5-2011

The Mind in Motion

Shayan A. Gates
University of Rhode Island, shayan_gates@mail.uri.edu

Introduction

Intrigue has nearly always surrounded the human mind. Like most scientific disciplines, cognitive science can be traced back to a few philosophical musings posed by a few curious thinkers throughout time until, eventually, it finally developed and branched off into a subject of its own. In this project, we will look at some of those ideas and conjoin them with what we currently understand about the mind.

The association between the mind and the brain is hardly a novel idea. Theories abound as to the extent of their relationship, whether or not they can be considered one and the same. But, given the nature of the subject, validation has not been so easy to come by. Even now, during this age of technological advancement and discovery, there are still many features of the brain that have yet to be resolved.

But considerable progress has certainly been made, particularly in the last 20 years. The rate at which we seem to uncover something new about the brain also seems to be rapidly increasing and, for this reason, many consider the present day to be the "Golden Age" of neuroscience.

This topic is obviously very broad, so, for purposes of this project, I decided to limit the discussion to four major themes: Experience, Memory, Emotion, and the Imagination. How each of these areas play a part in our daily cognition will be explored

through both the arts and sciences, the idea being that if we cast our nets over a broad array of disciplines - all of which are geared towards unraveling the same questions - a better understanding could perhaps be achieved and appreciated.

For each section, an excerpt written by a prominent figure will be analyzed, and its merits argued, in light of scientific evidence that supports or coincides in some way with the theory at hand. Ideas by the following philosophers can be found in the following pages: Henry David Thoreau, Ralph Waldo Emerson, William James, John Dewey, David Hume, John Locke, Martin Heidegger, Merleau-Ponty, Renee Descartes and Plato (American Transcendentalists, Pragmatists, British Empiricists, Phenomenologists, and Rationalists).

A fifth section will conclude the project, written in the spirit of Pragmatism which aims to sum up the overall value or takeaway from everything that was previously discussed. Ultimately, the goal is to create an interesting, yet palatable, discussion about the way our minds tend to function, and how knowing these things about ourselves can work to our benefit.

I

"Perhaps we need only to know how his shores trend
and his adjacent country or circumstances, to infer his depth
and concealed bottom."
~ Thoreau[1]

Much has been said about experience. Since antiquity, the indelible, lingering effects of what we do and what we go through have been recognized as appreciable factors that contribute towards our character. The vast spectrum of individuality and the uniqueness between persons is largely contingent upon the context of the lives we have lead and, in many ways, this defines us as who we are. So, naturally, our experiences and our histories are weighed heavily within various disciplines and professions (e.g. psychology, sociology, law enforcement, human resources, etc.).

Henry David Thoreau was an American Transcendentalist who, in his seminal work, *Walden,* famously conjured up his own version of Nature vs. Nurture. In the above quotation, he is applying some of the correlations he noticed between Walden Pond and its surroundings to the way certain qualities are born into his fellow man. In short, he is wondering whether or not the effects of *nurture* - of the experiences garnered within one's environment - are such that they may be viewed as reliable indicators of a person's character; of who they become.

What Thoreau noticed about Walden Pond (and most any body of water) was how

---

[1] Thoreau, Henry David. Walden. Boston, MA: Beacon Press. 2004. (p.273)

the underlying topography tends to coincide with the shores and the gradations of the surrounding terrain. Each meets the other rather seamlessly as though the pond wished to conform to its environment, or its environment coaxed it into doing so. In any event, what Thoreau wished to convey here was the veritable connection and relationship between the two, and this certainly leads us to consider the affairs surrounding our own development.

It goes without saying that our environment plays a significant role in what we experience on a day-to-day basis. We observe the things around us, we formulate opinions about them, we react to them, and we are forever changed in the process. Many of these relationships (and the extent of their impact) come down to happenstance and the frequency with which we find ourselves in proximity with those sources. Frequency, as we will see, is not without considerable import and ramification.

Force of habit is one such byproduct of frequency, and it applies to both interpretation and response (the mental and the physical). We typically think of physical tendencies when we consider a person's habits - how they move, their workplace routines, nervous ticks and compunctions, athletic technique. But habit also pertains to proclivities involving the mind - tendencies of thought and impulse which routinely surface and, at times, manifest in a physical habit. Some would argue that the difference between the two is a moot point in the sense that the mind and the body are interconnected and each undergoes a dynamic, physiological response during times of stimulation and use. This is the interpretation proposed by materialists and physicalists who essentially equate the mind with the brain (although, presently, there still remain a few theorists who hold firm to the Cartesian, dualistic view that the mind and body are

distinct entities).[1] Regardless of the chosen model, habits are qualities that will inevitably become engrained in our persona in one way or another.

In *The Principles of Psychology*, William James discusses the brain's ability to enhance and reform its neural pathways. This is often carried out in order to facilitate a repeated action: *"A path traversed by a nerve-current might be expected to follow the law of most of the paths we know, and to be scooped out and made more permeable than before, and this ought to be repeated with each new passage of the current. Whatever obstructions may have kept it at first from being a path should then, little by little, and more and more, be swept out of the way, until at last it might become a natural drainage-channel."*[2] This adaptive, accommodating feature of the brain is what he refers to as "plasticity," which can be loosely translated as "flexibility," "pliancy," or "adjustability."

Conceived over a hundred years ago, the idea of neuroplasticity would gain broad acceptance in the late 1950's when a Mexican immigrant by the name of Pedro Bach-y-Rita suffered a stroke. He was 65-years-old at the time and he was treated by one of his two sons (both of whom became doctors). Initially, the stroke had left an entire side of his body paralyzed, and his ability to speak was also severely compromised. He experienced a near-full recovery, however, upon extensive rehabilitation, and he actually became an avid mountain-climber in his final years. The medical breakthrough was noticed once Pedro had finally passed away. His other son conducted the autopsy and noticed, much to his surprise, that the damage to his father's brainstem had remained since the stroke was incurred years ago. His brain managed to reorganize itself somehow

---

[1] Wilson, A.R. & Keil, F.C. The MIT Encyclopedia of the Cognitive Sciences. Cambridge, MA: MIT. 1999 (p.524-525).

[2] Menand, Louis. Pragmatism: A Reader. New York: Random House Inc. First Edition. 1997. (p.62).

in order to circumvent the irreparable damage incurred by his brain stem, and this all but confirmed the theory behind neuroplasticity. Today, neurologists consider the rehabilitation process as tantamount to surgery itself when it comes to recovering from brain trauma, attributable to the brain's unique capacity to rewire itself and transfer responsibilities to healthy neurons that neighbor the damaged region.[3]

The cerebral cortex, which is responsible for such essentials as consciousness, attention, language and memory, is constantly under modification by experience, expectation, and behavioral context. Associated with James' concept of plasticity is the ongoing process in which our brains undergo modifications of circuits, either by altering the strength of a given synaptic input or by axonal sprouting and synaptogenesis (the formation of new bridges between neurons).[4] In so many words, through continued employment, a habit will germinate, sprout, and become increasingly reinforced as the channels of neuronal communication are networked and enhanced. It is not dissimilar to an electrical current being dialed up with each new pass, or having additional wires set alongside others in order to augment their efforts. Donald O. Hebb, who became a highly influential figure in the discipline of psychology (and who also helped clear the way for the cognitive revolution), carried out research that helped to develop what would become an important, underlying rule of James' plasticity - *neurons that fire together wire together.* [5]

Everyday life is flush with examples where we find ourselves performing certain tasks so handily that virtually no attention is devoted to the process. We absentmindedly

---

[3] Neuman, Johanna. "A Fantastic Journey of Discovery." U.S. News & World Report: Secrets of Your Brain. Special Edition, 2011. (p.5-9).

[4] Wilson, A.R. & Keil, F.C. The MIT Encyclopedia of the Cognitive Sciences. Cambridge, MA: MIT. 1999 (p.598-601).

brush our teeth, button our shirts, tie our shoes and drive our cars, simply because these habits have been forged so deeply in our neuronal circuitry over the years that they have become "second-nature." Many people define mastery this way, and James was no different: *"Continuity of training is the great means of making the nervous system act infallibly right…"* [6]

Athletes and musicians are both very well-acquainted with the concept of muscle memory. The most accomplished of these practitioners know better than to rest on the laurels of mere talent alone, and they understand the power of repetition. The memories formed during motor learning are not consciously accessible, which is perhaps why we tend to perform at our best once we've achieved a mastery or comfort level that is unencumbered by thought. These skills are expressed in the context of motor performance itself - in the process of *doing*. It is subconscious recollection of gradually learned skills that is called "procedural" or "implicit" memory. Interestingly enough, this also happens to accompany the formation of mental habits.[7]

To get closer to Thoreau's point, we should perhaps focus on these mental habits in particular, mainly because we often times judge a person's character by their general outlooks, their overall attitude, and by their resolve under various circumstances. These features are largely predicated upon the occurrences the individual has experienced hitherto, all of which contribute to the conditioning process. The conditioning process is important because, among other things, it allows us to learn about the most critical contingencies in our environment - what events predict danger, what signs reliably

---

[5] Ibid…(p.599).
[6] Menand, Louis….(p.65).
[7] Wilson, A.R. & Keil, F.C. The MIT Encyclopedia of the Cognitive Sciences. Cambridge, MA: MIT. 1999 (p.571-572).

indicate the availability of food, how to take effective action to avoid predators or capture prey, and so on.[8] With that in mind, what the environment does with *us* (rather than what we do within it) - in the very moment that it is perceived - is perhaps closer to what Thoreau had in mind when he appraised the influential nature of our surroundings.

We absorb and internalize information at an astounding rate. The bulk of this processing is performed subconsciously by the "emotional brain" which sifts through the deluge of signals that are constantly assaulting our senses. The "rational," conscious brain can only handle 7 ± 2 pieces of data at any given moment.[9] The blessing of the prefrontal cortex, which is where conscious thought is conducted, is that it affords us this ability to toy with information actively and with intent. Comparatively speaking, however, the subconscious, emotional brain is far more advanced when it comes to raw capacity and processing power.

Thoreau's reverence towards our surroundings is anything but overreaching. The connection and intercourse between our senses and the world is so dynamic that we could not possibly interpret the sheer volume of input at a conscious level. That is not to say the bulk of this input goes to waste. Our reactions to external stimuli are often performed in seemingly automatic fashion - e.g. a skunk crosses our path, we startle and stagger back - and these are cases of our emotional brain evaluating the situation far quicker than we otherwise would or could. As one might expect, the situation is evaluated based on the information that our surroundings have indicated to us in the past, rapidly summoned from the archives of our experiences.

---

[8] Ibid….(p.182-183)

[9] Miller, George. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our

Just as important as the environment when it comes to shaping our experiences is the manner in which our faculties perceive that environment. Continental Aesthetics is an area of philosophy that has been heavily concerned with reemphasizing our own part in the observational process.

Maurice Merleau-Ponty was a phenomenologist who was generally dissatisfied with any theory that detached the conscious subject from the outside world. René Descartes, for example, had set a boundary between the mind and reality when he described our apprehension of its objects as a reconstruction into mere thought or representation. As a result of this premise, it becomes in our best interest to extricate the mind's involvement from our conceptualizations of the world - to be objective, in a word. To Merleau-Ponty, however, this meant that *"the body is no longer the means of vision and touch, but [rather] their depository."*[10] He preferred to include the seeing subject as a part of the equation and to focus on how the world appears to us in the very moment that it strikes our eyes.[11] The ideals of science, which purport to explain the logistics of light and sound and the various contributors to our perceptions, are entirely bereft of the actual lived experience of the individual. Merleau-Ponty argued that such theoretical understandings are predicated upon a more fundamental, pre-theoretical stage of perception that science has since bypassed and given up on in favor of a working model.[12]

Capacity for Processing Information." *Psychological Review 63* (1956). (p.81-97)

[10] Johnson, Galen A. The Merleau-Ponty Aesthetics Reader: Philosophy & Painting. Northwestern University Press. Evanston: Ill. 1993. (p.138).

[11] http://plato.stanford.edu/entries/merleau-ponty/#3

[12] Johnson, Galen A. The Merleau-Ponty Aesthetics Reader: Philosophy & Painting. Northwestern University Press. Evanston: Ill. 1993. (p.121-122).

Art, "*especially painting, draws upon this fabric of brute meaning which operationalism would prefer to ignore. Art, and only art, does so in full innocence."*[13] This quote, taken from his essay *Eye and Mind,* captures the underlying basis of Merleau-Ponty's aesthetic, which is a precise moment preceding cognition. His use of the word "brute" might seem excessively particular, but it is appropriately used for it signifies the quality of our perceptions before they've had a chance to be refined by the mind (the stage Descartes prefers to stress). This is where his affinity for painting comes into play because this medium gives *"visible existence to what profane vision believes to be invisible."*[14] That is to say, painting displays certain features of existence which the mind might reflexively gloss over or deem dispensable.

Exactly what is meant by this can, at once, be elucidated and confirmed by our current understanding of the brain. "Top-down processing" is a term that is used to describe the way cortical brain layers project downward and influence (corrupt, some might say) our actual sensations. When light strikes the eye, for instance, it is translated into an electrical code that is subsequently split and transmitted to two very distinct areas of the brain - the visual cortex and the prefrontal cortex. The prefrontal cortex is the "top" of the brain which is the region involved in conscious thought. The signal to this region is faster, but it is also weaker. We see everything "twice" simply because our visual cortex needs the help (it requires an additional fifty milliseconds to process the signal it receives). As a consequence, however, once our prefrontal cortex receives the

---

[13] Ibid….(p.123).

[14] Ibid….(p.127).

faster-but-vaguer image, it immediately begins deciding what the "bottom" brain has seen, effectively doctoring the sensory data. Form is imposed onto the image of the bottom brain even though it is the more precise and meticulously analyzed image of the two.[15] Efficiency, as it turns out, is more important than accuracy.

With that in mind, Merleau-Ponty's aesthetic is overtly, and understandably, concerned with the following: How does the world appear to us before we have already decided what it is we're looking at?

To begin with, he undermines the notion that there ought to be a demarcation between our bodies and our surroundings: *"…my body is a thing among things; it is one of them. It is caught in the fabric of the world, and its cohesion is that of a thing. But because it moves itself and sees, it holds things in a circle around itself. Things are an annex of prolongation of itself; they are incrusted in its flesh, they are part of its full definition;"*[16] The body is intimately connected with the world, extending into it through the reaches of its sense and through the sensations it receives. The painter, he argues, is more apt to harness this fundamental connection, and their paintings illustrate the very occurrence of this interplay. The painter's aim is to create a work that avoids the "reconstruction" that our imagination insist on carrying out, bearing in mind *"resemblance [to be] the result of perception, not its basis. Thus, the mental image, the visualization which renders present to us what is absent, is a fortiori nothing like a breakthrough to the heart of Being. It too is a thought relying upon bodily indices - this*

---

[15] Lehrer, Jonah. Proust Was a Neuroscientist. First Mariner Books. Boston, New York. 2007. (p.104-108).

[16] Johnson, Galen A. The Merleau-Ponty Aesthetics Reader: Philosophy & Painting. Northwestern

time insufficient ones - which are made to say more than they mean." [17]

Paul Cézanne was a painter of unique talents who ushered in a new era of artistic expression during the late 19th and early 20th centuries. What would become the founding, and signature, work of the Postimpressionist movement was initially criticized as being crude, imprecise and incomplete representations of what was depicted on the canvas. In short, Cezanne's work was labeled as a sharp and unnecessary deviation from traditional viewpoints on how a still-life or a landscape ought to be approached.

What was eventually understood, though, was that Cezanne was involving the perceiving subject - the observer - into his paintings through a strategic and brilliantly concerted effort. His technique is often characterized by blotted colors, staccato brushstrokes and gaps in color which lend his work an "unfinished" quality, and, moreover, there is a discernible lack of boundaries and line. At the same time, however, there is also no mistaking what the viewer is looking at once they peer at the canvas - an apple, a mountain, a woman. Ultimately - and painstakingly - Cezanne gives the observer just enough information to decipher his paintings and rescue the picture from the edge of obscurity. *"The eye is not enough,"* Cezanne once declared. *"One needs to think as well."* [18]

In a way, this incorporates the views of both Descartes and Merleau-Ponty into a single, unified, artistic mission. Despite their ontological differences, both of these

---

University Press. Evanston: Ill. 1993. (p.125).

[17] Ibid….(p.132)

[18] Lehrer, Jonah. Proust Was a Neuroscientist. First Mariner Books. Boston, New York. 2007. (p.96-98).

thinkers derive their philosophies from the same puzzling aspect of the human condition - the perceptual process. Where they part ways can be attributed to the distinct stages in that process from which they chose to proceed. Both acknowledged and appreciated the subjective component involved when we interpret the world around us. For Descartes, his lack of faith in our body's faculties provided a metaphysical barrier that prompted him to dissociate "the world at large [from the] little private world" of the mind.[19]Alternately, Merleau-Ponty paid more reverence to the body's relationship with the world, ultimately choosing to remain there: *"A Cartesian can believe that the existing world is not visible, that the only light is of the mind, and that all vision takes place in God. A painter cannot agree that our openness to the world is illusory or indirect, that what we see is not the world itself, or that the mind has to do only with its thoughts or another mind. He accepts, with all its difficulties, the myth of the windows of the soul;"* [20] Neither philosophy is necessarily "more correct," per se, than the other. They are simply born from different attitudes regarding the body's capacities.

In the title case study of his book *The Man Who Mistook His Wife for a Hat*, Oliver Sacks describes the visual deficiencies of a patient whom he refers to as "Dr.P." Dr. P enjoyed the life of a distinguished performance musician. As a teacher, he was well-liked and respected, his tutelage was regularly sought after. He was intelligent, articulate and humorous, but he would often recognize his students only by the sounds of their voices. Often, he failed to recognize them at all, and, after enough persuasion

---

[19] Johnson, Galen A. The Merleau-Ponty Aesthetics Reader: Philosophy & Painting. Northwestern University Press. Evanston: Ill. 1993. (p.132).

[20] Ibid….(p.146).

following enough embarrassing incidents, he finally obliged the many recommendations to visit a doctor.

Upon thorough examination, it was clear that Dr. P struggled to recognize anything other than simple shapes and abstract forms. Inanimate objects, for instance, were somewhat easier for him to identify since their shape was mainly constant - a ball, a spatula, a cup, etc. But even so, he would have to work at these things and study them as he would a puzzle, describing "Platonic forms" and other features they possessed as clues might help unravel the mystery of their identity. When it came to more complex figures, however, like an image that, to even the slightest degree, was dynamic in nature (such as a human face) he was utterly lost.[21]

Dr.P's eyes were fine. They absorbed photons perfectly and his photoreceptors were all intact. But the problem arose once the light traveled beyond his retina because his brain was not able to interpret his sensations properly. What he saw of the world was essentially a muddled commotion of fragments to the extent where even a photograph seemed abstract. The data his eyes gathered could not be pieced together into a unified concept. He could not even recognize his own reflection in the mirror. And, of course, he once mistook his wife for a hat.

Earlier, we had discussed the visual process as a conjoined effort between the prefrontal cortex and the visual cortex. A veritable sacrifice in accuracy was shown, but the reason for this sacrifice was not explored in depth. But when we consider the case of

---

[21] Sacks, Oliver. The Man Who Mistook His Wife for a Hat. First Touchstone Edition. New York: NY. 1998. (p.8-21).

Dr. P, the practical aspect for this sacrifice is made eminently clear. While *perfect* appropriation of an image might not be achievable with the incorporation of top-down processing, we are instead afforded a *really good* alternative that allows us to function much more efficiently on a moment-to-moment, day-to-day basis. From an evolutionary standpoint, it is not difficult to see how it might behoove us to make quick, relatively dependable judgments about something rather than to contemplate extensively over it for long periods of time until [potentially devastating] confirmation has been received.

Dr. P's circumstances encapsulate, to an extreme, what our vision would entail if it were not "encumbered" or "corrupted" by the mind. He was simply unable to conceptualize what his senses relayed to his brain; unable to congeal what he saw into an actual, conceivable *thing*. In a way, what he saw of the world was perhaps more "actual" than what our own minds are convinced of seeing. He viewed the world with the brute vision that Merleau-Ponty proposed to be the foundation of our experiences which, as it turns out, truly exists.[22]

[22] Lehrer, Jonah. Proust Was a Neuroscientist. First Mariner Books. Boston, New York. 2007. (p.108-109).

II

"Our dealing with sensible objects is
a constant exercise in the necessary lessons of difference, of likeness,
of order, of being and seeming, of progressive arrangement;
of ascent from particular to general;
~Emerson [1]

The value in being able to retain one's experiences - in having a memory - can not be overstated. To be able to apply what we've learned in the past to new situations as they arise, whether consciously or not, is an enormous evolutionary leg-up, and few would argue against its merits. But the inner workings of memory are as intriguing and mysterious as they are impressive, so it certainly warrants discussion.

The way cognitive storage and recall works is multifaceted. Theories abound as to what constitutes the memory's working parts, and we will look at a few of these. But we will also consider how such a powerful tool can, at times, lead us astray if we choose to rely on it too heavily.

Memory is necessary for the performance of many cognitive tasks. Most theorists attribute at least three stages to memory function: immediate, short term, and long term. Immediate memory seems to last little more than a second or so, used in such instances as when a person is asked to remember the location of an object from a cluttered visual that was given but a glance. Unless that information is given special attention, it fades very

[1] Emerson, Ralph Waldo. Essays and Lectures. New York, NY: Literary Classics of the

rapidly. Working, or short-term, memory lasts only about 15-30 seconds, but it's used quite prevalently. As you read this sentence, for example, you are "carrying" the information you had just apprehended all the way to the end of the sentence, at which point you combine everything together to conceive a comprehensive message (as opposed to retaining several fragments of data). Rehearsal of information grasped in the short term facilitates its transfer to long term memory where the ability to recall that information can endure much longer than it otherwise would (depending on the rigor of the rehearsal involved and devoted to its retention).[1]

Long term memory is essentially the bedrock of generalizations. In terms of efficiency, it benefits us greatly to make generalizations and, indeed, we make them all the time. When we consider the foods we enjoy the most, we've probably had multiple experiences with those foods, the majority of which were most likely positive. Those positive results consistently matched our expectations of them and, before we knew it, a belief had been forged in our minds: "Cantaloupe is good."

In the quotation at the beginning of this section, Emerson describes the progress of understanding as an "ascent from particular to general." This is interesting because, in a way, it suggests that the ability to recognize underlying qualities and traits that span across multiple objects, as opposed to just one, is indicative of a higher form of understanding. A snap judgment about something new, for instance, requires that we transpose what we've learned in the past onto the present situation at hand, and we are able to do this largely because we make generalizations. And we can make generalizations largely (if not entirely) because we have a memory bank to tap into - a

---

United States, Inc. 1983. (p.26)

[1] Fine, Cordelia. The Britannica Guide to The Brain: A guided tour of the brain-mind,

backlog of references which are continually categorized and compartmentalized and waiting for a new member to arrive. As far as the mind is concerned, until we apply a concept or a quality onto the object we are observing, we are essentially observing nothing at all. And if nothing can be subsumed, then this new event becomes a potential reference point for future events (should we deem them comparable).

David Hume famously argued that our judgments are all inductive in this way, and that any absolute or "universal" idea is simply that - an idea: *"But there is nothing in a number of instances , different from every single instance, which is supposed to be exactly similar; except only, that after a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist."* [2] While this argument provides a compelling illustration of our minds at work, it also alludes to a potential flaw in our cognitive processing: Is it possible to rely on our memory - on our generalizations - too often?

Being able to recognize uniqueness is as important and as useful as being able to recognize similarities. If we are to possess an honest epistemological concern for reality, the particular is just as important as the general.

In *The Origin of the Work of Art*, Martin Heidegger discusses the capacity of art to reveal truth, and he connects the two in a very profound way. From a historical standpoint, art had mainly been appreciated for its aesthetic value alone. There was the intrinsic beauty of a piece - potentially complex and multivalent, sure - but not much else that warranted assessment or appraisal. *"But until now, art presumably has had to do*

---

memory, and intelligence. Running Press. Philadelphia: PA. 2008. (p.112-118)

[2] Hume, David. Enquiry Concerning Human Understanding: Edited by Tom L. Beauchamp. Oxford University Press, Inc. New York. 1999. (p. 145).

with the beautiful and beauty, and not with truth.[3]

When Heidegger speaks of truth, he urges us to consider our limitations in ascertaining it: *Truth is the essence of the true. [But] what do we have in mind when speaking of essence? Usually it is thought to be those features held in common by everything that is true… This indifferent essence is, however, only the inessential essence."*[4] Here, his focus deviates from Emerson's in the way he detracts from the significance of generalizations. While our minds tend to be geared towards emphasizing parallels, Heidegger identifies such common traits as "indifferent" or "inessential" essences. This is not to say that these aspects of similarity do not lend information of considerable value, because they most certainly do. But perhaps focusing on these aspects too heavily can obscure the tangible features that the objects *don't* share.

There is somewhat of a trade-off, and an ironic one at that, in the sense that we distance ourselves from a more comprehensive truth by trying so hard to achieve one. By focusing too hard on similarities alone, we inadvertently narrow the scope of our inspection for the sake of satisfying an epistemological hubris. We are, in effect, all too willing to pigeonhole the things we perceive as merely another incident of something we've already perceived before, and this is a form of negligence.

Lawrence Hass clarifies this idea nicely in his essay "Ways of Wonder: Philosophy and the Art of Magic." It is our natural tendency - and to our advantage in many respects - to be able to "make sense of what doesn't make sense; [the human intellect] can assimilate the strange, the other, the alien, into the familiar," and this is as useful as it is comforting. It allows us to make decisions, and it allows us to act and

---

[3] Heidegger, Martin. Poetry, Language, Thought. New York, NY: HarperCollins, Inc. 1971. (p.35-36)

react. But there is a cost, Heidegger argues, "for soon we start living in *them* and the world itself recedes. One might say we lose the real for the ideal, the original for the model, the world for the world-view."[5]

For Heidegger, the true and wholesome "unconcealedness" of the world can not breach the barriers of such a frame of mind. If done properly, art can work to facilitate the disclosure between seer and seen, although truth, in its entirety, can never be instantaneously revealed: *"There is much in being that man cannot master. There is but little that comes to be known. What is known remains inexact, what is mastered insecure."*[6] This is to say that there are many angles and vantage points from which we might perceive the world, and neither is necessarily "greater" than the next, per se. Each is simply a unique glimpse at the larger picture, providing another building block towards our collective truth.

As the world is rife with possibilities, "what is present" is an important aspect of Heidegger's epistemology. When one aspect of being becomes apparent, another aspect of it turns itself aside and becomes concealed; the dynamic flux of an ever-changing world prevents it from ever being totally apprehended. The special capacity of art is to behold these particular instances and to freeze them in a certain window - a certain truth - in time. *"Art is truth setting itself to work."*

Of course, there is an ideal middle ground that resides between both ends of the spectrum. We see the pitfalls all the time in forming lazy generalizations. Irrational fears, phobias and racism, for example, are often times born from a mindset that too

---

[4] Ibid….(p.49)

[5] Hass, Lawrence. *Transformations: Creating Magic Out of Tricks.* Allentown, PA Theory and Art of Magic Press, 2007. (p.151-161).

[6] Heidegger, Martin. Poetry, Language, Thought. New York, NY: HarperCollins, Inc.

hastily applies a sentiment derived from one experience to any other situation that could be perceived as sharing a similar quality (regardless of whether or not that quality is actually responsible for the experience they had). These instances can stem from our powers of association running amok, and people who suffer from paranoid personalities have difficulty controlling this. They make connections that have no business being connected, and they are consumed by suspicions and mistrust towards those who they do not know or have even met.[7]

An extreme example on the other end of the spectrum is seen in those who suffer from autism. Many of these individuals are characterized with having an excessive preoccupation with the particular. As Oliver Sacks writes of one patient, "*the categorical has no interest for the autistic person - the concrete, the particular, the singular, is all. Whether this is a question of capacity of disposition, it is strikingly the case. Lacking, or indisposed to, the general, the autistic seem to compose their world picture entirely of particulars. Thus they live, not in a universe, but in what William James called a 'multiverse', of innumerable, exact, and passionately intense particulars."*[8]

1971. (p.51)

[7] Fine, Cordelia. The Britannica Guide to The Brain: A guided tour of the brain-mind, memory, and intelligence. Running Press. Philadelphia: PA. 2008. (p.277-279)

[8] Sacks, Oliver. The Man Who Mistook His Wife for a Hat. First Touchstone Edition. New York: NY. 1998. (p.228-230).

III

"Dream delivers us to dream, and there is no end to illusion.
Life is a train of moods like a string of beads, and, as we pass through them,
they prove to be many-colored lenses which paint the world their own hue,
and each shows only what lies in its focus."

~ Emerson[1]

When we reminisce about a particular moment in our life, the quality of that event is often married to an emotion that corresponds with how we felt at that moment in time. There can be another emotion involved that characterizes how we feel about it now, in retrospect. On a personal level, these states of feeling color our experiences with a bit more meaning and significance, the profundity of which tends to coincide with the intensity and type of the emotion involved. Among other things, this allows certain memories to stand out more prominently than others. But the purpose and the ripple effects of human emotion extends into other aspects of our lives as well, and this has lead poets and philosophers alike to ponder the subject over for centuries.

Traditionally, it has been widely accepted that emotion is the mischievous, uncooperative companion of rationality. Plato famously conjured up a dichotomy of the human mind by comparing it to a charioteer trying to control two very different horses; one is well-behaved and reliable (reason), while the other is a wild and stubborn beast prone to self-sabotaging outbursts (emotion). For centuries, this was the general

---

[1] Kazin, Alfred. The Essays of Ralph Waldo Emerson. Cambridge, MA: The Belknap Press. 1987. (p.248).

consensus regarding the human mind, and it predominated western thought. During the Enlightenment, Descartes would also find himself in agreement, dividing our being into two distinct substances: a holy soul capable of reason, and a fleshy body full of "mechanical passions."[2] Emotion, it could be said, was not portrayed in a very flattering light, and it took a while before its true value would become better understood and more fully appreciated.

Ralph Waldo Emerson, as the above quotation would suggest, regarded emotion with a bit more reverence. He also seemed to better understand its primacy - that emotion is not so easily handled or cast aside, that it can hardly be suppressed altogether or divorced from the reasoning process. More importantly, Emerson seemed to be aware that emotions are not solely a *response* to what we perceive, but that they are also fundamental, influencing factors in *how* we perceive the events that may follow.

A common oversimplification of our relationship with the world can be summarized with the following sequence: AN EVENT OCCURS → IT MAKES ME FEEL A CERTAIN WAY ABOUT IT. According to this model, our emotional state is entirely at the mercy of what the world holds in store for us, and we can all but hope that it dishes out more favorable circumstances than not. To be fair, this is not entirely inaccurate, but it is certainly incomplete. An interesting theory of how this works was once postulated by William James. He argued that an emotion is merely a perception of our body's physiological reaction towards an event.[3] In other words, we become sad *because* we are crying; we become afraid *because* we see ourselves running for our lives, hearts thumping a million miles an hour. The world induces a bodily response and, once

---

[2] Lehrer, Jonah. How We Decide. New York, NY: Mariner Books. 2009. (p.9-11)
[3] Wilson, A.R. & Keil, F.C. The MIT Encyclopedia of the Cognitive Sciences.

we become cognizant of that response, we are struck with a feeling or an emotion. With either interpretation, however, emotion is still looked upon as merely an after-the-fact phenomenon.

Today, most experts agree that human emotion has significant causal influences as well, particularly on the way we interpret, learn and remember certain events. In this role, it works as an important stepping-off point for the next experience as well, and not just a byproduct of the last. We like to entertain the fantasy that we are objective and impartial, but this is a serious overestimation of our capacities as human beings. Research in neuroscience has shown emotion to be activated automatically and unconsciously in sub-cortical pathways, which suggests that we often experience emotions without reasoning why.[4] Going back to Plato, this undermines the notion that we can subjugate or "reign in" or emotions voluntarily. We usually have a general idea of how we came to arrive in a certain mood, or a realization that we are, in fact, in one, and acknowledging these instances certainly helps to quell their influence. But, in terms of our *pre*-cognitive emotions - the string of beads and the many-colored lenses to which Emerson was referring - there are certain emotional elements that will always be very much at play whether we are aware of them or not. And they will usually proceed unchecked.

With this in mind, the more accurate description of how we interact with the world would look something like this: AT ANY GIVEN MOMENT, I AM ALREADY IN A STATE OF EMOTION → AN EVENT OCCURS → I THEN FEEL A CERTAIN WAY ABOUT IT *DEPENDING ON THE ORIGINAL STATE I WAS IN.* Additionally,

---

Cambridge, MA: MIT. 1999 (p.274).

[4] "Human Emotion." The New Encyclopedia Britannica. 15th Edition. 1994. Vol.18.

instead of stopping there, the series continues, ad infinitum, until we either drop dead or incur some unusual circumstance that brings the process to a halt (e.g. traumatic brain injury, coma, etc.). In terms of content, we can trace our stream of consciousness in a fairly linear fashion from one area of interest to the next. This is to be expected. But the products of our consciousness - our conclusions and our feelings about them - tend to function more like a pendulum that sways back and forth between Emotion and Interpretation, carrying the subtle influence of the other as it arrives at the next. How we feel effects the way we perceive, and the things we perceive effects the way we feel. As William James put it, *"…our non-intellectual nature does influence our convictions. There are passional tendencies and volitions which run before, and others which come after, belief."* [5]

In the 1970's, a neuroscientist by the name of Wolfram Schultz was conducting research on primates at Cambridge University. He had initially set out to learn more about dopamine and the role it plays in triggering the paralyzing symptoms in Parkinson's disease, but, as is often the case, he ended up learning something else entirely.

Most of us have heard of dopamine. We most commonly identify it as the "feel-good" neurotransmitter - we take a bite into something tasty, we get a surge in dopamine. We unwrap a gift and find something fantastic, we get a surge in dopamine. Until Wolfram Schultz came along, dopamine was generally viewed in these emotional terms, as a component of feeling. It was essentially the molecular equivalent of "happy."

Schultz was monitoring the nucleus accumbens of the monkeys' brains (the area

---

(p.248-256)

[5] Menand, Louis. Pragmatism: A Reader. New York: Random House Inc. First Edition.

responsible for pleasurable feelings) for purposes of his Parkinson's research. He would prompt them to move, but, much to his dismay, movement alone did not trigger any activity from the monkeys' dopamine neurons. What he stumbled upon instead was the underlying basis of the primate brain's reward mechanism which, in turn, feeds the majority of our decision-making process.

Understandably, Schultz would have to bribe the monkeys into moving around for him. He would sound a horn in order to signal them to get going and, if they complied, he would reward them with a squirt of juice. Naturally, upon receiving the tasty juice, a sudden release of dopamine would be incited from the neurons in the monkeys' nucleus accumbens. What Schultz came to find out, however, was that, after a few trials, the dopamine surge would *precede* the actual arrival of the juicy reward. The monkeys would derive pleasure from the horn alone *in expectation* of the forthcoming reward.

Moreover, when the expected results were consistent and became more frequent, the uptake in dopamine became reinforced. Alternately, a discrepancy in what the monkeys were accustomed to would result in a decreased firing rate of the same dopamine neurons. This fluctuation is known as the prediction-error signal, and we can see how such a response is integral to the way we learn and adapt.[6] We form initial impressions about something and, over time, we modify those impressions as the evidence either builds up or contradicts itself. We are continually pulled in one of two directions - towards certainty or doubt - and the spectrum consists of dopamine neurons that have been reinforced to varying degrees.

Emotion, then, is not simply an awareness that our body is undergoing a

---

1997. (p.76).

[6] Lehrer, Jonah. How We Decide. New York, NY: Mariner Books. 2009. (p.34-40)

physiological response. When it comes to establishing worldviews, situational contingencies, and even the most mundane courses of action, we rely on an emotional response as the cornerstone of our convictions. As David Hume once said, *"Passion is, and ought to be, the master of reason."* That is to say, the decisions we act on rationally are still predicated upon the "mechanical passions" of our fleshy bodies.

Hume had rightly made this connection roughly three hundred years ago, well before Wolfram Schultz came on the scene and, by sheer serendipity, happened upon confirmation. Hume realized that our beliefs are derived from sentiments, that there is no "true" connection between the events we perceive and the results that follow. Our dopamine neurons simply coax us into establishing these connections. *"But there is nother in a number of instances, different from every single instance, which is supposed to be exactly similar; except only, that after a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist. This connexion, therefore, which we* feel *in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment of impression from which we form the idea of power or necessary connexion."*[7]

[7] Hume, David. Enquiry Concerning Human Understanding: Edited by Tom L. Beauchamp. Oxford University Press, Inc. New York. 1999. (p. 145).

IV

"The amount of it is, the imagination, give it the least license,
dives deeper and soars higher than Nature goes."
~ Thoreau [1]

Taken out of context, this quote from *Walden* could be misinterpreted as an homage to the vast ingenuity of the human mind - our ability to visualize creative solutions to unique problems, our seemingly endless capacity for invention. And while this is certainly an apt summation of the imagination at its best, what Mr. Thoreau was referring to here is actually a common tendency of our imagination at its worst.

Many of Thoreau's fellow townsmen harbored the belief that Walden Pond extended far deeper than it actually did. Some considered it to be bottomless, in fact, and this as recently as the mid-19th century. Thoreau was dissatisfied with this sentiment, though, so he set out to measure the pond's true depth, and he did so using the innovative technique of tying a rock to the end of a rope. With this simple device, he calculated the pond's true depth at various points, thus putting to rest any far-fetched speculation that seemed to pervade his neighbors.

Roughly one hundred feet.

At its deepest point, the depth was indeed formidable, but it was still far off from "bottomless." How does it happen, then, that so many people would believe, or willingly

[1] Thoreau, Henry David. Walden. Boston, MA: Beacon Press. 2004. (p.270)

entertain, the idea that such a modest body of water could actually possess an other-worldly quality such as infinitude?

John Locke famously stated in *An Essay Concerning Human Understanding* that, at birth, our mind is a *tabula rasa*, or "a blank slate." He postulates an empirical account of knowledge acquisition that claims everything we come to know or believe in or even consider is derived exclusively from sensory input that was perceived at one point or another in our lives.[2] Even the stuff of our wildest dreams - complex and bizarre ideas that have never been previously observed as such - are but concoctions of simpler ideas that *have* been previously observed (simply rearranged, recombined, and reconceived): *"Combining several simple ideas into one compound one; and thus all complex ideas are made."* [3]

Fellow Briton and Empiricist, David Hume, expresses a theory in *An Enquiry Concerning Human Understanding* that echoes Locke's theory of the mind: *"Nothing, at first view, may seem more unbounded than the thought of man, which not only escapes all human power and authority, but is not even restrained within the limits of nature and reality. To form monsters, and join incongruous shapes and appearances, costs the imagination no more trouble than to conceive the most natural and familiar objects… But though our thought seems to possess this unbounded liberty, we shall find, upon a nearer examination, that it is really confined within very narrow limits, and that all this creative power of the mind amounts to no more than the faculty of compounding, transposing, augmenting, or diminishing the materials afforded us by the senses and*

---

[2] Pojman, Louis P. Introduction to Philosophy: Classical & Contemporary Readings. Belmont, CA: Wadsworth Publishing Company. 1991. (p.93-102)

[3] Baird, F.E & Kaufmann, W. Philosophical Classics: Volume III - Modern Philosophy. Upper Saddle River, NJ: Pearson Prentice Hall. 2008. (p.198-199)

experience." [4]

But we are still left to wonder *why* we do this. Why is the mind prone to reorganizing reality? Hume attributes this to habit; as our natural tendency to attach the *belief* of connection to an idea or an event that never required such a belief in the first place. Even our most base and simple ideas derived from the world incorporate a third party that our mind can't help but introduce, and that is the sentiment of necessary connection. *"The first time a man saw the communication of motion by impulse, as by the shock of two billiard-balls, he could not pronounce that the one event was connected; but only that it was* conjoined *with the other. After he has observed several instances of this nature, he then pronounces them to be* connected. *What alteration has happened to give rise to this new idea of connexion? Nothing but that he now* feels *these events to be connected in his imagination, and can readily foretell the existence of one from the appearance of the other."* [5]

The power of the imagination is not without its faults, though, and Thoreau was well-aware of this. "Give it the least license," and it will run away with itself, conjuring up fantastic realities with or without having sufficient reason (or ample evidence) to do so. In this light, a sentiment expressed by the Roman historian, Tacitus, can perhaps summarize the main point Thoreau is trying to convey here: *"Everything unknown passes for something magnificent."*[*] In the case of Walden Pond, "bottomless" is a simple idea (derived as the converse of finitude) that has been attached to another simple idea (the pond) in order to fill in the gap of an unknown (the pond's depth).

---

[4] Hume, David. Enquiry Concerning Human Understanding: Edited by Tom L. Beauchamp. Oxford University Press, Inc. New York. 1999. (p. 97).

[5] Ibid….(p.145)

[*] From *The Life of Cnaeus Julius Agricola.*

It is something we do habitually - filling in the blanks - and it is not difficult to see how this might create areas of contention between parties. People disagree all the time, and the limitations of the human brain all but ensure that we will continue to do so. But there are certainly benefits to this reflex as well, both social and psychological; the illusion of certainty often garners praise and confidence from our peers, just as it sets our minds at ease to believe that we "know" the true nature of our surroundings. Moreover, it is what affords us the ability to make decisions in the moment and to act on them. *(throw in example here of the case study about the person who was unable to make simple decisions).* Unfortunately, and as we might expect, there are also formidable pitfalls when this imaginative filling agent goes unchecked.

Ordinarily, when we think of the imagination we think of "a faculty or the acts of consciousness that are different from perception: imagination is characterized as spontaneous and free, less bound (if at all bound) to the imposed givens of sensation."[6] Merleau-Ponty adopts a more two-sided understanding of the imagination, believing it to be both "nearer to, and much farther away from, the actual." *"Nearer because it is in my body as a diagram of the life of the actual, with all its pulp and carnal obverse exposed to view for the first time… [but] farther away from the actual [in that it] offers the mind occasion to rethink the constitutive relations of things…"*[7] In so many words, Merleau-Ponty is well-aware of the short-comings that go along with cognition and imagery, but he is not willing to write them off altogether for those reason alone. Along with the

---

[6] Johnson, Galen A. The Merleau-Ponty Aesthetics Reader: Philosophy & Painting. Northwestern University Press. Evanston: Ill. 1993. (p.28).

[7] Ibid….(p.126).

imagination, these instruments are all we have to work with when it comes to perceiving "the actual." They are the venue where we spend time with reality.

The ongoing presence of our imagination at work can be illustrated with an interesting fact about ocular physiology. All of us have a blind spot that we simply don't notice. In fact, we have two of them - one for each eye - and they reside approximately in the center of our natural line of sight. These blinds spots are where the optic nerve from the brain attaches itself to the eyeball. Since there is a bundle of nerves occupying this region of the eye, there are no photoreceptors there to otherwise receive the light from the retina being projected to this area. What we *ought* to see is basically the inverse of tunnel vision - there should be two holes of absolutely nothing sitting right in the middle of our gaze.

Thanks (in part) to the imagination, this is not the case. With experience, familiarity, and the constant movement of our eyes, our mind is able to gloss over these blind spots and fill in the blanks with an approximation of what we could reasonably expect to be there.[8] Besides, it is difficult to notice something that is not actually there, mainly because there is nothing there to notice. Especially when we consider how much *is* actually there to occupy our attention.

The imagination, Kant wrote, is a necessary ingredient of perception itself. The problem is that there is no way to quantify what we *think* we see, as each of us is locked inside our own peculiar vision. If we removed our self-consciousness from the world, if

---

[8] Wilson, A.R. & Keil, F.C. The MIT Encyclopedia of the Cognitive Sciences. Cambridge, MA: MIT. 1999. (p.863-874)

we saw with the impersonal honesty of our eyeballs (as Dr. P did), then we would see nothing but lonely points of light glittering in a formless space. At best, when a "normal" individual opens their eyes, they enter into an illusory world - a scene broken apart by the retina and re-created by the cortex. Just as a painter interprets a picture, we interpret our sensations. And so we probably won't ever solve the question as to what we *actually* see, for sight is a private phenomenon.[9]

It is understandable how the inherent subjectivity involved in perception can lead to schools of thought such as skepticism and relativism. It is easy to resign to the idea that a legitimate consensus can never be reached, given the intangible differences that alter our viewpoints. Just the same, however, there are those who place enough trust in our imperfect faculties to deem them well enough to serve their purpose, choosing to work with the only option we are given.

Along with Thoreau, Emerson was a Transcendentalist who believed we could ascertain all that we needed from the relations found in nature. From an epistemological standpoint, the things we perceive not only stand as models of consideration for their own sake, but also as allegories for understanding other facets of life, ourselves included. Nature as a metaphor - as a source of representation - assists in our comprehension of reality and the relationships found therein: *"A man conversing in earnest, if he watch his intellectual processes, will find that a material image, more or less luminous, arises in his mind, cotemporaneous with every thought, which furnishes the vestment of the*

---

[9] Lehrer, Jonah. Proust Was a Neuroscientist. First Mariner Books. Boston, New York. 2007. (p.116-118).

thought… This imagery is spontaneous. It is the blending of experience with the present action of the mind." This is why Emerson describes Nature as a language in and of itself, as our own spoken word depends on it. Even as we explore the human brain and post theories about its qualities, we find ourselves using metaphors from other areas of life. We sometimes refer to the brain as having "computational power," or we liken it to a filing cabinet or an interstate highway connecting different regions of its "globe." Seemingly disparate areas of life provide models that help us develop a mental picture [that may or may not be] worth having. All the same, we end up having one. *"Have mountains, and waves, and skies, no significance but what we consciously give them, when we employ them as emblems of our thoughts? The world is emblematic. Parts of speech are metaphors, because the whole of nature is a metaphor of the human mind."*[10]

[10] Emerson, Ralph Waldo. Essays and Lectures. New York, NY: Literary Classics of the United States, Inc. 1983. (p.24-25)

V

"The true is the name for
whatever proves itself to be good in the way of belief,
and good, too, for definite and assignable reasons."
~ William James[1]

William James was a renown psychologist, physiologist and anatomist whose authority in the medical field has already been summoned within these pages. But, among other things, he was also a philosopher who helped develop the American tradition of Pragmatism during the latter half of the nineteenth century.

Building upon a foundation laid by Charles Sanders Pierce, James set out to develop a framework of understanding that was ultimately concerned with practical, real-world application. That is to say, of what use or consequence can be expected from adopting a certain belief. How would accepting that belief actually change the quality of our lives or our surroundings? Is it in our best interest to do so?

Ideas are immaterial. As such, it is difficult to quantify their impact in a world of material objects. But we generally accept their capacity to inspire *us* into taking action, and these actions *can* be observed, judged and valued. In short, by prompting our material bodies, ideas can preclude material interaction.

In the previous sections, we have explored some theories about ourselves and the way our minds tend to work. Some of the information that was presented might have

[1] Menand, Louis. Pragmatism: A Reader. New York: Random House Inc. First Edition.

sounded familiar while other tidbits might have emerged as relatively new and interesting. Whichever the case, how does this really effect our lives when we consider the tasks of our daily lives? What is there to gain in accepting (or disregarding) the topics that have been discussed?

In Part I, we looked at the way our Experiences shape us into the people we are. We talked about the ongoing modification of our brains as they pertain to both physical and cognitive development, and we looked at the way our perceptions can be more concerned with efficiency rather than accuracy. With that said, the potential range of personalities and mindsets between individuals appears staggering. Realistically, we can not expect any two people to undergo the same experiences as the other, to perceive the same events in the same way, or to respond to those perceptions in identical fashion. In this regard, disagreements appear to be all but inevitable. But perhaps an understanding of this vast, human variance can instill a better patience with which to handle our disputes and miscommunications with one another. Perhaps we will be more willing to relate the experiences we've had to those who have not had them, and to be willing, in turn, to hear about *their* experiences as they may certainly include a new vantage point for us to consider and incorporate with what we know on the matter.

In Part II, our Memory was presented as an essential component in the formation of generalizations. The utility in having these generalizations to refer back to was pointed out, and it again harkens back to the doctrine of efficiency versus accuracy. Indeed, they are formed reflexively more often than not, and they allow us to make decisions that we can act upon more quickly. However, this feature was hedged with further discussion about the particular and the importance in being able to recognize

---

1997. (xiv).

nuanced differences between objects as well. In this light, our generalizations were revealed as a potential obstacle when it comes to recognizing uniqueness and individuality. Each are two sides of the same epistemological coin, each offering something of considerable value in terms of knowledge-gain and understanding. Ideally, we can maintain a middle ground where we toggle between the two in a concerted effort to apprehend a fuller apprehension of reality.

Part III dealt with Emotion, particularly in the way it facilitates the learning process. In addition to adding color and vivacity to the lives we lead, emotions were shown to be the driving mechanism behind most of our decision-making processes. Fluctuations in dopamine are now understood to be the barometer of "certainty," prompting us to feel a certain way whenever we assess a situation. What we ultimately decide to do is highly influenced by the degree of dopamine that accompanies the moment, and this most often occurs without notice, subconsciously. Additionally, these sentiments influence the way in which we perceive and interpret the next moment in line, so it can do us well sometimes to recognize the emotional state we are in. If we find ourselves struggling with a certain task or activity, returning to it later with a different frame of mind is sometimes all that's needed to facilitate its completion. With this in mind, our emotions ought not to be feared altogether as the doppelganger of reason because, not only does it provide the basis of our reasoning, it can actually enhance it under the right circumstances.

Finally, we talked about the Imagination. Again, this is a feature of the human mind that has its benefits and its drawbacks, continually at play whether we'd like it to be or not. On the one hand, we can formulate new concepts and solutions, make predictions,

and maintain a complete field of vision. On the other hand, we are prone to filling in the unknowns with whatever we have to work with, regardless of how meager or dubious those fillings agents happen to be. Unfortunately, this is something we do habitually. But through an understanding of this, we might be more reluctant in the future to run with a hunch if we happen to acknowledge how little we actually know about the topic at hand. If we make a point of admitting a lack of experience when doing so is appropriate, we might be able to spare ourselves an avoidable mishap, embarrassment, and/or considerable frustration. Ideally, we might instead find ways of *acquiring* the necessary experience needed to make a stronger, more informed assessment.

Works Cited

Baird, F.E & Kaufmann, W. Philosophical Classics: Volume III - Modern Philosophy. Upper Saddle River, NJ: Pearson Prentice Hall. 2008.

Emerson, Ralph Waldo. Essays and Lectures. New York, NY: Literary Classics of the United States, Inc. 1983.

Fine, Cordelia. The Britannica Guide to The Brain: A guided tour of the brain-mind, memory, and intelligence. Running Press. Philadelphia: PA. 2008.

Hass, Lawrence. *Transformations: Creating Magic Out of Tricks.* Allentown, PA Theory and Art of Magic Press, 2007.

Heidegger, Martin. Poetry, Language, Thought. New York, NY: HarperCollins, Inc. 1971.

"Human Emotion." The New Encyclopedia Britannica. 15th Edition. 1994. Vol.18. (p.248-256).

Hume, David. Enquiry Concerning Human Understanding: Edited by Tom L. Beauchamp. Oxford University Press, Inc. New York. 1999.

Johnson, Galen A. The Merleau-Ponty Aesthetics Reader: Philosophy & Painting. Northwestern University Press. Evanston: Ill. 1993.

Kazin, Alfred. The Essays of Ralph Waldo Emerson. Cambridge, MA: The Belknap Press. 1987.

Lehrer, Jonah. How We Decide. New York, NY: Mariner Books. 2009.

Lehrer, Jonah. Proust Was a Neuroscientist. First Mariner Books. Boston, New York. 2007.

Menand, Louis. Pragmatism: A Reader. New York: Random House Inc. First Edition. 1997.

Miller, George. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information." *Psychological Review 63* (1956).

Neuman, Johanna. "A Fantastic Journey of Discovery." U.S. News & World Report: Secrets of Your Brain. Special Edition, 2011.

Pojman, Louis P. Introduction to Philosophy: Classical & Contemporary Readings. Belmont, CA: Wadsworth Publishing Company. 1991.

Sacks, Oliver. The Man Who Mistook His Wife for a Hat. First Touchstone Edition. New York: NY. 1998.

Thoreau, Henry David. Walden. Boston, MA: Beacon Press. 2004.

Wilson, A.R. & Keil, F.C. The MIT Encyclopedia of the Cognitive Sciences. Cambridge, MA: MIT. 1999.

http://plato.stanford.edu/entries/merleau-ponty/#3