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# To Be Here, Then Gone: A Historical Review of Psychology's Influence on Determining Time of Death

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Running Head: PSYCH AND TIME OF DEATH

To Be Here, Then Gone:

A Historical Review of Psychology's Influence on Determining Time of Death

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### Abstract

Humanity is both captivated by and terrified of death. Whole organized systems in culture exist to deal with this momentous moment, but despite this, dying itself remains rather mysterious. Our definition of death is largely determined by our understanding of consciousness and the “self.” Great minds have for centuries tried to get a grasp on just what exactly happens in this turning point. The growing field of bioethics has emerged to wrestle with these questions, among others, and the dilemmas they present, drawing from not only ethics and general medicine but also our contemporary knowledge of consciousness and our understanding of the brain from psychology. This project is a conceptual review of literature examining consciousness and identity as related to determining time of death as prescribed by current bioethics. These topics are investigated in light of conceptual and historical issues in psychology, philosophy of science, and the work of authors including William James.

## To Be Here, then Gone:

### A Historical Review of Psychology's Influence on Determining Time of Death

#### **Introduction**

Humanity is both captivated by and terrified of death. Death and our thoughts about it can be found throughout our folk stories, our religious texts, our health and beauty knowledge, our dreams. Man is constantly grappling with his inevitable exit. Colloquially, it is the one great certainty, perhaps aside from taxes. Whole organized systems in culture have been erected to deal with this momentous moment, but despite this, dying itself remains somewhat mysterious to us. This moment is so intriguing likely because death is, in simple terms, the loss of what we now call consciousness, a dissipation of ourselves. There are many things which make up a human person, but the one which most would argue is crucial is consciousness. Our definition of the point of death has and continues to be largely determined by our understanding of consciousness and the "self."

Consciousness and what makes up the self are possibly two of the greatest human mysteries of them all. Many people have examined and pondered this moment of "passing on," as some put it, throughout history. Great minds ranging from early philosophers to modern men of medicine have tried to get a grasp on just what exactly happens in this turning point. With the recent advent of modern medicine, the growing field of bioethics has emerged to wrestle with these questions, among others, and the dilemmas they present.

Current bioethics informs many of the sources from which we build our present-day understandings of the point of death. Much of what bioethics conceptually draws from is not only philosophy but also our contemporary knowledge of consciousness and our modern medical

understanding of the brain. Much of this information lies in the field of psychology, and more specifically neuroscience. Why so much neuroscience? Neuroscience is currently one of our greatest sources of knowledge, as it is the newest, most cutting-edge paradigm within the field of psychology.

### **Philosophy of Science in Psychology**

In fact, psychology has gone through many phases, much as other fields, though perhaps more rapidly, being a relatively new field. Psychology has also shifted in relation to how we understand our knowledge and its accumulation. It is important to note here that this paper will look at knowledge and movements in thought primarily in the western world, as much of modern paradigms in psychology, medicine, and bioethics center around history of western civilization. Also, this project aims to provide a conceptual review of a large portion of history and thus necessarily may leave out some thinkers and movements in thought in the effort to capture the main theoretical shifts.

The most key example of how psychology has been influenced in this way is probably how our understanding of the universe has changed how we investigate. Many historical accounts hold that initially religion dictated most modes of inquiry: knowledge was found in books, through the word of prophets, from rituals and mystical intuit. Knowledge of our physical world evolved quite a bit from this point; for one example, the work of Isaac Newton initiated one very notable shift. The western world began to focus on the physical world as a “clockwork universe.” Everything was governed by specific hard-and-fast laws which could be utilized to understand anything one wanted to know. Everything could be explained absolutely. Science was the key to all knowing. Psychological thought, barely an infant at this point, also played by these rules. Later, another major paradigm shift occurred when Einstein introduced

his theory of relativity, accompanied by additional major theoretical insights presented by other physicists. Things again became a little more complicated, though now more advanced tools were being developed, and knowledge was growing faster than ever.

While death has always been with mortals, psychology, being so young, has not. In order to fully understand the field and the impact of our understanding of consciousness on determining time of death, one must investigate psychology's deep and long-running roots . . . primarily, these begin with philosophy.

### **Early Origins of the Field of Psychology**

The earliest traceable roots of Western psychological thought can be found in the writings of the Greek philosophers. Of these, Aristotle's *Nicomachean Ethics* likely has made one of the greatest impacts on the many schools of thought in psychology. This Greek thinker really set the ball rolling concerning viewing consciousness as a distinct entity from other living processes, which later thinkers ran with, (as this paper will soon discuss). As described primarily in book thirteen of *Nicomachean Ethics*, Aristotle demarcated three "souls" which composed the human entity (Aristotle, 2002, p. 109). These "souls" referred to integral functions of living creatures as opposed to today's common definition of soul or mind. Specifically, he allocated the "vegetative soul," responsible for absorbing nourishment and expressing growth, to all creatures (Aristotle, 2002, p. 109). The "irrational" or sensing soul he attributed to animals and humans, and the "rational soul" he understood to belong to humans alone (Aristotle, 2002, p. 110).

One can see immediately how this parallels our knowledge of the mind and brain in regards to the complexity of sensory perception in living things. This contemporary parallel can be found in many bailiwicks of modern psychology, including behaviorism, cognitive

psychology, and neuroscience. Today, we have a much more nuanced understanding of what, exactly, makes up living things, down to and beyond the molecular level. We see similarities and differences in nervous systems and behaviors in a deeper magnitude than that into which Aristotle delved. We also have different understandings about what consciousness and the self actually are.

Despite this, there is much conflict about the meaning of these two concepts. Still today, differing theories abound as to what actually sets our state or process of being and our perceptions apart from other living things and from the nonliving realm. Much of these issues arise from this initial central difference we see in us and our being compared to the rest of what comprises the universe. A central dilemma in the conceptualization of this difference was presented in the 1600's by a French thinker named René Descartes.

### **The Mind-body Problem and Cultural Context**

Famous for his arguments for existence, (insert poor "I think, therefore I am" joke here), Descartes' perhaps most valuable contribution to our understanding of consciousness and the self is, as he described, the "mind-body problem (Schultz & Schultz, 2008, p. 41). For thinkers like Descartes, this consisted of trying to understand how consciousness and the self could be the immaterial mind and yet still interact with the physical brain (Schultz & Schultz, 2008, p. 41). This "problem" is essentially only a problem to dualist thinkers, who will be discussed below. Nevertheless, the mind-body problem is something which most later schools of psychology have addressed in at least some form or another.

In modern times, we have mostly ceased to see the brain as consisting of distinct pieces which serve as bases for localized functions (Karenberg, 2009, p. 248). In times past, though, this view was pervasive. Beginning with the conceptualization of something like a "soul" in

religion, our understanding of the mind as being a separate entity from the body remained rigid for quite a while (Karenberg, 2009, p. 249). This is especially true of the Judeo-Christian notion of the soul and its relation to the corporeal body, though this conceptualization can be found in earlier eras, such as in ancient Greek thought (Kim, 2011, p. 31). There was *the mind*, and there was *the body*. Religious authorities demarcated everything neatly.

### **Dualism and René Descartes**

As we moved into the seventeenth century with Newton and Descartes, among others to change the general *modus operandi*, collective understanding of the mind in relation to the body changed, albeit slightly. People began seeking more distinct biological facts, and we turned to localization to explain away the complex mysteries of consciousness (Karenberg, 2009, p. 248). Especially with the presentation of Descartes' mind-body problem, this era saw an expansion of the dualist school of thought (Karenberg, 2009, p. 249).

Several theoretical camps claim territory within dualism. Dualism basically breaks down to center around how the divide between mind and body, (read: brain), exists and how the two interact with one another (Robinson, 2012, parts 2 and 3). There are two most notable stripes of the former: property dualism and substance dualism (Robinson, 2012, part 2). Both of these camps see the mind as a sort of thing which exists completely on its own due to its either having different "properties" from the brain or consisting of a different kind of "substance" (Robinson, 2012, part 2). Again, dualism also is broken down into groupings of how the mental and physical "worlds" interact, but these technicalities bear less heavily on the matter of determining death.

If one asks the average layman on the street of the Western world, many people informally—almost intuitively—understand there to be a definite *mind* and a definite *body*.



Many people would at first glance likely count themselves among dualists, perceiving a “natural” kind of causal influence of their mind on their body and their body on their mind, (Robinson, 2012, part 3). Perhaps this nebulous yet ubiquitous remnant of dualism is due to the predominance of Judeo-Christian thought. Perhaps it can be explained of the usual lag-time involved in the spread of paradigmatic thought; in the same vein, Einstein’s view of physics still has yet to fully latch on within common thought. Perhaps it is something inherent to the subjective experience of consciousness. Regardless, popular thought remains heavily entrenched in old theories of dualism. As for professional work, while references to Descartes’ work proliferate throughout large portions of bioethics writings and, to a somewhat lesser extent, those in psychology, today’s thinkers almost entirely reject his theories about the mind-body split (Chalmers, 2002, p. 2).

Dualism’s fall from favor occurred through numerous steady alterations in intellectual thought. Glacial changes in philosophical thought later led to quicker more minute changes in theoretical changes in scientific theory and eventually the psychological thought present today. As one progresses through the history of psychology as a field, one can see the modernization of contemporary thought increase steadily, similar to the acceleration of innovation seen throughout the past few centuries.

### **Movement in Theory to Localization**

Descartes himself died in the mid 1600’s (Schultz & Schultz, 2008, p. 40). For approximately the next century, thinkers continued to wrestle with the problem of the interaction between an immaterial mind and a material brain (Karenberg, 2009, p. 249). Descartes had initially posited that the soul causally influenced and was influenced by the body through the pineal gland (Kim, 2011, p. 48-9). He later took the position of remaining agnostic to the

interaction point and ultimately finding the question unnecessary to the understanding of the mind-body concept (Kim, 2011, p. 46-50). Despite this, theories about where this *magic point* existed emerged following his death, naming parts of the brain ranging from the striatum to the corpus callosum, to the choroid plexus, to the cerebellum, and beyond—though oddly enough mostly ignoring the cortex (Karenberg, 2009, p. 250).

### **Beyond Localization: Further Developments in the Philosophy of Science**

#### *Fall of the Clock-work Worldview*

Finally, in the mid 1700's, there was a push towards “equipotentiality,” or the understanding of the soul or mind as being present throughout the brain, (Karenberg, 2009, p. 251). Led initially by Immanuel Kant, this movement away from localization set the stage for later developments within psychology (Karenberg, 2009, p. 251-2).

In the late 1800's and early 20<sup>th</sup> century, when many of these developments were taking place, more revolutions in theoretical thought in physics began to appear. While Albert Einstein introduced his theory of relativity, among other things, another physicist, Niels Bohr, also contributed numerous thoughts which would later shape how we understand our place in the physical world (Honner, 1987, p. 2-6). While Bohr was not the only thinker around this time aiding in opening the doors of quantum physics, he is notable for his “idiosyncratic” way of approaching thought (Honner, 1987, p. 6). His intellectual explorations trod in physics as well as *metaphysics* (Honner, 1987, p. 9).

Bohr, Einstein, and other thinkers like Max Planck drastically changed the way we understood how humanity perceives knowledge about reality and our world (Rosenblum & Kuttner, 2006, p. 164). Indeed, Bohr's and Einstein's work on uncertainty, (p. 128), and Bohr's postulations on complementarity of the dual nature of physical matter, (p. 108), changed our very

notions of what matter *is* (Rosenblum & Kuttner, 2006). Bohr's complementarity in a nutshell is that while we know matter on an atomic level to have less object-observer differentiation, (as in quantum physics), we must use classical physics language, understanding matter as more discrete and absolute, in order to label and talk about physical phenomena, (Honner, 1987, p. 14).

Differing from constructivist views, (discussed later in this paper), Bohr does not assert "that our perception creates the reality, nor that the reality is not there if we are not perceiving it, nor that [he] is simply making the point that our knowledge-claims must be restricted to our experiences" (Honner, 1987, p. 54).

What Bohr did assert was that the previous positivist understanding of observing the physical world—that everything was discoverable in a singular, simple manner—was inadequate, (Honner, 1987, p. 56). One cannot just go observe matter or the laws of physics thoroughly, combine all observations together, and expect to have a clear picture of the world without some (traditionally) conflicting information. This was critical. Quantum thought ushered in an understanding of knowledge as relative. With this paradigmatic shift away from absolute reliability of our perceptions—even our empirical observations—what could we trust?

#### *Falsification as the Modus Operandi*

One man who confronted this problem in philosophy of science shortly after this was a fellow by the name of Karl Popper. Popper began wrestling with these problems of fallibility during the early 20<sup>th</sup> century (Levinson, 1982, p. 5). These philosophical disturbances cannot be attributed solely to shifts in physics; the philosopher David Hume also contributed to the acknowledgement of these problems (Magee, 1985, p. 15). (This paper will discuss Hume in more depth later.) Karl Popper is most notable for his ideas on verification and falsification, presenting a solution to this problem of knowing (Magee, 1985, p. 18).

Popper's views basically rejected the traditional route of inductive logic which science had previously been using to "prove" things (Magee, 1985, p. 18). He instead proposed that science operate on a premise of probability. If a hypothesis can be falsified, (by means of experience), then it should be rejected, but if not, then it is not "proven true" but instead just accepted as the best we have for the moment (Levinson, 1982, p. 23). In this manner, hypotheses and theories can only be *supported* not verified. This greatly changed how knowledge was obtained and, along with other paradigm-shifting thought, helped open the door for modern psychology.

This move towards critical falsifiability in empiricism revolutionized how we did science, and psychology soon emerged from within all this. From there, psychological research took off into the form which we see today. As the developments of the 1900's in physics and philosophy of science occurred and revolutionized the dominant thought, finally psychology incrementally became a discrete field. Perhaps the clearest demarcation of the beginning of psychology was the rise of the labs of Wilhelm Wundt, widely known as "the father of modern psychology."

### **The Semi-official Birth of "Psychology"**

While the exact budding point of psychology as a field unto itself is somewhat contested, most psychologists agree that Wilhelm Wundt's founding of the first psychological research laboratory in 1879 marks the launch of psychology into the realm of experimental science (Hothersall, 2004, p. 115). Wundt was born in and carried out much of his research and teaching career in Germany (Hothersall, 2004, p. 118-125). His experimental research drew on experimental techniques found in the study of physiology at the time and focused on "sensory processes, perception, consciousness, attention, will, affect, and time and space perception" (Mandler, 2007, p. 56-57). Wundt emphasized relatively rigorous methods of study and

importantly demarcated the “observed object” from the person doing the observing (Mandler, 2007, p. 60). Wundt is also less well known for his *Völkerpsychologie*, a work which focused much more on the historical and anthropological approach to psychology; this he made efforts to separate from his more empirical lab work, although he later regarded it as more important than empirical study (Rieber & Robinson, 2001, p. 86).

Wundt’s theory spread to the U.S. This statement is actually a warping of what really ensued. Two psychologists—most notably Edward Titchener—emigrated to the U.S. and spread what *they* considered to be Wundt’s teachings (Hothersall, 2004, p. 139). The actual theory which they taught, for a long time considered in line with Wundt’s work, in recent years has been realized as being almost contradictory (Hothersall, 2004, p. 139). This new flow and evolution in psychological theory emphasized trained introspection as a tool for uncovering the workings of the mind (Hothersall, 2004, p.145). Titchener made it his business to observe and isolate the “elements” which make up the structure of the mind (Hothersall, 2004, p. 145). This method of introspection and observation later came to be known as *structuralism*, in contrasting with the more holistic *functionalism* of thinkers like John Dewey, a earlier movement similar to the Gestalt movement (Hothersall, 2004, p. 364). Before functionalism arose, though, we must consider another important ingredient in the theoretical mix of this time period. While Wundt and others are spreading their precise, empirical means of gathering information about the human mind, we also see a residual off-shoot of localization blossoming simultaneously. Beginning in philosophical thought before Wundt’s time, and continuing to flourish up through the backlash of functionalism, a new method of understanding conscious thought later called *Associationism* emerged thanks to this shift towards introspection.

### **Introspection at Large in Psychology**

This “new” idea was hardly new. Viewing conscious experience as consisting of an ongoing flow of associated ideas can be traced all the way back to Aristotle; however, David Hume and John Locke seem to be noted as the first modern thinkers to write on the topic (Hothersall, 2004, p. 65; Mandler & Mandler, 1964, p. 8; Sahakian, 1975, p. 45; Warren, 1921, p. 3). Associationism gained popularity largely beginning with Hume in the eighteenth century and progressing through structuralism, functionalism, and onwards into the 1930’s (Hothersall, 2004, pp. 65-76). This school of *thought*, (pardon the pun), grew and flourished synchronously with these movements as well as experimental psychology and the beginnings of Gestalt psychology and behaviorism (Mandler & Mandler, 1964, pp. 4-5).

This transition, which Wundt and his colleagues also helped initiate, marked an important step in psychological thought. While psychology had not entirely abandoned localization circa the Victorian and Edwardian eras, this was a critical changing period which made discernible the emergence of psychology as the distinct field of study which it became. Philosophers such as Thomas Hobbes, Hume, and Locke paved the way for later thinkers like James Mill and Alexander Bain, as well as Hermann Ebbinghaus, many of whom balance precariously between the fields of psychology and philosophy, both of which would claim them as their own (Mandler & Mandler, 1964). Traces of these movements later influenced schools of thought, particularly behaviorism, (Hothersall, 2004, p. 79), as well as psychoanalytic thought (Mandler & Mandler, 1964, p. 5). Echoes of associationist views of thought can be heard today in much of cognitive psychology. The significance of this movement lies most in the transition from seeing consciousness and the self as static: a mind, a brain . . . to seeing it as a fluid phenomenon. In the words of Hothersall, “[w]hereas the early empiricists had analyzed the mind into component

parts, Hume and Hartley began the search for laws that would describe how these parts come to connect or blend together in *associations*” (2004, p. 65).

Continuing in the vein of trying to pick apart and locate distinct “parts” of conscious experience via introspection, the eminent Sigmund Freud built on these other schools of thought. Initially, Freud was most interested in physiology (Modell, A. H., 2012, p. 475). Freud more than dabbled in studying the brain as well as sensory and perceptive processes in his *Project for a Scientific Psychology* (Garcia, E. E., 1992, p. 56). Some have argued that he predicted the discovery of the synapse the way it is argued that Gregor Mendel predicted the detection of DNA (Modell, A. H., 2012, p. 475). While Freud did aspire at times to see consciousness from a monist, reductive materialistic perspective, he ultimately rejected his project and began his renowned work creating psychoanalytic theory due to remaining puzzled by the dualistic mind-body problem, (Garcia, E. E., 1992, p. 61). While Freud abandoned his early work, this preliminary research was still significant in that it, along with findings by other thinkers around this time, helped nudge psychological thought towards what it would later become.

These initial endeavors in physiology, combined with the social climate in which Freud resided, dramatically influenced his later theoretical contributions. One of the largest influences on both Freud and other thinkers of the time was the work of Charles Darwin (Fine, R., 1990, p. 4). Freud also drew on knowledge of associationism to understand how desires were formed and to better conceptualize of human thought (Fine, R., 1990, p. 28). Using his previous knowledge as well as his experience with case studies and self-analysis, he eventually embarked on trying to understand the human mind, which he so ardently understood as being a separate creature from the brain (Fine, R., 1990, pp. 24-25). Perhaps the greatest development Freud had was his theory about the “unconscious” because this not only brought about a better understanding of

how memory works but also ushered in a new way of thinking about the self (Lohrey, A., 1997, p. 123).

Drawing on Darwin's theories about the importance of reproduction in species survival, Freud focused heavily on hidden drives and desires within the mind—these he deemed the *id*—which he postulated were the source of impetus for much of human behavior (Ornstein, R., 1991, p. 71). He also saw the *superego* as a unconscious drive, but this time one which is more morally aware (Fine, R., 1990, pp. 61-67). Freud thought of the conscious mind, something which one could argue closely resembles the modern conceptualization of the self, as the *ego*, a mediator of these two unconscious forces (Fine, R., 1990, pp. 61-67). Freud's view of the unconscious was that we could only access it through “dreaming or neurosis” (Lohrey, A., 1997, p. 123). These views impacted how future thinkers have come to understand the mind, the self, as well as parts of conscious experience such as thought, memory, drives, and emotions.

Much of the work of Sigmund Freud's near predecessors, that of Freud himself, and that of those following in his footsteps such as Alfred Adler and Carl Jung, relied immensely on examination of subjective experience. Perhaps because of this popularity of what some would call sloppy or vague methodology, there was an intense backlash in the field of psychology by more strictly empirical researchers. Enter behaviorism.

### **Embracing Empiricism, Functionalism, and Pragmatism**

Behaviorism flourished alongside the psychoanalytic and, to a lesser extent, gestalt movements. With the beginnings of an experimental psychology created by thinkers such as Wundt, other minds of this time, such as B. F. Skinner, John B. Watson, Ivan Pavlov, and many more, diverged from more introspective movements to create their own school of thought (O'Donnell, 1985, p. 16). Early psychologists of this time made a significant push away from



subjective experience and a move towards empirically determining, this time, the clockwork of the body's nervous system and the brain (Schultz & Schultz, 2008, p. 329).

Behaviorism seriously altered the way psychology approached its understanding of the human "mind." Emphasis was shifted from viewing consciousness as something which could be observed pooling in the brain to understanding experience in terms of functions: behaviors, responses, and thoughts as reactionary processes triggered by stimuli (Zuriff, 1985, p. 271). From the linking of thoughts as in associationism, we see the blossoming of classical and operant conditioning with the association of stimuli and transference of responses (Schultz & Schultz, 2008, p. 270). Much of this research grew out of previous Darwinian notions that humans and animals learn behaviors in an effort to adapt and survive (Schultz & Schultz, 2008, p. 270). This was contradictory, and later in the twentieth century in sharp contrast, to the earlier theories of Social Darwinism and the self as something determined entirely by immutable genetic factors (Schultz & Schultz, 2008, p. 160). At this time, we also see the effects of Newton's influence and positivism in full swing and empiricism spreading profusely through the realm of academia (O' Donnell, 1985, p. 60).

While behaviorism emphasized learning, as opposed to views of previous movements which stressed genetic determinism, it is important to note here that behaviorism was not dualistic in its stance on the self and consciousness. Disparate from positivist research of years before, behaviorists tended to lean heavily towards a reductive materialist view of existence (O'Donnell, 1985, p. 61). If particular components of study, like mental events or elements, could not be functionally defined, they were considered meaningless to our understanding of human consciousness (Zuriff, 1985, p. 271).

This is not entirely true of all breeds of behaviorism, though. From the 1940's onward, many flavors of behaviorism, so to speak, emerged; among these, *molecular behaviorism* and *molar behaviorism* placed different emphasis on what was deemed worthy of study (Hothersall, 2004, p. 487). In general, reductive materialism tends to find haven in both schools of thought, but it is more ardently embraced by molecular behaviorists (Hothersall, 2004, p. 490). Those thinkers leaning toward a molecular study of behavior dwell more strictly on attempting to parse behavior down to its elements, similar to how structuralists attempted to pare the mind down to mental elements (Hothersall, 2004, p. 490). Molar behaviorists see this as unfortunately and unnecessarily eliminative because topics such as purpose and cognition are ignored (Hothersall, 2004, p. 490).

While we see the Spartan reductive materialism of molecular behaviorism going on to influence modern neuroscience, and to a large degree our current medical definitions of death, within the atmosphere bred by molar behaviorism and movements in thought similar to it we also see the existence of different perspectives. These other thinkers and movements attempted to address—in a variety of ways—the, as O'Donnell puts it, “hornet’s nest of philosophical hypotheses about the nature of mind and about man’s place in nature and society” which was beaten open by the movements in psychological thought just addressed (1985, p. 60). One such thinker of this time was William James.

### **William James and a New Look at Consciousness and the Self**

William James lived from 1842-1910, thus he was around for much of psychology's founding as well as the early growth of behaviorism. He made grand contributions to psychology as a field, our understanding of the self and consciousness, as well as the field of philosophy, just to mention his main areas of focus. While many classic behaviorists such as B.

F. Skinner are popularly mentioned in this era of psychological thought, James tends to be less mentioned. Perhaps it is James' knack for broad conceptual thought or his eclecticism which pushes him out of the limelight in common discourse. Regardless, James' ability to balance between the fields of psychology and philosophy, among others, is if anything a strength, as his exploration of consciousness and the self is one of the most thorough of his time.

Among James' contributions to our understanding of consciousness and the self is the influence of his work on later functionalist thought (Schultz & Schultz, 2008, p. 181). John Dewey, a large proponent of functionalism, held James in great esteem (Schultz & Schultz, 2008, p. 181). James also helped to establish within psychological and behaviorist thought an emphasis on pragmatism (Zuriff, 1985, p. 257). Indeed, James stressed that the "workableness" of pieces of knowledge was at its core what distinguished them as true (James, 1909/1975, p. 6). Pragmatism not only went on to shape behaviorism and later psychological thought, but it has also had great ramifications on our modern scientific thought in areas like neuroscience and medicine—critical to bioethics.

James is also notable for his contributions to our understanding of the interactions our behavior and our bodies' physiology has with our emotions. Essentially, James proposed that we have a physiological response to a stimuli, then we experience and emotion (Hothersall, 2004, p. 341). His theory was contradictory to previous thought and marked a new era in the understanding of "mental events" such as emotion. It was an important step, not only because it changed our way of understanding our bodies' response to stimuli, but also because it is a notable attempt to grapple with the "mental stuff" of emotions from a behavioristic, physiological perspective.

James initially trained in medicine, and while he ultimately found his calling in the study of psychology and philosophy, his background gave him a unique perspective (Hothersall, 2004, p. 335). Among his colleagues, William James especially marks the changing of the focus on the mental as influencing the physical to seeing the mental as at the mercy of or as strictly caused by the physical. This is exhibited in his work on emotion theory, but it is also showcased in his understanding of consciousness.

James' writing on consciousness has a clear associationist influence. He elaborates on the notion of consciousness as having distinctive attributes. Perhaps most notably, James emphasizes in his writing in 1890 that in conscious experience:

- 1) Every thought tends to be part of a personal consciousness.
- 2) Within each personal consciousness thought is always changing.
- 3) Within each personal consciousness thought is sensibly continuous.
- 4) It always appears to deal with objects independent of itself.
- 5) It is interested in some parts of these objects to the exclusion of others, and welcomes or rejects - *chooses* from among them, in a word - all the while. (p. 225)

William James' conceptualization of consciousness and the self is very different from the structuralist understandings which arose during his time. He saw their attempts to isolate static parts of consciousness as both futile and useless. We see here a small similarity to the later move of molar behaviorism away from segregating of behaviors in time, which we see in molecular behaviorism. Both of these psychological understandings drastically impacted how we see our conscious existence.

A final important thing to note about James is his work investigating free will. While free will definitely can contribute to one's understanding of life and death and the decisions one might make in determining how to deal with medical situations of a bioethical nature, it is outside the scope of this paper. Nonetheless, James had quite a lot to say on this topic (1890, ch. XXVI), and it is important to keep this in mind in looking at later movements in psychology. His work on free will was very timely, as a few decades later, the world found itself in two massive wars, the latter of which brought up many questions about morality, free will, and the self, which spurred the rise of a couple of new movements in psychology: existential and humanistic psychology.

### **Existential and Humanistic Psychology: A Return to Subjectivity**

While behaviorism was experiencing its "golden age," others in the field of psychology after World War II were not content with this manner of psychological investigation (DeCarvalho, 1991, p. 1). This new movement was carried onwards by psychologists such as Gordon Allport, Abraham H. Maslow, and Rollo May, notably among others (Shaffer, 1978, pp. 3 & 17). Initially, we saw existential psychology rise from the churning events of the early twentieth century, with thinkers alongside Allport and others such as Holocaust survivor Victor Frankl (Greening, 1971, p. 98). This movement was and to some extent continues to be rather loose, and the division between emphases of humanistic versus existential versus phenomenological psychology as labels tend to vary depending on the literature.

Nevertheless, a congruent and vibrant movement can be defined. This movement emphasizes grappling with existential anxiety by placing value on "awareness of being," taking personal responsibility, and finding meaning as an individual (May, 1969, p. 3-7). Weight is placed on seeing the human experience as a whole thing which cannot be broken into segments,

categories, or labeled types; in this regard, the movement reflects the gestalt movement. In general, we see a strong withdrawal from, as Rollo May puts it, “the dehumanizing dangers in our tendency in modern science to make man over into the image of the machine, into the image of the techniques by which we study him,” (1969, p. 4).

This movement was largely a critical response to both psychoanalysis and empirical scientific thought, the latter manifested in the rise of modern medicine and technologies. These thinkers further emphasized behaviorism’s pull away from determinism and nativism, yet still held fast to context as an element of understanding the self. This movement re-embraced introspection, but this time with a self-conscious acknowledgement of subjective awareness. Interestingly enough, we see trickles of movements in psychological thought as made by folks like William James in much of existential and humanistic psychology, even though the two pools of thought vary quite a bit in other ways.

For instance, existential psychology conceives of consciousness and the self very much in a “temporal” as opposed to “spatial” sense (Schneider, Bugental, & Pierson, 2001, p. 95). On the other hand, this movement sees consciousness and the self in a very different manner, in some ways. Because value is placed on experience as unique to each individual within a given time and context, and consciousness and the self are seen as being formed from this experience, humanistic and existential psychology can be seen to be somewhat constructivist because they see these things as varying with each person (Schneider, Bugental, & Pierson, 2001, p. 83-84). Taking this along with the notion of the self as more of a phenomenal thing—perhaps instead a “tendency” for growth, actualization, and other goals of being a human—existential and humanistic psychology presents a radically different view of conscious experience which is

seriously incongruent with much of experimental psychology (Schneider, Bugental, & Pierson, 2001, p. 82-83)

### **Cognition Takes the Stage in a Return to Study of the Mind**

Despite this shift, humanistic and experimental psychology have remained in the background of the psychological paradigm of the western world for generally the past half a century. This can partially be attributed to the rise of a few relatively recent movements which grew out of and were significantly influenced by other earlier movements like associationism, empirical psychology, and behaviorism, among others. Cognitive psychology can be roughly defined as the study of the mind and how it processes information (Coxon, 2012, p. 2).

While this branch of psychology can be characterized by the many movements before it which attempted to understand the stuff of the “mental” world, cognitive psychology has been slightly different. This is due to the fact that cognitive psychology, while having roots perhaps noticeably even during WWII, initially got its start following the “cognitive revolution” of the late 1950’s and early 60’s (Coxon, 2012, p. 4). While this label sounds very dramatic, the changes in thought during this period were actually rather gradual and due to a large number of small developments (Goldstein, 2005, p. 13).

Before the cognitive revolution, many new technologies were already cropping up, but Alan Turing’s “Turing machine” really set the stage for future developments in both computing and psychology (Mandler, 2007, p. 167). Around this time, Noam Chomsky made a nativist critique of behaviorist explanations of language learning, arguing that an understanding of these processes must be thought of “in terms of the internal representation” of rules which the mind might follow to accomplish a complex task such as language learning (Greenwood, 2009, p. 506). This opened the door to further changes in method. It also balanced views of the self

somewhat back in the direction of nativism, contrary to previous moves by behaviorism and existential and humanistic psychology. The work of Jean Piaget and Donald E. Broadbent on cognition also pushed the movement forward from behaviorism's examination of learning into a new analysis of the processes behind that learning and other behaviors (Mandler, 2007, p. 174).

The eventual introduction of computers vastly altered our understanding of not only perception, but also consciousness and the self. Cognitive psychology has continued along the empirical paths laid by behaviorism, but while being distinct from behaviorism due to its embracing of studying the mind, cognitive psychology still tends to treat it as a sort of "black box," using static, often step-wise models to describe cognition and other mental processes (Goldstein, 2008, p. 20). This is in large part because cognitive psychology has been shaped by developments in computer science.

One such instance is the conceptualization of the mind given to us by cognitive psychology; in recent decades, the mind has come to be seen as a sort of "software" running on the "hardware" of the brain (Goldstein, 2005, p. 12-14). In light of this, there has been some rehashing, so to speak, of previous dualistic views. This said, cognitive psychology is more flexible due to its abstract understanding of mental phenomena, and thus it allows a little more room for a variety of more materialist perspectives.

In this same vein, cognitive psychology can be seen as only one branch of the larger cognitive science, an interdisciplinary effort to study the mind, including thinkers from "computer science, linguistics . . . anthropology . . . and philosophy," among others (Goldstein, 2005, p. 19). Especially the advent of artificial intelligence in computer science has created new questions for us concerning what it is to have a "self" and consciousness and what these concepts really mean. This is significant because it has continued the work of behaviorism in expanding



our understandings of consciousness in regards to humans in context of the rest of the living and non-living world as well as various “states of consciousness.” We no longer see consciousness as something entirely discrete and homogenous; this is especially important for our understanding of experiences like developmental disorders, dementia, comas, and other things such as *determining time of death*.

In general, cognitive psychology has revealed much to us about the phenomena which occur in processes such as attention, learning, memory, and others which were before shrouded. Nevertheless, cognitive psychology in its purest form still left the mind—and much of the brain—unopened, so to speak. With accelerating development in technology and medicine, coupled with researchers’ eternal thirst for knowledge, yet another small shift occurred in psychological thought: neuroscience.

### **Down to the Nitty-gritty: Medicine Meets Psychology**

Neuroscience is really getting into the intellectual territory of the field of biology and modern medicine, but it is related to psychology as well. All of these schools of thought have established themselves through a complex winding and intertwining history. Indeed, just as cognitive psychology is very interdisciplinary, neuroscience and its kin can be described as even more so. Neuroscience at large is the study of the nervous system, more physiology than psychology . . . and yet, the two are inextricably linked (Banich, 2004, p. 4). There are a number of “in-between” schools of thought as well, such as: cognitive neuroscience, behavioral neuroscience, biological psychology, neurolinguistics, and an enormous collection of labels reflecting copious numbers of sub-disciplines and areas of study. Cognitive neuroscience is notably the study of the relationship between what we in modern times understand to be the *mind*

and what we know to be the *brain* (Gazzaniga, 2009, p. 1221). Unfortunately, both of these definitions are perhaps more hotly debated now than they have been in centuries.

Neuroscience's beginnings for that matter are also debated, but it is agreed upon that from at least the mid-1970's, this wide school of thought has been emerging and growing (Banich, 2004, p. 4). In many ways, neuroscience and its offshoots emerged parallel to modern bioethics. Neuroscience developed alongside computer technology and studies. Advancements such as PET, fMRI, and other scans, Transcranial Magnetic Stimulation, and other medical and technological innovations have significantly shaped the field. The influence of the body on what some understand as the "mind" is becoming more and more relevant to psychologists. There is not a better illustration of this than cognitive neuroscience, which employs macro as well as microscopic levels of study to achieve its many ends.

While neuroscience appears to be a return to localization, it is not nearly to such an extent that previous generations took their study. Also, although cognitive neuroscience's aims include researching the mind, ultimately this field of inquiry has bred what might be the most aggressive form of reductive materialism yet, (perhaps with the exception of radical behaviorism). It seems that cognitive neuroscience is attempting to understand *how* consciousness is, not *what* it is (Gazzaniga, 2009, pg. 1201). The current majority paradigm recognizes the "mind" as phenomenal but ultimately a "ghost" emergent from the "machine" of our brain and physical being. A physicalist worldview seems to be the mainstream.

### **An End for Concrete Understandings of the Self, Consciousness, and the Mind?**

While psychology research seems currently rife with reductive and eliminative materialism, non-metaphorical or not entirely abstract notions of the self, consciousness, and the mind are still floating around in contemporary discourse. Dualists are definitely a minority, but

this viewpoint and everything adjacent and in between is being re-evaluated. This current controversy is largely a product of recent shifts and developments in psychology, neuroscience, and medicine. This debate is also stirred up by a few other schools of thought which influence modern psychology.

For example, some thinkers in cognitive neuroscience argue that conscious experience and what it is *to be something* cannot be reduced to physical things; these folks hold study of these mental experiences or “qualia” as the next frontier in psychology. The influence of philosophy of mind can be found with them. There are also other various stripes of perspectives, such as those following in the footsteps of gestalt thought and movements in physics who see the mind as merely an *emergent property* of the complex processes of the physical brain, much as we see the traditional physics properties of macro objects to be emergent from micro objects’ interactions governed by quantum physics (Rosenblum & Kuttner, 2006, p. 176). A final observed perspective which has old roots in philosophy and has recently bled into the current debate in psychology is neutral monism. This view claims that the mental and the physical are just two different manifestations of the same substance—one which isn’t mental or physical (Stubenberg, 2010, part 1). This perspective further blurs our demarcations of where consciousness and self begin and end (Chalmers, 2002, p.267).

In their own ways, these people are challenging the dominant materialistic viewpoint. At the present time, it seems we’re no closer to definitively understanding consciousness and the self. Regardless of this, in the midst of the current intellectual storm and in the context of the state of modern medicine, this is an exciting and fascinating opportunity to examine questions like determining time of death.

## **Bioethics**

So what *does* all of this have to do with determining time of death or bioethics, for that matter? To answer this, it is first important to understand a bit about how bioethics came about as a field. Ultimately, bioethical decision-making has been around practically as long as humanity has existed and ethical decisions have been made in medical contexts (Baker & McCullough, 2009, p. 22). In this way, medicine and ethics have roughly co-evolved throughout history. In particular, recent historical developments in ethics as well as the occurrence of modern medicine have been significantly game-changing.

One of the most impactful events in the past century in terms of inciting the differentiation of bioethics into a separate field is the Nuremberg Trials following WWII (Rothman, 1991/2003, p. 30). As the relationship between medical workers and patients became more and more distant, as well as less individual-focused, issues of consent and patient abuse came to a head in Nazi medical experimentation (Rothman, 1991/2003, p. 30). The Nuremberg War Crimes Tribunal brought medical ethics into the limelight of the international stage in the late 1940's (Baker & McCullough, 1991/2003, p. 76). While many other instances of paradigmatic ethical overhaul to medical institutions exist in recent history, these changes coupled with rapidly changing patient-doctor relationships marked a major shift in bioethical thought and practices.

The other major cathartic element which pushed bioethics into solidifying was developments in technology and medicine. Perhaps the most momentous of these changes was kidney dialysis, kidney transplant, and heart transplant (Rothman, 1991/2003, p. 149 & 160). Much of this happened following the 1960's (Rothman, 1991/2003, p. 148). These new technologies have allowed us to alter patterns of human life and death in ways previous centuries

would have thought impossible. With these changes, the public and medical professionals alike were drawn into a more vigorous dialogue to determine just where the boundaries lay in medical ethics. Thus, new modern medical situations regarding death arose which required ethical decision-making, and bioethics emerged as a field.

### **Making the Call: Our Current Definitions of Death**

How is death actually defined today? Today's defining of death seems to be primarily crafted by the medical community, with the pronouncement of death being an action only made by doctors (Rothman, 1991/2003, p. 162). This is contrary to centuries past, when determining death was a somewhat more mysterious and irregular phenomenon (Quigley, 1996). With the introduction of modern medicine, the reductive materialistic movements in psychological and medical thought, and especially changes in law as dictated by the Harvard Brain Death Committee meeting of 1968, this is no longer the case (Rothman, 1991/2003, p. 161-163). Death is now entirely physical, (at least in legal and to some degree social terms in the U.S.), as of the President's Commission of 1981 (Lizza, 2006, p. 9). Following 1994, almost all states adopted the Uniform Determination of Death Act, which determined one to be dead if the person ". . . has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brainstem . . ." (Lizza, 2006, p. 9). As for specifically determining brain death, the criteria of death are usually pretty straightforward as defined by the Harvard Brain Death Committee: "two flat EEG readings from a patient not on barbiturates who displayed no reflex activity," (Rothman, 1991/2003, p. 161). This inclusion of neurological death was made due to an acknowledged need to address the element of "consciousness" in brain dead patient cases (Youngner, Arnold, & Schapiro, 1999, p. 12). Life and death are pretty clearly demarcated. Death is pretty simple. Right?

Not quite. This is where things are in general still pretty “fuzzy.” Even looking at death from a hard reductive materialistic view, some argue that due to continued “organic integration” within the body after formal declarations of death, consciousness and the self may remain (Lizza, 2006, p. 19). This brings up all kinds of possibly problematic instances of various biological scenarios in which death is questionable, such as in the case of persons on artificial life support with “residual neurohormonal regulation” who meet accepted criteria for brain death (Youngner, Arnold, & Schapiro, 1999, p. 73). Definitions of brain death also differ based on region of the world, so “a person declared dead in one country may not be considered dead in another” (Quigley, 1996, p. 5). In addition to these concerns, these definitions obviously also only apply in the U.S., although there are many areas of the world with similar standards. Cultural context and understandings are important to our conceptualization of death. In fact, in New Jersey, and to some degree New York, special legal allowances are made so that doctors may take into account the wishes of family (Lizza, 2006, p. 9). This is done because some Native Americans and Orthodox Jews reject current definitions of death based on their religious views (Lizza, 2006, p. 9). People of different perspectives concerning consciousness and the self will approach death differently.

### **Conclusions and Future Implications**

When it comes down to it, religious, ideological, philosophical, or more broadly, world-view beliefs about how we conceptualize death—ultimately how we conceptualize consciousness and the self—determine how we as individuals and as a society dictate what and when death is. To a larger degree than it seems to be recognized, psychology and its history have had an integral influence on how we form these understandings. If one is a strict materialist, one is going to see these things much differently than perhaps an old-school dualist, or a neutral monist, or a

pragmatic behaviorist who sees consciousness as phenomenal, or someone who sees consciousness as an emergent phenomenon from actions within the brain, et cetera. There are clearly cultural definitions which are used pragmatically within our society and agreed upon by the majority, but even within this majority, there can be many nuances as to how we actually understand time of death, our experiences, and ourselves.

Historically, our practices of determining time of death have changed as our notions of consciousness and the self have. It is inevitable that these things will continue to change as we continue to learn about the human experience and ourselves in a biological as well as ideological sense. What better field of inquiry than psychology, then, to inform our understandings of the world. This task is not to be taken on lightly, though. The real-world ramifications of determining time of death seem to be growing more intense, if anything, as our knowledge and technology advance. Our understandings of consciousness and the self influence how we decide if we should remove patients from life support to harvest their organs to save the lives of other patients . . . how we decide if we should deliver babies by Caesarean section while their brain-dead mother's heart is kept beating artificially and her lungs supported by a respirator . . . how we decide when we feel our loved ones are gone as their personalities are changed dramatically by the neurological deterioration of dementia . . . and how we decide to handle countless other similar life situations.

In the future, it may be important to more closely scrutinize not only how the public understands time of death, consciousness, and the self, but also how our current medical and psychological systems understand these things, in both academic and applied settings. It will also be crucial to examine these things in light of cultural context and in relation to not only cultural lay-practices but also economic, legal, and political contexts on a local and international

scale. Future research might also look at how individuals' understandings of these things vary from a professional stance to a personal perspective of grappling with death situations in their own lives. In the end, perhaps the most important aspect of our understanding of consciousness, the self, and death is that with which we come to terms with and cope with our own mortality. To do this, we must well understand life and who we are. Psychology plays an integral role in this process.



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