with regard to the primordial conditions of human agency. In this thesis, use of the terminology *primordial conditions* has referred to the conditions from which all other conditions for functioning human agency emerge. For

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[24] Mead (1932, 1934) was also influenced by Dewey's belief that knowledge, including knowledge of the individuated self, came to reflective awareness when engaging with problematic situations. Mead, like Dewey, believed that reflective conduct arose when an individual encountered an obstacle to his activity. The distinction is that Mead emphasized pre-reflective engagement within the world as a necessary enabling condition for reflective conduct. Pre-reflective engagement was not an issue that was emphasized by Dewey.

Heidegger, primordiality refers to the conditions upon which all other conditions for being a person depend. It is a different angle of approach to the question of human agency and personhood, and equally relevant. Finally, Mead (1926) conceives the world as a reality of perspectives. He conceives the reality of the perspectives of all living agents to be distinct yet inter-related. As we have seen, Heidegger touches upon the perspectives of living agents in his discussion of animality in *Fundamental Concepts of Metaphysics* (1995). This, however, was not an issue he dwelt on elsewhere. Heidegger's chief concern was the world of people. This is not to say that Heidegger saw the world as a singular or homocentric perspective. Rather, in *Being and Time* (1962) and in *Fundamental Concepts of Metaphysics* his concern is with the world engaged in by people through a perspectival opening (Dreyfus, 2007). I make use of Heidegger to add depth to the notion of understanding the world engaged in by people through a perspectival opening.

In order to elaborate on the perspectival opening through which people engage with the world, we need to describe some aspects of that engagement from a Heideggarian perspective and consider how these aspects cohere with the Meadian account provided in this thesis. Having discussed Heidegger's concept of how individuals encounter the world, we shall consider a more subtle interpretation of world than the prima facie "world of events" (Mead, 1932, p. 1) that was touched upon at the beginning of the thesis.

Attuning in an Emergent World

A condition for a moment of human agency outlined in this thesis was that an individual can attune to the world. According to Heidegger (1995), the world is manifest in a person's "fundamental attunement" (1995, p. 282), an attunement that belongs to an

active revealing of the world. The revealing of the world is in the "disclos[ing]" (Heidegger, 1962, p. 105) that lays open the world to a person. In disclosing the world, the disclosedness of other beings in the world is discovered.

Being is not a term that can be addressed comprehensively in this thesis. Heidegger's (1962) *Being and Time* is devoted to this topic and, by Heidegger's own admission, *Being and Time* was still an incomplete account (Dreyfus, 2007). For our purposes, however, being can be considered as that to which we attune. That to which we attune is not a thing in itself (Kant, 1933), but rather, as noted in Chapter two, that which is ready-to-hand in our moment to moment engagement with the world, that which is present-at-hand in our reflective analysis of an object, and also *Dasein* (i.e., our own self-interpreting existence). We attune to the existence of things, people, and situations as they appear to us in our engagement with a totality of involvements. As I shall elaborate on shortly, we do not attune to things, we attune to the existence of things. Readers are referred to Dreyfus (1991, 2007) and Heidegger (1962) for an in depth discussion of being.

The disclosedness of beings is the possibility for the being of other beings to be revealed. Without disclosing, nothing would be revealed. Without the disclosedness of beings, there would be nothing to be discovered. Disclosing is primordial to the being of a person and to being-in-the-world. In the words of Heidegger (1962): "[I]f the world can, in a way, be lit up, it must assuredly be disclosed. And it has already been disclosed beforehand whenever what is ready-to-hand within-the-world is accessible for circumspective concern" (p. 106). Disclosing is an active attuning that is prior to our discovery of a world or any being in the world. As Dreyfus (1991) explains:

> On analogy with the way our eyes are constantly accommodating to the light, we might call the way we are constantly adapting to our situation "accommodation." But Heidegger needs no specific term for this most basic activity. It is so pervasive and constant that he simply calls it being-in-the-world....It is this holistic background coping (disclosing) that makes possible appropriate dealings in particular circumstances (discovering). (p. 104)

The parallels between this discussion of disclosing and the interpretation of the attuning of the "I" presented in this thesis are worthy of note. For Heidegger (1962), disclosing the world reveals the disclosedness of other beings. This is a primordial condition on which all other conditions for being a person depend. Mead (1925, 1938) also grasped the importance of disclosing and the disclosedness of beings. The "basis of awareness" (Mead, 1938, p. 75) is in a person's capacity to distinguish things and act in relation to those things. For both Mead and Heidegger, the active disclosing of the world and the readiness to deal with that world are primordial conditions of being a person. For Mead, in a moment of attuning, attitudes arise. There is a readiness to respond to a situation and the things and people in that situation that are constituted in an often prereflective array of attitudes. For Heidegger, in disclosing the world, that which is ready-to-hand: that which a person is ready to respond to—is accessible for our moment to moment (or "everyday" as Heidegger, 1962, p. 153, preferred to say) engaging within the world.

Furthermore, in the context of the quote from Dreyfus above, an analogy of our eyes constantly *attuning* to the light would work equally well. However, *attunement* already has a usage in *Being and Time,* a usage inextricably linked to disclosing but not quite as primordial. In Heideggerian terms, attunement or having a mood refers to the affective manner of disclosing. People do not disclose the world in a neutral mood-free state (an observation also made by the neuroscientist Damasio, 2003). We find ourselves

in a mood and with this mood we disclose the world. Dreyfus refers to this as the "affectedness" [*befindlichkeit*] of our disclosing of the world (Dreyfus, 1991, p. 168) (also translated as "state-of-mind." See Heidegger, 1962, p. 172). A person's "Being-attuned" (Heidegger, 1962, p. 172), then, is the mood from within which the person discloses a situation. This mood, according to Heidegger, is inextricably linked with being in a situation. Affectedness was also important to Mead (1910, 1934). In attuning to a situation, the attitudes that arise are not just a series of cognitive or rational responses, but an array of attitudes that involve motor, affective, and, at times, cognitive threads.

Mead (1925, 1934, 1938) considered attuning and the array of attitudes that arise to be mutually bound in the moment to moment engaging of a person in a situation. For Heidegger (1962), disclosing is distinct (but not separable) from attunement. Mead did not discuss whether attitudes arise out of the mood with which a person attunes or whether moods are constituted in the attitudes that arise in disclosing the world. It is a subtle distinction of interpretation, and one for which there is not a clear answer. There is a recursive relation between the mood that arises within attitudes in a moment of attuning and the mood with which one actively discloses the world (Damasio, 2003). The phrase *attuning of the "I"* does not cohere entirely with Heidegger's use of *Being-attuned*. Heidegger uses the term "Being-attuned" to refer to the affectedness with which a person discloses the world, whereas the term attuning of the "I" that is adopted in this thesis may encompass both the disclosing of the world and the mood within which the world is disclosed. A possible approach would be to slightly adjust Heideggarian terminology and suggest that the attuning of the "I" coheres with the *attuned disclosing* of Dasein.

People are involved from moment to moment in prereflective conduct within a world that is there. They encounter the world through an attuned disclosing of the situation they occupy (where *situation* is analogous with *the there* of Heidegger, 1962; see Blattner, under review). With the attuned disclosing of the world, people take an individuated stance. Reflective conduct and objectification of the self are only possible for a person who is already in the world. For Heidegger, there is an active disclosing of the world (Dreyfus, 1991) through which "Dasein is always brought before itself and has always found itself..." (Heidegger, 1962, p. 174). Attuned disclosing is prior to reflective conduct. Heidegger says, "Dasein is disclosed to itself prior to all cognition and volition, and beyond their range of disclosure" (p. 175). Dasein's disclosing of itself is not, of course, the attunement of a solipsistic entity, but rather, a person occupying a perspective and inextricably embedded in the world and attuning to the world and his own being in the world.

As has been discussed in this thesis, Mead (e.g., 1913, 1925, 1938) also considered the attuned disclosing of the world and the attuned disclosing of other people in the world to be a precondition of a disclosed attuning to one's self. Through attuned disclosing of the world, the perspectives that arise in attuned disclosing, and the conduct that follows, an individual takes the perspective of others and individuates his own perspective.

> Recognizing the self can not appear in consciousness as an 'I,' that it is always an object, i.e., a 'me,' I wish to suggest an answer to the question, What is involved in the self being an object? The first answer may be that an object involves a subject. Stated in other words, that a 'me' is inconceivable without an 'I.' And to this reply must be made that such an 'I' is a presupposition, but never a presentation of conscious experience, for the moment it is presented it has passed into the objective case, presuming, if you like, an' 'I' that observes ' but an' 'I' that can disclose himself only by ceasing to be the subject for whom the object' 'me' exists. (Mead, 1913, p. 374)

"[T]hat a 'me' is inconceivable without an 'I'" tells us that there is necessarily a disclosing both of the world and of the being of a self as a being in the world. Disclosing is a primordial condition in order for there to be a "me," that is, a "repository of perspectival understandings" (Martin, 2006, p. 238). There is also a very strong connection between Mead's assertion that the "I" is a presupposition of conscious experience and Heidegger's assertion that Dasein's disclosing is "prior to all cognition and volition, and beyond their range of disclosure" (1962, p. 175). Conscious experience, according to Mead (1925, 1938) is present in a person's prereflective capacity to attune to the people and things in a situation and act in relation to those things. Only once we have attuned to the world and other people in the world can we attune to ourselves. "Self-consciousness" (Mead, 1925, p. 255) arises in the attuned disclosing of an individuated self in engagement with a world of others. Moreover, in this thesis, I have developed the argument that the primordial capacity to attune to the world long precedes the evolution of any form of agentive cognition and that the development and refinement of this capacity into the inter-perspectival attunement of the human agent is a key feature of human agency. This fundamental aspect of the argument developed herein closely coheres with Heidegger's assertion that Dasein's attuned disclosing is a primordial condition for, and thus precedes, cognition and volition.

Projecting and the Sense of Being a Person

If, as Heidegger (1995) claimed, people are world-forming and the world is formed through their moment to moment attuned disclosing of situations, then the attunement is to something from which world is formed. According to Heidegger (1962, 1995), attuning is a person's projecting into what is possible and can be actual. A

person's attuned disclosing of the world is necessarily purposive. Projection is an attuning to possibilities for acting in the world. It is only because there are agentive beings, actively engaging with the world that there is a world there at all. People actively project themselves into the world and in so doing form a world of beings with which they can engage. Each "occurrence" (1995, p. 363) of projection is a primordial aspect of our attuning. An occurrence of projection is an attunement to the possibilities laid open to us in each moment of activity, not as a plan or blueprint (Blattner, 1996), but rather as the structure of our understanding of the world disclosed to us. The world is a world of possibilities. Indeed, just as Kant (1933) proposed that we cannot conceive of a world without space, Heidegger proposed that we cannot conceive of a world without possibilities into which we project ourselves (1962, 1995).

Mead was very much concerned with projection. In accord with Heidegger (1962,1995), Mead (1925) also believed that only with agentive projection into the world—only with a projection from that which is disclosed into possibilities for activity in the world—could there be a perspectival opening into the world at all. For Mead the world is a world of possibilities. In a frozen "knife edge present" (1925, p. 273) there are no beings as such. In a world without projection into future possibilities, objects would be non-existent and there would be no reason "why any lines should be drawn about any group of physical particles, constituting them objects" (1925, p. 273). The world exists in the readiness to respond of the person and the readiness of beings to be responded to. The world is a world of temporal passage which is intrinsic to a person's conduct. There is, moreover, a key distinction to be made between contact experience and attuning to distal objects (Mead, 1925, 1938). Distal objects are, to borrow a Heideggerian term, ready-to-

hand because we take these objects as objects of practical use when we engage with them. They are what they are because of the possibilities that are inherent in our readiness to respond to them. “If we recognize that experience is a process continually passing into the future, objects exist in nature as the patterns of our actions” (Mead, 1925, p. 273). Projection is also intrinsic to the way people engage within an emergent world. For Mead (1932), each moment is a moment of novelty, a moment that has never occurred before and could not be predicted. In a moment of attuning, both the emergent present and irrevocably determined past coincide. The sociality of emergent human agency is in a person’s ability to attune to both the past and the novel, project into the possibilities disclosed in that moment, and act within the situation.

An illustration of the “I” as the attuned disclosing of the world and the projection of being in the world can be seen in the context of the following quote from *Mind, Self, and Society*:

> The “I” gives the sense of freedom, of initiative. The situation is there for us to act in a self-conscious fashion. We are aware of ourselves, and of what the situation is, but exactly how we will act never gets into experience until after the action takes place. (Mead, 1934, pp. 177-178)

That there is a situation there can only be the case if there is a disclosing of the world. That the “I” gives a sense of freedom and initiative is dependent on the projection of possibilities into the world.

Projection underlies many of the enabling conditions for a moment of human agency discussed in Chapter three. Because an individual discloses and projects into the world, a response is for a purposive engagement with a situation; an individual can distinguish between different possible outcomes to a situation and an individual can anticipate the responses of others. As shall be discussed in more depth shortly, just as

disclosing and projecting are equiprimordial to Heidegger (1962), we can say that in a moment of attuning, attitudes arise. Attuned disclosing of the world and a readiness to engage with the world are equiprimordial.

There is, however, an important distinction between Mead and Heidegger on the projection of possibilities. For Heidegger, projecting into possibilities is a human quality. Heidegger did not discuss the origins of projection although Dreyfus (1991) suggests that projection does not exist in an infant, but is learned through ontogenesis. For Mead (1925), however, projecting is inherent to life processes in an emergent world. In attuning to distal sources of energy, predators, shelter and mates, living agency is already projecting itself into future possibilities. Indeed, in this thesis, it has been proposed that a living agent's readiness to respond by attuning to distal sources of energy for the sake of its own self-maintenance is a primordial condition for living agency.

The implication of this difference is that, for Heidegger (1962), people take beings as beings, say, a hammer as a hammer, because, in disclosing the world, they project the possibilities of practical use into these beings. In disclosing the world, "[w]ith equal primordiality, the understanding projects Dasein's Being both upon its 'for-the-sake-of-which' and upon significance, as the worldhood of its current world" (1962, p. 185). This statement requires some additional elaboration. For Heidegger, understanding is the everyday, prereflective familiarity with which an individual engages with the world. Significance is the taking of something as something. The significance of a being is the interpreting of that being in a way that facilitates its use to me. One might say, for example, that a door handle is significant because I take it as that which I use to open a door. According to Heidegger (1995), the captivation of an animal's world precludes the

taking of beings as beings. (Whether all animals on Earth are entirely precluded from a world of significance or mostly precluded from a world of significance is of little relevance to this discussion.[25]) It is only when a person can take the ready-to-hand as ready-to-hand that the being of an object has significance. Moreover, taking the being of a being as a being is always within the referential totality of involvements that constitute the world and only people occupy such a totality of involvements. It is only in the referential totality of involvements that constitutes the world of people that an individual individuates herself and develops a for-the-sake-of which.

Despite the clear difference between Mead and Heidegger on this issue, it is not an insurmountable obstacle to a common understanding of the two. As I discussed in Chapter five, emergence occurs from within intrinsic constraints constituted by the irrevocable past of a process. These intrinsic constraints are the capacities from which novel modes of engaging with the world emerge. Clearly, projection, as described by Heidegger (1962, 1995), is not inherent in living agents. Rather than saying that projection, in the Heideggarian sense, is present in living agency, one may consider a primordial capacity for projection to be present in living agency. Specifically, the array of possible responses that arise in the attuning of a living agent may be considered as the intrinsic constraints from which a person's projecting of possibilities within a totality of involvements emerged. Mead (1925) stressed that the individuation of the self and the significance of the world are only possible with human individuals who take the

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[25] Heidegger (1995) openly evaded talking about primates. His discussion of animality was confined to bees and amoeba. Hauser (2002) has reviewed the literature on animal cognition. Current evidence raises doubts about the blanket assertion that animals cannot take something as something: viz, the assertion that there is no significance in an animal's agentive activity. Nonetheless, it is still clear that the understanding of significance in an animal's existence is very limited compared to that of a human.

perspective of others and engage in the totality of involvements constituted by the meaning of the acts of other individuals and other groups of individuals. For Mead, projection as presented by Heidegger is a unique quality of a person's engagement with the world, but one that emerged within the life process.

There is still another question of coherence between Mead and Heidegger on the projection of possibilities. As I just have noted, Heidegger wrote that disclosing the world "projects Dasein's Being ... upon its 'for-the-sake-of-which'" (Heidegger, 1962, p. 185). The for-the-sake-of-which has been discussed in Chapter two. In projecting possibilities of activity into that which is ready-to-hand, a person is assuming an "in-which" (p. 120) of involvements for that activity and a "towards-which" (p. 119); that is, a purpose for engaging in this activity. A person's being-in-the-world is inherent in the totality of involvements and the totality of involvements assumes there is a for-the-sake-of-which that belongs to the being of a person and "is essentially an issue" (p. 117) to that person. As Dreyfus (1991) emphasizes, the for-the-sake-of-which is neither a goal, nor a plan, but rather the sense of being that belongs to a person in engagement with others.

The for-the-sake-of-which is more easily illustrated than analyzed. If, for example, a young, impecunious university student goes to an expensive, high-class restaurant with a wealthy aunt, he may feel a little uneasy, as though he did not belong in that situation. The conduct of the student and the appearance of the student may be entirely within the bounds of the social object (to borrow a Meadian term). Nonetheless, the student may feel that his *moment to moment conduct* (as a Meadian would phrase it) or *everyday coping* (as Heidegger would phrase it) belongs to the involvements of studying, eating junk food, and partying that belong to the for-the-sake-of-which of being a poor student.

The restaurant is incompatible with that for-the-sake-of-which. Another example would be a young father who no longer feels that drinking with his friends until two in the morning accords with his for-the-sake-of-which of being a father (even if his wife does not object to his activity). A for-the-sake-of-which is bound within social practice. Few people in contemporary North America, for example, would have the for-the-sake-of-which of being a mule driver. And yet a for-the-sake-of-which belongs to the existence of an individual person and is occupied from within an individual perspectival engagement with the world. Some fathers drink until late in the evening; some students relish a fancy restaurant with wealthy relatives. All people, however, have this sense of the unique being of their being a person that belongs to personhood and with which they project into the possibilities of engaging within the world they occupy.

Mead did not explicitly discuss a for-the-sake-of-which with which people individuate their own being. However, Heidegger's thoughts on this topic are an interesting extension to Mead. It is notable that Dreyfus (1991) suggested a similarity between the for-the-sake-of-which of being a person and role taking, while qualifying this analogy by observing that unlike roles, for-the-sake-of-which is not an externally given, fixed mode of conduct. Dreyfus writes: "I pick up my most basic life-organizing self-interpretations by socialization, not by choosing them" (p. 96). "These ways of being lead one to certain organized activities such as being a teacher, nurse, victim, etc. Each such 'role' is an integrated set of practices" (p. 96).

If one adopts Dreyfus' interpretation of the for-the-sake-of-which, then Mead can be interpreted as explaining how the socialization and role taking of the for-the-sake-of-which emerge in ontogenesis. In much of Mead's work, he refers to "taking the role"

(e.g., 1925, p. 268) of another and "taking the attitude" (e.g., 1913, p. 377) of another almost interchangeably before using "taking the perspective" of another in a paper subsequently published in *The Philosophy of the Act* (1938, p. 182). As has been discussed in this thesis, an individual takes the perspective of others, not as a conscious or deliberate choice or simply from an external imposition of rules of conduct (although these certainly can have a determining influence), but rather as a readiness to respond to a situation in accord with the anticipated responses of others. The array of attitudes that arises in a moment of attuning is constituted by the attitudes of others and the individuated self. What Heidegger adds to this is that within the perspective of the individuated self is a sense of the being of that individuation; a sense of being that is embedded within the perspectives of the social world but is nonetheless unique to the individual. Heidegger's discussion of the for-the-sake-of-which as intrinsic to the constitution of a person's sense of being a person can be considered as existing within the perspectival engagement of an individual in a social world.

The "Me"

As mentioned above, it is the active disclosing of the world through which Dasein is brought before itself.

> Attunement and being attuned is in no way to be regarded as a knowledge of psychological states, but is rather a way of being borne out into the specific manifestness of beings as a whole in each case, and that means into the manifestness of Dasein as such, as it finds itself disposed in each case in the midst of this whole. (Heidegger, 1996, p. 283)

Just as the attuning of the "I" brings the "me" before itself, it is the attuning of Dasein that brings Dasein before itself. The "me" is the world disclosed and objectified in the being of a person as the person objectifies himself. As I have discussed throughout

this thesis, the objectified self is not an isolated cogito or a fixed internal computational mechanism. It is rather the "infolding" (Rose, 1996, p. 37) of our being-in-the-world that is absorbed through the attuned disclosing of an intentional being. The "me" to which we attune in reflective conduct arises out of a history of "being-with" (Heidegger, 1962, p. 155) others. Heidegger emphasizes that being with others is not for the most part being with others from which a person stands apart, but rather being with others along with whom the person exists and coordinates. "The world of Dasein is a *with-world*. Being-in is *being-with* others" (1962, p. 155).

There are approximate analogies to be made between the "me" and the objectification of Dasein. Neither are grounded in a moral order or objective reality other than the conduct of others. Both also involve an individuated absorption of social practice. This individuated absorption of social practice was explicitly stated by Mead and was also assumed by Heidegger even though he did not discuss a process of absorption through ontogenesis. Both Mead and Heidegger considered the self to which we attune to involve a prereflective absorption of the practices of society from which can arise an individuation and at times a readiness to take a stance that differentiates the self from others. Both Mead and Heidegger also recognized a determining influence of the practices of society over and above the influence of other individuals in the society. For Mead (1925, 1934), this was the generalized other. For Heidegger (1962), it was "the they" (p. 149).

A closer investigation of these issues, however, reveals not so much a difference in analysis or philosophy between the two scholars that can be compared and contrasted, but rather two very different projects. For Mead, the question was how we come to be people.

For Heidegger, the question was what a person is. Questions such as the authenticity of being, care, and significance underpinned Heidegger's entire thesis as laid out in *Being and Time* (1962). These were not issues that concerned Mead. His focus was the conduct rather than being of people. Moreover, to the extent that Mead wrote about the being of the "me" and the generalized other, the primary source is *Mind, Self, and Society* (1934) which is a second hand source and, as noted in Chapter three, may not perfectly reflect Mead's own analysis. At the same time, Heidegger did not seek an account of how we come to be with others, how we come to absorb this being-with into our own conduct, and how we come to attune to and objectify that being. A Meadian account may be construed as offering a microgenetic, ontogenetic, and phylogenetic account of how we come to be beings that occupy the perspectives of others in a perspectival world.

A Perspectival World

The first condition for a moment of human agency discussed in this thesis was that a person must be in a situation and a situation must be in a world. I now discuss the world of human agency in more depth. At the beginning of this thesis, I wrote that, for Mead (1932), the world is a world of events. No argument in this thesis has precluded this concept of world. And yet, as this thesis developed, it has been argued that perspectives are inherent in the world. A perspective, it has been contended, is not a subjective tint that an individual applies to the singular flow of events that constitutes the world. Rather, a perspective is an attuned, responsive, coherent source of activity that has a determining influence on events. A perspective is a determining influence on other perspectives.

The grounds for this claim have been developed throughout the thesis and only will be briefly reviewed here. A perspective is an array of attitudes that arises in a moment of attuning. Two primordial conditions for a living process are that a living process attunes and responds to the surrounding flow of events. A perspective is inherent in life process. Moreover, it has been argued that a life process is a self-maintaining process: a self-maintaining flow of events. The activity of a life process issues from a perspective. Events can originate from a perspective; from the activity of a living agent. Events are real and a perspective has real causal influence on an event.

The definition of world provided at the beginning of this thesis is insufficient. It implies a singular flow of events and a singular view of events flowing from the Big Bang to the present. I do not dispute that there may be a flow of events—perhaps an entirely determined flow of events—from the Big Bang to the present. However, as Mead also recognized (1926, 1932), an account of the world must also take account of the engagement of countless living agents that shifts and buffets this flow of events from a myriad of perspectives. In particular, an account of the world must take account of the deliberative, partially self-determining activity of human agents. We need to reconsider our concept of world to encompass not only a world of events but also the perspectival engagement of living beings within a world of events. For this, I first turn to Heidegger (1962, 1995) and an ontology of world that prima facie appears very different to that of Mead. I will then contend that a Heideggarian ontology of world is, in many respects, consistent with and can offer additional depth to that provided by Mead.

Heidegger's Concept of World: The World of Beings

In *Fundamental Concepts of Metaphysics* (1995), Heidegger wrote that "world means the manifestness of beings as such as a whole." (p. 301). I will briefly interpret Heidegger's discussion of this statement in accord with the detailed explanation that he provided for it. Then I will consider how this concept of world pertains to Mead's (1932, 1938) concept of world.

"[A]s a whole" pertains to the inter-relatedness of all beings. As people seek to make sense of the world, beings may be subdivided, categorized, and analyzed as particular beings, say as a chair, as a policeman, or as a corset. However, attuning to a particular being (Saida's notes, for example, and taking them as notes) presupposes an involvement with a world of notes, history courses, exams, and career development. Each categorization or particularization occurs within the totality of involvements that constitutes the world that is there.

Manifestness is the accessibility of beings. It is the attuning through which beings are engaged. With the attuned disclosing of the world, a person takes beings as beings and takes the world as "the manifestness of beings as such as a whole" (Heidegger, 1995, p. 301). For a being to be manifest is not an extant property of the being. Rather manifestness is in the disclosing of a being as a being by a being. Manifestness is both in the attuning of a person and the visibility of the being to which the person attunes. It is the attuning to something as something by a person.

As such refers to "the accessibility of beings as such rather than the accessibility of beings in themselves" (Heidegger, 1995, p. 280). *Beings in themselves* here refer to Kant's (1933) *things in themselves*. People do not engage with things in themselves, but

rather, they engage with beings that are manifest to them. To encounter a being as such is to encounter a being as it is manifest in the attuning of an individual. This concept has already been touched upon in our discussion of attuning and the arising of attitudes. A being is a being to the extent that an individual can attune to and respond to it. A person engages with a being as it exists to that person.

The world exists where people are immersed in a totality of involvements in which they attune to the being of things as things (and people as people). A birthday cake is a birthday cake because it is attuned to as a birthday cake within the totality of involvements that constitute the birthday girl's world. The world is interpreted by individuals (Heidegger, 1962, 1995; Mead, 1938). It is a person, through attuning to and coping with the world, that interprets.

Heidegger's interpretation of world coheres with that of Mead in many respects. For Mead (1938), the world is "simply there" (p. 45). It is constituted by peoples' perspectives accrued through their engagement in social conduct. When a person attunes to another person or an object, "the whole social environment would be more or less definitely organized as the background and sustaining whole" (Mead, 1903, p. 107) from which the individual attunes. As we have seen, to Mead (1938), a being is only manifest to the extent that a person can attune to it and interpret that being. Likewise Heidegger (1962, 1995) believed that interpreting is not a deliberative reflection on the meaning of objects, but rather it is intrinsic in the readiness to engage that arises in a moment of attuning.

Crucial to both Heidegger (1962, 1995) and Mead (1925, 1934) is the individuated stance from which interpreting occurs. For Heidegger (1962), individuation

is manifest in Dasein. The attuned disclosing of a person‘s own being indicates his individuation. A person has a certain “restraint” (Heidegger, 1995, p. 274) that facilitates the taking of something as something. A practical example of this is the child and the birthday cake (discussed in the previous chapter). There is a restraint from the impulsive grabbing of the sweetness that facilitates the taking of the birthday cake as a birthday cake. In taking the cake as a cake, the child is taking a stance that the cake is a cake. Heidegger offered neither an ontogenetic nor phylogenetic account of how people come to take a stance on beings as beings and attune to the being of their own being. Rather, he offered a rich account of the primordial conditions for that being. Mead (1925, 1932, 1934), as we have seen, offered an account of how individuation emerges through taking the perspective of others. Mead recognized not only the perspectival mode of being-in-the-world that is inherent in this individuation, but also that, in a moment of attuning, a person is taking a stance on a situation. The arrays of attitudes that arise are arrays of attitudes towards practical conduct. As a person stands before a horse, for example, she does not passively represent the horse, but is ready to respond by riding, petting, feeding, or withdrawing from it (Mead, 1934). The array of attitudes towards the horse constitutes an often prereflective stance—or perhaps conflicting stances—as to how the horse is interpreted as a horse.

According to Heidegger’s thesis in The *Fundamental Concepts of Metaphysics* (1995), animals are poor in world, but people are world-forming. Animals are poor in world because they exist and engage with a world that is open to them, but within which they are captivated by the disinhibiting rings of unmediated, impulsive responding. A bee does not take a flower as a flower and respond to it as such. It attunes to a particular color

or scent and responds by impulse. People, according to Heidegger, are world-forming because they comport themselves to the world with a stance of mediated interpretation. This is a stance that forms a world of involvements and occupies its totality. The world is formed by people's shared understanding of and engagement with that to which they attune.

Despite Heidegger's adoption of the term *world-forming* in *The Fundamental Concepts of Metaphysics* (1995), the concept of world that we have just discussed is not a world forged by people in accord with their own desires. People could not be people unless they were in a world of beings as beings. For Heidegger, the being of people and the being of the world are equiprimordial: each is a primordial condition upon which the other depends (Heidegger, 1962).

A Meadian theorist would add that if there were no people, there would still be a world. The world is a world of events. As I have already discussed in the previous chapter and shall elaborate shortly, the world is a world of events that have bifurcated and coalesced into a myriad of differing perspectives. If there were no people, there would still be other perspectives. There would still, for example, be the prereflective perspectives of multifarious organisms; perspectives that are constituted by their attuning and responding to the world. There would not, however, be a singular flow of events that is the world.

Individual's in the World: Perspectival Openings

Individuals engage with the world and influence the events of the world through a perspectival opening. I have argued that a perspectival opening is a determining influence on events and is also irreducible to particles of matter conforming with the laws of

physics. It needs to be stressed, once again, that human agency is embedded within a reality of perspectives—a reality constituted in its determining influence on events.

In this chapter, I have offered a discussion of the perspective occupied by a person. It has been repeated throughout this thesis that in a moment of attuning, attitudes arise. It has been contended that the attuned disclosing and the perspectives that arise in that moment are primordial conditions for a moment of human agency. A moment of human agency is necessarily perspectival. The attuning of the "I" is the attuned disclosing of the world. The arising of an array of attitudes is a readiness to purposively respond: a projecting into the world. As we have seen, attuned disclosing of the world is primordial for both Mead and Heidegger. Projecting into the world is also primordial. Our activity in the world thus issues from a perspective that arises in the concurrent and recursive attuned disclosing of and projecting into the world. Activity and the perspective from which the activity issues are equiprimordial.

Activity issues from a perspective. The world is a world of events that is not only engaged from within a perspective, but also shaped by the perspectival engagement of individuals and groups of individuals. A Meadian position does not simply deny a view of the world from nowhere. It denies an agentive cause from nowhere. Agentive activity issues from the arrays of attitudes that arise in engagement with others and in response to the activity of others. Activity is perspectival.

A Refutation of Reductive Physicalism: Causal Closure of the Physical Domain

I started from the direct experience of a moment of human agency. I described an act and how that act arose from attuned disclosing of the world and the perpectives shaped by engagement within the world and that in the world which is significant to a

person. As exemplified in my encounter with Saida's notes, it was a moment in which the uncertainty of my projected activity brought the moment into deliberative, reflective conduct. The enabling conditions for such a moment of agentic activity are an active attuning and an anticipatory readiness to engage with that to which we attune. This readiness is constituted by an array of attitudes—perspectives—formed through our past engagement with the world. Perspectives are acquired through engagement with things and other individuals over ontogenetic and phylogenetic time spans. I have argued, through an interpretation of Heidegger and Mead, that the purposive attuning of agents to the world led to an ever more complex actualization of capacities for relating to and conducting oneself within the world. The actualization of the capacity to attune to the perspectives of others led to a profound qualitative shift in agentive behaviour towards the emergent, reflective, and deliberative activity of the embodied human agent.

Can a reductive physicalist account for human agency and the enabling conditions for human agency discussed in this thesis? A reductive physicalist will need to answer affirmatively to the following questions. Can relations between humans and their bio-physical and sociocultural world be explained as necessary results of matter and energy or whatever else may be identified as physical basal constituents conforming with quantum mechanics, string theory, or whatever else may be identified as the laws of physics? Can human agency be completely understood without any reference to the ready-to-hand world we occupy? Is it possible to explain human agent's attuning and responding in terms of the basal physical constituents that both constitute and pass through our central nervous system?

I do not deny that as a human individual, I am a bio-chemical entity through which electro-chemical, bio-chemical, light, and sound waves flow. To the extent that words, music, love, and justice pass through this entity, they do so as physical quantities. If I scold my son, ask a neighbor for a favor, or write a thesis on the emergence of human agency, that same bio-physical entity is a determining influence on my acts. I do deny, however, that the perspectival opening through which I understand the world can be dissipated into a purposeless flow of physical events. The form of this bio-physical entity is shaped and shifted from moment to moment as a person is absorbed by and engages with a flow of events that extends beyond the physical confines of an embodied entity and also extends beyond the determining influence of particles of matter conforming with the laws of physics. The physical embodiment of a human being is a conduit through which social, deliberative, and bio-physical processes flow. If a reductive physicalist cannot account for the sociality of living agents and, moreover, if a reductive physicalist cannot account for the totality of involvements that constitute the perspectival opening into the world within which each person adopts his or her own for-the-sake-of-which, then the reductive physicalist has not accounted for a moment of human agency. Rather, it appears that reductive physicalists, Jaegwon Kim (1999, 2006), for instance, have presupposed the referential totality of our perspectival opening into the world. Kim asserts that a mental property is a function for engaging with the world. A function for engaging with the world presupposes that people attune to and project into the world. However, he seeks to reduce the perspectives that arise (the readiness to respond in particular ways), first to functional mental properties and then to the basal constituents of those properties. A reductive physicalist must also account for that to which we attune, its

significance to us, and the equiprimordial relation between each individual and the world he or she occupies.

I do not believe that an account of this kind is, or ever will be, forthcoming. I do not believe that a reductionist account is forthcoming for a single cell organism, let alone a person. Given the contemporary understanding of complexity theory and evolution, it is likely that a self-maintenant, far-from-equilibrium process around four billion years ago was caused by specific prior conditions. The further complexity that followed in the subsequent 4 billion years of events, whether in the form of life processes or physical processes, emerged in an inter-determinant flow of events in which each process maintained (or failed to maintain) its own equilibrium through continual attuning and responding to the activity of other processes.

I have contended that life processes are emergent processes embedded in perspectival engagement with the world. From this, I have argued that the advent of joint attention in humans was a particular adjustment in a life process. The physical change that facilitated joint attention may have been no greater change in the physical structure of a human individual than the physical change that brought about a dropped larynx. And yet, with joint attention, human faculties combined into a new mode of engaging with the world. A mode of engaging with the world emerged that facilitated our taking the attitude of another, sharing significant symbols, and attuning to the arising of our own attitudes with a refinement that only significant symbols could provide. People were able to interpret and engage with the world through a perspectival opening constituted not only by individual sensations and impulses, but also by the perspectives of other individuals and the perspective of the social group.

As just mentioned, I believe that I have refuted reductive physicalism. One may still ask, however, whether I have refuted physicalism. Have I refuted causal closure? Namely, have I refuted the thesis that no physical event has a cause outside the physical domain (Kim, 2002)? If a refutation of physicalism demands an omniscient or mysterian deity guiding our physical activity, then there is no desire on my part to refute that claim. Likewise, I make no argument that an idea such as justice or a social process such as a baseball game or democracy can exist independently of the physical events that issue from and impinge upon our perspectival engagement with the world. The question is whether the cause of that idea or process occurred within the physical domain alone. To answer this question, we need to clarify what is meant by the physical domain. For this, we turn to Jaegwon Kim (1998) who wrote:

> We therefore have three closure conditions on the physical domain: first, any entity aggregated out of physical entities is physical; second, any property that is formed as micro-based properties in terms of entities and properties in the physical domain is physical; third, any property defined as a second-order property over physical properties is physical. (pp. 114-115)

According to these conditions, any cause within the physical domain was caused by a basal physical entity or an entity that is aggregated out of basal physical entities. Moreover, there are only two kinds of properties that may have causal efficacy in the physical domain. The first is a first-order micro-based property that is a property (such as weight or height) constituted by an objects combined microconstituents. The second is a second-order property. By this Kim means a property realized by and identified with some combination of micro-based properties. Kim does not suggest that first-order and second-order be used in an "absolute sense" (1998, p. 19). Being jade, for example, is a first-order property of an amulet and a second order property combined from the first

order properties of being green and being a mineral. A functional property such as an intention, an idea, or a belief is a second-order property.[26]

Let us take a particular event, my picking up Saida's notes. According to Kim, this would have been a physical event with no causes outside the physical domain. As I picked up Saida's notes, I did so as an embodied being. I did so as an entity that is aggregated out of physical entities. Moreover, I did so as an entity with micro-based properties such as height, weight, and temperature. I will not dispute Kim's (1998) first two conditions for a physical event having a cause within the physical domain. This thesis, however, has been a refutation of the third condition, a condition which was elaborated by Kim (1999) as follows:

> [F]unctional properties, as second-order properties, do not bring new causal powers into the world: they do not have causal powers that go beyond the causal powers of their first-order realizers. According to the causal inheritance principle, the causal powers of an instance of a second-order property are identical with (or a subset of) the causal powers of the first-order realizer that is instantiated on that occasion. (pp. 115-116)

The deliberation and intention that caused me to pick up Saida's notes and browse through them were not simply realizations of a collection of micro-based first-order properties but rather causes that occurred within emergent life, social and deliberative processes. When we consider the causes of my picking up Saida's notes, the causes of this activity demand a physical mechanism. Physical mechanisms have been discussed in several places in this thesis. Light rays emanating from a particular coordinate in the classroom facilitated my attuning. The value I placed in Saida's notes may well have been facilitated by the dopamine activating particular neural networks. The attitudes that

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[26] Kim does consider other possible conditions, but the three stated above are the only three stated as definitional of the physical domain.

arose in that moment of attuning arose as a response within my bio-physical central nervous system. However, these physical mechanisms are mechanisms through which my perspectival engagement with the world continued. Saida's notes were not Saida's notes because they were caused to be Saida's notes by particles of matter and aggregates of particles of matter conforming with the laws of physics. Saida's notes were caused to be Saida's notes because Saida took the perspective of other individuals and groups of individuals and adjusted her perspective accordingly so that she could engage in a history course (a particular social object). She took the perspective of the teacher who was teaching the class and, in assuming this perspective, she adjusted her perspective so that she was ready to make notes about what the teacher was saying. I saw her notes. That is, I took her notes as notes within the totality of involvements that constituted my understanding of history classes, exams, careers, and my own for-the-sake-of-which. I took the perspective of Saida. I assumed her perspective towards history courses, teachers, making notes, and her own property. My readiness to act was not caused by light waves and physical particles. My readiness to act was caused by my attuning to and interpreting Saida's notes as Saida's notes within my own perspectival engagement with the world.

The causes of an individual's act coalesce within a flow of social and bio-physical processes and also within the reflective conduct that is a source of deliberate acts. In a moment of human agency, we are engaging with social processes and personal deliberation as well as bio-physical processes (Martin et al., 2003). The world remains a world of events, but it has been argued in this thesis that a flow of events (i.e., a process) is both determined in part by its relation to other processes and is also a determining

influence over its physical constituents. This is the tenet of downward causation (Campbell, 1974b). The social processes that shaped my understanding of Saida's notes as Saida's notes and the deliberative processes through which I coordinated my perspectives into the act of browsing Saida's notes were determining influences over my act.

Nonetheless, it should be noted that refuting the thesis of causal closure of the physical domain (i.e., no physical event has a cause outside the physical domain) is not a claim that physical causality (as understood by the laws of physics) does not hold, nor is it a denial that physical causality pertains to every moment of human agency. There are always physical causes and a physical chain of events that stand behind a particular agentive act. Causal closure, as specified by Kim (1999), however, is an insufficient explanation of human agency. The question is not whether a cause is physical. The question is whether the physicality of the cause is sufficient explanation for the effect. I shall elaborate first by analogy.

In North America, every judicial sentence is rendered by a person. If a person does not pronounce/issue/cause a judicial sentence, no judicial sentence is rendered. There is a humanity in the pronouncement of judicial sentences, by which I mean that no judicial sentence can be pronounced unless a human pronounces sentence.[27] Events are physical and there is physicality in the cause of events, by which I mean that no event

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[27] There may be a grey area where a traffic camera photos a traffic offender, the license plate is recognized by a computer, and the fine is mailed by an automatic mailing system. Any such sequence of events, however, is not relevant to the analogy. The sentence was nonetheless sanctioned by humans and issued to a human. The emphasis is that particular events have multiple kinds of causes and that these causes offer differing explanatory value.

occurs, whether it be a thought or a stock market crash, without energy and matter conforming with the laws of physics.,

However, only judges, a particular kind of person, can pronounce judicial sentences. We do not explain everything a judge does in terms of her being a judge. When a judge speaks, this is not caused by her being a judge. All kinds of persons speak. Her speaking is caused by her engaging as a person in a world of people. At the same time, the judge is a person, but being a person is insufficient explanation for the pronouncing of sentence. In seeking the causes of her pronouncing sentence, we seek the causes not only in her being a person, but also in her occupying a particular perspective, being a particular kind of person, and the social processes that influence this particular way of being a person.

The physicality of an event is an insufficient explanation for many kinds of events just as the humanity of the judge is insufficient explanation for the passing of sentence. Simply put, if someone asks why a judge passed sentence, the answer "because she is human" would be insufficient. If someone asks why the cell door slammed shut on a person, to answer in terms of energy, mass and the physical qualities of door hinges would be insufficient. No matter how extensive the explanation of matter and energy conforming with the laws of physics, it would not capture the ontology of that moment.

Different kinds of physical causes have different kinds of physical effects. If the kind of physical effect (say, an arm is broken) can be explained in terms of particles of matter conforming with the laws of physics (say, a falling boulder) then the physical cause is sufficient explanation. If the kind of physical effect, (say, a cell door slamming shut on a convict) cannot be explained solely in terms of particles of matter conforming

with the laws of physics, then we need to account for the particular kind of effect and the determining influences on that kind of effect. The flow of events that emerges within the physical domain is shaped by perspectives that emerge within, and have a determining influence on, the physical domain. Perspectives become the kind of causes we need to explain. As has been discussed, perspectives have a real determining influence. Different perspectives have different determining influences. Our judge is not just an analogy. She is a case in point. Our judge is occupying a particular perspective and her activity issues from that perspective. The judge is a physical being and a human individual. The cause of the judge pronouncing sentence involves both her physicality and her humanity because both of these are involved in her perspective. The best account of the judge passing sentence, however, requires the best account of the arrays of attitudes that constitute her perspective and the perspectives of those with whom she has engaged and those with whom she is currently engaging. The best account is an account of the judge as a judge engaging with the world.

This thesis has contended that many kinds of effects, say my browsing Saida's notes or a judge pronouncing sentence, cannot be explained and are not solely caused by matter conforming with the laws of physics. We also need to account for the life, social, and deliberative processes that shape our acts (Martin et al., 2003).

Importantly, we do not need to identify a moment in phylogenesis when physical causation broke down and deliberative or social causation prevailed. Physical causation did not break down; it was subsumed and shaped by relational, perspectival processes that are a determining influence on living agents' engagement with the world. There is a history of the emergence of human agency within life, social, and deliberative processes.

Unlike reductive physicalism, the account provided herein is not a history of gradual change within a fixed ontological framework. The history within which we explain the emergence of human agency is a history of new modes of activity and engagement that may entail the emergence of new determining influences such as sight, significant symbols, or instant electronic communication. As discussed in Chapter five, a new mode of engaging with the world emerges within the internal and external constraints on social and life processes. And yet the mode of engaging with the world that emerges can forge new perspectives, new concepts that describe a perspective, and new relational patterns of activity between differing perspectival openings onto the world. Emergence occurs within a history of particular events, particular relations, and particular situations. As with the theory of evolution, emergence offers a broad explanatory principle within which particular events and particular modes of engagement with the world can be investigated.

A Meadian interpretation of being human offers an account of how we have come to be the people that we are. It shows that we are not to be understood within fixed bio-physical mechanisms that account for a generic human being, but rather that each particular individual is a product of a partly shared and partly individuated history of engagement with the world and always occupies an individual perspectival opening into the world. A Meadian account, however, is still profoundly insufficient for achieving an understanding of what it is to be human. This is not because it lacks the necessary details of cognitive, emotional, social, or bio-physical processes. A Meadian account can be extended and enriched by a further analysis of the results of research in all of these domains. Rather, a Meadian account does not explain why Saida's notes mattered to me.

The care and significance that people find in their sense of being a person is perhaps the key issue in understanding a moment of human agency for it is only with an understanding of this that we can truly understand why a person acted as he or she did. A psychologist might say that I had high self-efficacy in the subject area of history, or that I had extrinsic motivation to study because of my parents' expectations, or that I had intrinsic motivation because I loved history. A neuroscientist might say that the history notes triggered a significant release of dopamine into my central nervous system. These are certainly useful descriptions, but they presuppose that as a person, my being a person matters to me, an insight elaborated usefully and powerfully by Heidegger.

How then should psychology understand and explore human agentive activity? Cognitive psychology and neuroscience have enjoyed many successes over the past half century as the investigation of the human mind has become a worldwide endeavour. The research has provided a body of knowledge about human cognition and behaviour that is of tremendous value. However, the interpretation of the results that have accrued needs to be undertaken within a framework that adequately comprehends the world as a biophysical and sociocultural world that encompasses the nature and temporality of human existence. Psychology is not simply the study of the human being as an entity with genetic, cognitive, and behavioural patterns. Rather, it is the study of being human, a history of the attuning and adjusting of an agentive being in a changing world. By attuning to the perspectives of others, the relationship of people to the world became an attunement to complex patterns of shared meanings that mediate their actions and desires. The psychology of human agency is a psychology of relationships among persons and the world, relationships strongly mediated by meanings in the world to which we are attuned.

As such, the nature of these relationships needs to be understood as much as the nature of the agent. Neither relationships among humans embedded within life and social processes nor the activity of human agents are entirely reducible to physical causes alone, for reasons indicated herein.

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Glossary

Array of attitudes The totality of possible responses to a *situation* (see glossary entry) that arise in a moment of attuning. See, also *attitude*, *perspective*.

Attitude An attitude is a readiness to respond that arises in a moment of *attuning* (see glossary entry). In attuning to a horse, one may be ready to respond by patting it and be ready to respond by feeding it. Each of these particular possible responses is an attitude. An attitude is a particular and momentary readiness to respond. See, also *array of attitudes*, *perspective.*

Attuning Individuals actively attune to their surroundings. They move their eyes, focus the lens, and adjust their bodies toward the environment so as to continue attuning as the environment changes. Attuning is the moment to moment active adjusting of an individual in response to the situation. It is a perceptive process and an adjusting of attention in one's surroundings.

Attuned disclosing Attuned disclosing is a combination of two of Heidegger's (1962) terms, namely *attunement* and *disclosing*. Heidegger refers to *disclosing* (see glossary entry) as the revealing of the world. Disclosing is analogous to the *attuning* (see glossary entry) of an individual to his or her surroundings. Heidegger also discussed the *attunement* that is inherent in disclosing the world. In Heideggerian terms, attunement or having a mood refers to the affective manner of disclosing. People do not disclose the world in a neutral mood-free state. We find ourselves in a mood and with this mood we disclose the world.

Causal closure of the physical domain "If a physical event has a cause that occurs at t, it has a physical cause occurring at t. A stronger version would go like this: No physical event has a cause outside the physical domain" (Kim, 2002, p. 642).

Conduct The purposeful action of a living being.

Coping Activity that emerges from a living agent's primordial condition (see glossary entry) of maintaining stability.

Deliberation A flow of reflective conduct in which the attuning of the "I" (see glossary entry) to the arising of attitudes calls out a subsequent array of attitudes. In attuning to one's own attitudes, deliberation begins. An array of attitudes can be a predominantly emotional readiness to respond or the initial stages of a motor response to a situation. Often, however, *significant symbols* (see glossary entry) arise in attitudes. With the attuning of the "I" to the significant symbols arising in attitudes, attitudes may arise in response to these attitudes that are also constituted by significant symbols. The stream of reflective conduct then becomes a dialogue in which arrays of attitudes that are replete with significant symbols become that to which the "I" is attuning and

	that which calls out an array of attitudes that is likewise replete with significant symbols. Deliberation has begun.
Disclosing	"Disclosing" (Heidegger, 1962, p. 105) is an individual's active revealing of the world that lays open the world to a person. In disclosing the world, the disclosedness of other beings in the world is discovered. The disclosedness of beings is the possibility for the being of other beings to be revealed. Without disclosing, nothing would be revealed. Without the disclosedness of beings, there would be nothing to be discovered.
Downward causation	Downward Causation is the concept that an emergent property can have a determining influence over its own constituent parts. "[T]he laws of the higher-level selective system have a determining influence over the distribution of lower-level events and substances. Description of an intermediate level phenomenon is not completed by describing its possibility and implementation in lower-level terms" (Campbell, 1974b, p. 180). An illustration of downward causation might be that a neural assembly has a determining influence over the organization of neurons or that a belief has a determining influence over the neural assembly.
Emergent properties	Properties that "arise out of the properties and relations characterizing simpler constituents" but that are "neither predictable from, nor reducible to, these lower-level characteristics" (Emmeche, Koppe, & Stjernefel, 2000, p. 14). An emergent property, therefore, is new. It is not simply a composite of underlying properties.
Equiprimordial	A primordial condition (see glossary entry) refers to enabling conditions for living agency on which all other conditions for living agency depend. If two conditions are equiprimordial then first, both conditions are conditions on which other conditions depend and, moreover, the two conditions also depend on each other.
Generalized other	The *perspective* (see glossary entry) that integrates the array of *social objects* (see glossary entry) and their constituent social acts with which an individual typically engages. As a perspective, the generalized other is an array of possible responses arising in an individual.
Human agency	"The deliberative, reflective activity of a human being in framing, choosing and executing his or her actions" (Martin, Sugarman, & Thompson, 2003, p. 82).
The "I"	As a function of an individual's engagement with the world, the "I" is the active, momentary, anticipatory attuning and coordinating with a world. The "I" is an attuning to a situation and also a coordinating of the attitudes that arise in a moment of attuning into overt conduct.

Life processes Life processes are functional processes through which life maintains itself on this planet. The term *life processes* refers to the extended temporal span over which living agents perpetuate over generations. See, also *living agency*.

Living agency A minimal analysis of living agency refers to the ability of an agent to complete a work cycle in which it expends energy in order to create energy for itself. A living agent can detect and attain energy from the environment and thus exhibits different behaviours depending upon the location of the energy source and the current phase of its energy cycle (Barham, 1996; Kauffman & Clayton, 2005). This thesis shall refer to a living agent as a particular organism that meets the specifications just delineated and refer to *life process* as the extended temporal span over which living agents perpetuate over generations.

The "me" The "me" is the *arrays of attitudes* (see glossary entry) that constitute a "repository of perspectival understandings" (Martin, 2006, p. 73). These perspectival understandings are accrued and shaped by an individual's active engagement with the world over time. The "me" constitutes a source from which an anticipatory readiness to engage with a situation in the fleeting present arises and also constitutes the understandings of an individuated self and existence to which an individual may attune Because the "me" can arise in reflective conduct as an objectified self to which the "I" attunes, the "me" includes both arrays of attitudes that constitute an individuated self and also arrays of attitudes that assume the response of others to the self. The "me," however, is not an object that only arises with an inward attuning of the "I." Rather, the "me" is the perspectival understanding from which all agentive activity occurs.

Meaning The meaning of an object or *situation* (see glossary entry) is the *array of attitudes* (see glossary entry) that arises in the moment of attuning to it. To the extent that a group of individuals are ready to respond in the same way to a situation, the meaning of the situation is collectively shared. To the extent that individuals are ready to respond differently, the meaning of a situation is individual.

Novelty Novelty, for Mead (1932), referred to new relations that emerge as individuals encounter each other and encounter the *social objects* (see glossary entry) within and through which they respond to each other.

Past (of an individual) One might interpret Mead as suggesting that the past is the readiness of an individual to engage with the present. Readiness is formed and constrained by previous engagement with the world (either through phylogenesis or through ontogenesis). *Perspectives* (see glossary entry) formed through past engagement become the array of attitudes that arise in the fleeting present.

Perspective In this thesis, a terminological distinction is made between *attitude* (see glossary entry) and perspective. The term attitude refers to a particular, momentary and prereflective readiness to respond in a moment of attuning and *array of attitudes* (see glossary entry) refers to the collection of attitudes that arise in a moment of attuning. A perspective is closely related to an array of attitudes. There is, however, a distinction of usage in this thesis between array of attitudes and perspective. An array of attitudes refers to the readiness to respond in a moment of attuning whereas perspective refers to the embeddedness of an array of attitudes within a history of situations over temporal spans of analysis extending through ontogenesis and beyond. There is an obvious recursivity here. An attitude arises within the perspective occupied by an individual. That is, the readiness to respond to a situation depends upon previous experiences and, in the case of people, conceptual integration of those experiences. At the same time, an individual's momentary and particular readiness to respond to the surroundings and other individuals in the surroundings is a determining feature of the perspective.

Physicalism The core of contemporary physicalism is the idea that all things that exist in this world are bits of matter and structures aggregated out of bits of matter, all behaving in accordance with laws of physics, and that any phenomenon of the world can be physically explained if it can be explained at all (Kim, 2005, p. 150).

Primordial conditions Enabling conditions for *living agency* (see glossary entry) on which all other conditions for living agency depend.

Process A series of occurrences or events in which one event has a determining influence over another. In a world of living organisms, many of these events are the acts of individual organisms and groups of organisms each to some extent determining the acts of others.

Projection According to Heidegger (1962, 1995), attuning is a person's projecting into what is possible and can be actual. A person's attuned disclosing of the world is necessarily purposive. Projection is an attuning to possibilities for acting in the world.

Real In this thesis, the term *real* refers to a real causal influence on events.

Reality of perspectives The reality of perspectives is an organism's engagement with the events of its environment through its sensitivity to contact and distal stimuli. The response of the organism to the events of its environment becomes an event to which other organisms respond. The events including the responses of individual organisms are real. They occurred in a shared environment. *Perspectives* (see glossary entry), however, whether they are the perspectives of a particular organism, group of organisms or ecosystem are modes of engaging with the world. *Living processes* (see glossary entry) attune and respond to events in accord with their own modes of activity. Because the events are real, the perspectival processes that caused the events are equally real.

Reductive physicalism The thesis that any phenomenon in the world can be explained by reducing it to its basal physical constituents conforming with the laws of physics.

Reflective conduct Mead (1934) refers to the phase of delay and selection in an individual's activity as reflective conduct and notes that it entails the ability to implicitly test out alternative completions of an act before selecting a single response for overt action.

Relation A relation exists between a living agent's readiness to respond (or lack of readiness) and that to which the living agent is attuning. There is nothing in the relationship that defies the laws of physics, but the laws of physics no longer suffice to define, explain, nor determine the relationship. The relationships that emerge are between the purposive activities of living agents and the world they occupy.

Significant symbol A significant symbol is a symbol to which the signifier and the interpretant respond in functionally identical ways. A significant symbol is a purposeful signal to others; a call on others to adjust their *perspective* (see glossary entry) in some way. A purposeful gesture of this kind is referred to by Mead (1934) as a significant symbol. Such a significant symbol can be any kind of gesture or sign. In social conduct, it is the vocal gesture–language–that is the most prevalent.

Situation Situations are characterized by the *relation* (see glossary entry) of an individual to the world (Mead, 1938). "The world, things, and the individual are what they are because of this relation" (p. 215). Two situations are identical to the extent that the properties of the things and the experience are identical and they differ to the extent that the properties differ. The properties are real (such as the red of a traffic light), but they do not exist in abstraction from the object. The identical character of a red traffic light in different settings enables an individual to act in a coherent manner across different situations. Objects are real and their properties are also real and cannot be abstracted. Crucial to

Mead, however, was that the relations between the individual, other things and the world that constitute a situation are also real. “These situations are the reality” (p. 215). The term “situation” here refers to the inter-related conditions and circumstances constituted by the world, things and individuals.

Social conduct The conduct of an individual is primarily in relation to and in engagement with other individuals (Mead, 1912). Such *conduct* (see glossary entry) is social conduct (Mead, 1910). It is embedded within a *social process* (see glossary entry) and “partially predetermines” (Mead, 1934, p. 159) the conduct of an individual.

Social object A social object is a social process whose function is recognizable by an individual. In engaging with a social object, an individual is ready to adopt a particular role (such as student in a lesson or food ordering at a restaurant). Social objects—the group processes within which individuals participate with particular roles—take many forms. The manifestations of social objects vary from rigid and sometimes mandatory processes such as attending church in 11th century Britain to comparatively fluid and voluntary processes such as dinner parties in 21st century North America

Social processes To the extent that Mead (1932) considered sociality to be a feature of all processes in the universe, all *life processes* (see glossary entry) are social processes. However, to be more in accord with common English usage and to emphasize the inter-relatedness of human individuals which is the underlying theme of this thesis, social processes refers to the life processes through which individuals inter-relate and respond to each other.

Sociality There are two aspects to sociality. First, any situation and objects within a situation are continually formed and shifted by the perspectives of the individuals involved and their consequent overt conduct in engaging with the situation (Mead, 1932). Second, sociality is the adjustment between the readiness to respond in a manner cohering with past experience and the anticipatory coordination with which the individual engages with the novelty of the fleeting present (Mead, 1932; Joas, 1997). The common feature to sociality is the occupation of two or more perspectives (Martin, 2007). The anticipatory attuning of the “I” brings the individual into the perspective of the novel present while the attitudes arising in that moment of attuning are formed in a perspective of past engagements.

Supervenience Kim’s (2002) supervenience thesis claims that “physical facts determine all the facts, and the physical properties of a thing determine all its properties” (p. 640), both its intrinsic properties and extrinsic relational properties.

World The world is a world of events and things that are not only engaged

with from a perspective but also shaped by the perspectival engagement of individuals and groups of individuals.