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ABSTRACT

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Majors: B.S. Neuroscience & B.A. Philosophy

A BEAUTIFUL LIFE

Advisor: Dr. Ronald DiSanto

Reader: <u>Dr. Lara Shamieh</u>

This thesis engages with the question of how ought we to live, specifically through investigating the vital role stories play in creating meaning in our lives. Overall, it forms a personal take on the relationship between quantity and quality of life, revolving around the notion that it is how life is lived that truly matters, not its duration. It makes this case through examining the neuroscience underlying emotions, meaning, as well as the formation and retrieval of memories. This thesis then draws from the realm of philosophy, with a specific focus on Nietzsche and Hegel, along with personal experience, to craft an ideology of life and provide insight into what makes it truly worthwhile.

A BEAUTIFUL LIFE

A thesis submitted to
Regis College
The Honors Program
in partial fulfillment of the requirements
for Graduation with Honors

by

Matthew Binder

May 2015

APPROVAL PAGE

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	٧
I. Chapter 1	1
II. Chapter 2	23
III. Chapter 3	32
REFERENCES	36

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First off, I would like to thank my thesis advisor, Dr. DiSanto, for not only putting up with my insatiable curiosity over the last four years but also for always being willing to talk. You not only first exposed me to philosophy but also instilled in me a love for it, irrevocably changing my view of the world and how I engage with it. I have always deeply valued our conversations and the wisdom that I gained from them and know I would not be the student, questioner, or man that I am today without your influence.

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Chapter 1

-If religion is the opium of the people, then time is its addiction-

Nikos Kazantazakis thought that time was everything. According to him: "Time ripened all. If you had time, you succeeded in working the human mud internally and turning it into spirit. If you did not have time, you perished" (Kazantazakis 296). Recent dietary restriction research, that is reducing caloric intake while maintaining essential nutrients, in C. elegans, worms, shows us that a drastically increased lifespan no longer dwells in the realm of fantasy. This extra time that Nikos values so highly is fast becoming a reality. Yet, if people observe the *C. elegans* who undergo dietary restriction, they will notice, on some level, a rather mundane occurrence. Although these worms have a substantially extended lifespan, their daily routines do not change from the worms that live only 21 days. The length of their life does not observably change how they live their lives. For *C. elegans* time is not a problem. Humans on the other hand have found it much more disagreeable. Time for mankind has shown itself to be nothing more than an addiction. Although human lifespans have drastically increased in the past 500 years we are still left unsatisfied, our ardor for life untamed. We are the walking discontent, unable to prevent the inevitable yet still determined to best it, falsely equating more time with more meaning in the hope of eventually achieving significance. In my mind, this maddened search for the fountain of youth stems from a fatal and intrinsic flaw in the common perception

of time: its measurement. If time were truly measured in minutes then maybe an elongated life would be the mark of paramount meaning. Yet time is not measured by the second hand of the clock or the hourly bell toll, it has always and will always be measured in heartbeats. For time is but a marker of significance, a self-made perception created within the brain to be modified through our actions and interactions with the world. Time may be the ultimate inescapable reality, but that does not mean it is our reality. In the end time is but the frame of the looking glass, not the rich world that dwells within.

This actuality we create for ourselves comes down to an intrinsic quality of the brain, namely its role as a mediator between our consciousness and reality. The brain acts as a buffer separating outside events, the external reality, and our internal world by tailoring incoming information in order to craft a story of our surroundings. This story is certainly based on external reality yet it is not our reality, not fully. Such manipulation has been demonstrated numerous times; however it is most concretely apparent when looking at placebos. Research in this area has shown that if people believe something with no medical properties, like a sucrose tablet, is a beneficial drug, oftentimes they undergo physiological changes, benefiting them (Beecher 1955). This is truly astounding; something that has no medical benefits whatsoever can help relieve symptoms of a very real illness as well as an actual medication, if not better, on a biological basis. The perception of the intent of the placebo, the brain's story, is what allows this seemingly impossible thing to happen and, in so doing, defy external reality,

supplementing one reality with another.

The fact that our perceptions, our internal reality, in this case, outweigh the external ones raises some very interesting ideas. If life really is but a string of perceptions, then seemingly how we perceive reality can matter much more than reality itself. If this is true, then time does not actually matter. Our perceptions, our time consciousness, would constitute quasi-immortality. Living for 80 years or double that, through dietary restriction or other means, would make no difference whatsoever and would quite frankly be missing the point. Life has never been about living forever but rather resides in expanding your perception of time sufficiently in order to one day look back on your life and realize, be it 16 years or 160, that it is enough.

However, just as life often reduces to a fleeting perception, one brain's story of totality, a perception often reduces to memory. There once was an architect who understood exactly this, for he designed his buildings not with the intent for them to be beautiful in life but rather for them to be so in death. To him, the most important part of the buildings were not how strong the walls were but rather how they would look once they had fallen. He sought not to construct a physical structure that would endure for eternity but rather chose to intertwine the intangible and the physical in order to create something more. For the architect understood that a building might have walls and floors, yet it is not these things. It is much more. Ultimately, a building is a memory. Through endeavoring to create such buildings the architect also created a model of time. Time may alter or affect

memories just as the sturdiness of walls affect a structure, yet even when time is short, and the walls weak, memory persists. And as long as memory endures, time endures.

This all important time consciousness, our gateway to "extended lives," is constructed through the formation of memories influenced by emotion and novelty. Emotions are created in the middle of the brain, in a region called the limbic system. This system is more or less responsible for all of the emotions you have ever felt, or ever will (Gluck, Mercado & Myers, 2007). However it does not deal exclusively with emotions; it is also where much of our long-term memory is stored. The hippocampus, the memory's storage unit, and the amygdala, an almond shaped integral emotional player in the brain, are interconnected through a web of neural pathways. Due to this close connection between the two, emotions strongly influence the consolidation and storage of memory in the hippocampus (Gluck, Mercado & Myers, 2007). This theory was put to the test in an experiment wherein participants watched a slide show. One group was told a neutral story whereas the other was told an emotional one. The groups were then called in, two weeks later, and were asked to retell the story they had heard. The neutral section was significantly worse at retelling the story than the emotional group, strongly supporting the role of emotions in the encoding of memories (Gluck, Mercado & Myers, 2007).

The link between emotion and memory makes sense. If you think back on your own life what you remember are emotional events; the neutral memories are

not recalled nearly as easily. This phenomenon primarily occurs due to arousal. When a person is aroused their heart rate increases, pupils dilate, muscles become primed for movement, and other physiological changes take place, enabling one to quickly react to the situation (Gluck, Mercado & Myers, 2007). In short, arousal is a fight or flight response.

The arousal system, or autonomic nervous system, is regulated in part by the mid brain. Many structures help to initiate the cascade of chemical changes in the body when aroused. One main component is the amygdala which receives input from the thalamus, releasing norepinephrine, shooting information to the hippocampus and motor system, activating the autonomic nervous system. The activation of the autonomic nervous system stimulates the adrenal gland to release epinephrine. This neurotransmitter travels back up to the amygdala, causing it to continue to release norepinephrine, perpetuating the cycle. When the danger has passed the adrenal gland releases cortisol, which travels to the amygdala and signals it to stop releasing norepinephrine, thus ending the aroused state (Gluck, Mercado & Myers, 2007).

The aroused state brought on by the fight or flight response has not only been linked with greater memory consolidation but also with increased time perception. Most notably experimenters have observed that time seems to feel longer when people are afraid. In order to investigate whether or not time itself is actually slowing down in these moments of intense fear, Dr. Eagleman of Baylor University dropped participants 70 feet into a net with a special device strapped

to their arm. The device displayed four numbers moving just faster than human perception could detect. The participants were instructed to look at the device as they fell and try to read the numbers. At the bottom they reported the numbers they saw, or thought they saw, to Dr. Eagleman (Stetson, Fiesta, Eagleman 2007). If time itself had actually slowed down then the participants would have been able to read the numbers on the device. Dr. Eagleman found that time itself does not slow down in life threatening situations rather our perception of it does (Stetson, Fiesta, Eagleman 2007). The fall from 70 feet to 0 takes a few seconds regardless of the emotion being felt at the time. However, if the emotion felt is one of intense fear then people's time perceptions are distorted when reflecting back on those specific memories.

These dilations of time brought on by fear, while most pronounced when a participant has a strong response, are also present when the emotion is much weaker. Researchers have also found that when people watch a video wherein something disturbing happens, the longer the participants overestimated the length of the event (Hammond 2013). Another rather shocking study demonstrated the impact a few kind or negative words can have on time perception. In this experiment, the participants were asked to estimate how long 40 seconds was in the absence of a stopwatch. Before the test began, one group was made to feel as if they were popular whereas the other was made to feel extremely unpopular. The unpopular group on average estimated 40 seconds as lasting 60 seconds. With just a few words people's judgments of time increased

50%. Interestingly, the group that was primed to feel popular also overestimated time. On average this group estimated 40 seconds as lasting 42 seconds (Hammond 2013). The effect was definitely still present, yet it was not nearly as strong as with a negative emotion.

The key to unlocking these time dilation mysteries again resides in the amygdala. Scientists have observed that when people have damaged their amygdala, through brain injury or lesions, they lose the emotional enhancing effects it provides. This indicates that the amygdala is essential not only for the formation of flashbulb memories, which are memories that you remember strongly and vividly, but also plays a crucial role in elongating time perception (Gluck, Mercado & Myers, 2007). These entities both occur due to the amygdala's role as mediator, as well as initiator, of the cascade of chemicals released during a fight or flight response, responsible for creating a state of hyper awareness. This hyper-awareness is what allows us to act quickly in life or death situations; however, it also means that the brain is flooded with vivid details, much more than it would normally process. It is hypothesized that due to this increase in the number of incoming perceptions, the brain thinks a longer time has past when reflecting upon the event (Hammond 2013). In essence, the brain becomes used to how many memories fit in a set time frame. When this number drastically increases the brain elongates its estimation of time in order to make sense of the situation, which leads to an overestimation of the passing of time, causing a free fall to be remembered as feeling like minutes rather than seconds

and even expanding the estimate of time after a few harsh words. This reasoning also works for lighthearted emotions and explains why people clearly remember positive milestones in their life just as well as negative ones. Most likely the strong link between negative emotions and longer time perception often seen in experiments comes down to the origins of the fight or flight response. The system was designed to ensure survival. Therefore it is going to be more finely tuned for things we view as negative, whether it is words possibly initiating a conflict or being dropped off a tower.

Another integral component of memory is novelty. When a novel entity is presented the memory of that event is especially salient and also elongates the judgment of time perception. For example, if participants are presented with a string of musical notes, all the same length, the first note in the sequence seems to last longer than the others. In addition, if there is a list of similar items with one different entity, the oddball item is what people tend to remember (Hammond 2013). This preference for remembering novelty comes down to habituation and sensitization on the neuronal level. When a neuron is stimulated for the first time by an outside entity, such as an electric shock, there are large amount of neurotransmitters that are released. However, if that same neuron is repeatedly stimulated with an electric shock, the neuron gradually releases less and less neurotransmitters, leading to a diminished response (Hammond 2013). All this means is that the more you do the same thing over and over the more habituated you become to it. The more habituated you become to something the less focus

you need to exert in order to do it. Conversely, novel entities require much more of your attention. The more attention, or focus, you exert on a particular task the faster time seems to go. Strong focus sensitizes our system, which causes a large release of neurotransmitters, thereby increasing activity in the neural network, leading to an increased time perception. In response to these data, coupled with his own time dilation experiments, Dr. Eagleman has hypothesized that time is simply a measure of neural energy used, since more focus inevitably requires more neural energy (Hammond 2013).

Dr. Eagleman's explanation not only explains the time distortions induced by novelty but also explains why when people are on holiday; the days go by very quickly, yet when looking back, they seemed to have lasted forever. This particular time distortion, the Holiday Paradox, occurs due to retrospective and prospective judgments (Hammond 2013). Normally, in the absence of strong emotion or novelty, both of these gauges of time are in perfect equilibrium with one another; time feels about the same length in the moment as well as when reflecting back on it. However, the significant increase in novelty found while on holiday causes the prospective and retrospective judgments of time to fall into a state of disequilibrium. The novel experiences cause you to exert more focus on the tasks at hand, requiring more neural energy, and thus expanding the perception of time in reflection. In addition to causing time to pass more quickly temporally, this also paradoxically causes more memories to form, making the time passed seem to be quite long when remembered (Hammond 2013). This

explanation also answers why when people are sick or bored the inverse happens. Due to the lack of novelty, and thus the lack of neural energy expended, the moments seem to last forever, yet when reflecting back on the experience, time seems to have passed quite quickly.

Interestingly enough, the neural energy model of time applies not only to holidays but also to life. After all, it is a somewhat common observation that as we age time seems to go by faster and faster. This has lead some to falsely propose the proportionality theory, which simply states that the older someone is the smaller proportion of their life a year is, therefore it passes more quickly (Hammond 2013). When we are 10 years old one year is 1/10 of our life, making it seem quite long. However, when we are 80 years old one year is 1/80 our life. 1/80 is much smaller than 1/10 therefore time passes faster the older we are. However, this theory fails to account for the way a person experiences time at any one moment. If someone were 80 years old then one day would be a minuscule amount of their entire life and should feel significantly shorter than a day feels to someone who is 10 years old. Yet this is not the case, the length of a day is not dependent upon how old you are but rather the actions that comprise your day, revealing the fatal flaw in the proportionality theory. However, the neural energy model of time could account for this age related time dilation. As we get settled in with our jobs, families, and routines we habituate to life and in so doing experience less novelty, exerting less focus on the tasks at hand, and thus drastically shorten our perception of time, in essence losing it. However,

when we are young there are many novel occurrences that we experience which require much of our attention. This focus elongates our remembered sense of time, forming more memories. In this way, novel experiences are indirect markers of the passage of time. If there are more markers then the perception of time is also longer (Hammond 2013).

Specifically, there is a term called the Reminiscence Bump that fully encompasses this phenomenon. It proposes that we remember the most events from our lives between the ages of 15-25. This occurs due to the increased amount of identity searching we experience in these ages in conjunction with a more developed brain (Hammond 2013). When we are trying to define who we are we implicitly seek out and indulge in many novel activities, in essence expanding time and creating strong memories that last a lifetime. However, this is only possible due to the development of the brain. Children certainly experience much more novelty than anyone in their teenage to early adult years, yet their brains are not sufficiently developed in such a way as to retain all of these novel experiences as well as those that occur later in life. Intriguingly, if people go through a midlife crisis, defined by undergoing activities in an attempt to redefine themselves, they experience a second Reminiscence Bump, showing an increase in memories as well as time perception expansion, firmly linking this phenomenon to both identity searching and time perception.

Another important part of memory is not its biology but rather its incorrectness. Every single time people recall a memory they add little things to

it, little details based on what they think would have happened, or what they have heard happened. This misinformation, or imagination inflation, then gets reencoded into the original memory, saving it. Therefore the next time the memory is recalled the invented parts of the memory are recalled too and thought to be the truth. This means that the more you recall a memory the more you have added to it and the less true it actually is (Gluck, Mercado & Myers, 2007). Normally the events modified are small details that are somewhat irrelevant to the heart of the memory. However, this is not always so. There have been numerous cases where the initially small modifications transformed into quite large ones over time. Most notable among these is the case of the USS Indianapolis. This heavy cruiser was struck by two enemy torpedoes, in World War Two, and sustained heavy damage, eventually sinking. Much of the crew was condemned to float for weeks with hardly any food or water. Initially, the survivors only mentioned the hellish elements they endured. However, once a few years had passed and after Jaws was released, sharks started appearing in the story (Matlock). In all likelihood the sharks were not actually there, yet due to imagination inflation they appeared. Sharks have now become the focal point of the USS Indianapolis' plight. This shows just how misleading memories we take for certainty can be (Matlock).

Similarly, memory is also modified due to the optimism bias we all share.

According to Dr. Tai Sharot "when you select something – even if it is a hypothetical choice, even if it is something you already have, even if you have

not really picked it but just believe you did- you will value it more" (Sharot, 139). This was strikingly demonstrated in housewives through using presents. The housewives were presented with a list of items that they were interested in or needed: coffeemakers, toasters, radios, wineglass etc. They were asked to individually rate each item according to how much they wanted it. Next they were told that they had to choose between two items that they had rated similarly. After the housewives picked the item they wanted they were asked to rerate each item. All of the women affirmed that the item they chose was better than they thought and that the rejected option was not nearly as good. This study and numerous homologous studies have been repeated multiple times, all with similar findings (Sharot). It appears then that we are each hard-wired to make the best of whatever choices we make, inevitably putting a rosy tint on our memories. However, it is important to note this optimism bias is one that differs in kind, not type. Therefore it is most impactful when choosing between two items that you favor similarly, it cannot automatically make you content with choosing an entity that you strongly dislike over one that was more preferred.

On a similar note, recent research has suggested that, to one extent or another, we all lie to ourselves. As the scientist Leonard Modinow discovered, "the people with the most accurate self-perceptions tend to be moderately depressed" (Modinow, 217). In other words we live and perceive things in a kind of happy tinted delusion. Certainly this does not mean that bad things do not happen, but it does indicate that our brains do their best to try and take the edge

off of reality. Interestingly, it has also been demonstrated that older adults are more impacted by a variation of this optimism bias than younger adults. In other words, when presented with two choices, one with a risky but positive outcome and one with a safe but neutral outcome, older adults tend to pay greater attention to the positive reward and do not remember the risk; they cannot remember the negative effects as well (Gluck, Mercado & Myers). In addition, it has been shown that time takes the edge off of memories, trending both the joyous moments and the heartbreaking ones toward neutral (Gluck, Mercado & Myers). Thus the brain is safeguarding individuals from themselves, ensuring that we have the best chance possible at obtaining happiness.

Taken together, the above findings suggest that our brains subconsciously trend toward elongating time. After all, imagination inflation introduces novel aspects into recalled memories, while the optimism bias makes neutral memories trend towards emotionally positive ones. (Hammond 2013 and Sharot). As mentioned previously, both novelty and emotionally strong events extend the perception of time, indicating that our brains may be hardwired to increase it. If this innate, subconscious ability to increase time perception is then joined with a conscious effort to elongate it then the implications are clear: we are the masters of the perception of time. We alone have the power to expand it, the ability to change our memories and thus the past, contort reality to fit our own personal saga, and perhaps even make a heartbeat last for an eternity and life to last as long as it needs to in order for us to feel it was worthwhile. Therefore, we are

truly the captains of our souls and the masters of our fates, each a vessel set upon an infinite sea not of our choosing, one which cannot truly be overcome but can be enough (Henley).

Such speculation without foundation is the road to nowhere. The great test of science is not in the initial discovery of knowledge but rather in how well that knowledge applies to the world. Theoretically we can perceive 20 years as lasting 80, yet does that truly hold up when applied to external reality? Can people really live their lives in such a way as to significantly increase their time perception? Perhaps unsurprisingly, a very similar concept has been represented in the realm of philosophy. Aristotle was among the first to assert that time is the measure of change (Dowden 2014). If change is viewed as the difference between something you have habituated to and something new, as I believe, then it would be synonymous with novelty; therefore a focus on change would yield a greater perception of time. Expounding upon a similar ideal to Aristotle, Hegel crafted a version of the world wherein change was all that mattered. For Hegel, meaning in life is in striving for the perfection of man, accomplished by getting in touch with the universal spirit, which in turn manifests itself through enacting great change. In his eyes, universal change is equal to meaning and comprises the only path worth treading (Hegel).

Hegel goes about constructing such a path for life by first focusing on how mankind can become actualized. This is accomplished through people orienting their lives more around the universal than the individual. Specifically, "individuals

can attain their end only in so far as they themselves determine their knowledge, volition, and action in a universal way and make themselves links on the chain of continuum" (Houlgate, 362). In other words, Hegel views the individual as encompassing a person's particular wants, needs, desires, and sources of happiness, whereas the universal comprises something much more than earthly or even daily needs. It encompasses the end goal of humanity, the point of its existence. If people do not in some way orient themselves around the universal then they are simply not a part of the chain of continuum and thus are wasted vessels of what could be, too afraid to even try to spread their wings to escape the perdition of their own creation. If one cannot become a link in the great chain, then one is truly and utterly lost.

Change plays a pivotal role in this philosophy through not only determining whether or not a life is a part of the chain of continuum, but also by designating the size of the link. In other words, a life filled with change enacted on the universal level incorporates an individual into the framework of something greater, fulfilling the purpose for humanity. Also, the greater the change the larger the role the individual takes in pushing humanity towards its end point of self-actualization. In this sense, life is meaning and meaning is change.

What holds humanity back from achieving this goal is the duality of the spirit, the individual and the universal. Both live within and are constantly vying for control (Houlgate 2003). These are two beasts, towering gladiators at war with one another, caged within the very essence of man. This coliseum of the

soul determines the size of mans' link in the chain of continuum, if the universal is greater then so is the link. Neither the universal nor the individual can fully die, just as neither can truly live while the state of perfection is still in wanting. Self-actualization is the moment where the universal finally, unequivocally slays the individual, initiating the self to become a part of the framework of something greater. Therefore Hegel is advocating for the individuals of the world to continually seek universal change, to find it, and to actualize it, only then can life be considered worthwhile. Thus, it is through living a life of universal change that we have the most meaning in it, a goal that might also serve to increase our time perception sufficiently in order to make the time we have, whether it is 60 years or 16, be enough.

In opposition to this focus on creating change in order to fulfill an end goal, lies Nietzsche's doctrine. He sought to conquer time not through change on a universal scale but rather through focusing on, and living in, each moment as it comes. In his mind, the past is nothing more than an unnecessary distraction, mattering only in so much as it allows for the possibility of the present, otherwise, it only serves to hold us back from our own great potential (Nietzsche). Thus humanity must reject the Hegalian view of the past and resist the impulse to overlay history with a deeper meaning or see it as a progression. The same holds true for the future, it merely encourages this great addiction for time we have grown to accept and integrate into our lives: an invented distraction, mankind's revenge upon eternity. If we are to create meaning in our lives, as

Nietzsche calls us to do, then it is only in the moment where contentment can be found, for it is the only time where we have any power. This idea is nicely summed up in the eternal return of the same. In this notion, Nietzsche challenges his audience to live each and every moment as if it would happen an infinite number of times. If one would live their life in such a way as to want to live it again, exactly as before with no changes, then they can be considered to have lived a good life (Nietzsche). Embracing the eternal return of the same is acknowledging that the past should not have any more attention paid to it than is enough to deem it as worthwhile; there is no former or future, only the present. Thus, if we are to avoid regret and live a good life we must devote all of our attention to living well in, and making the most of, the present.

Nietzsche further built off this notion of the importance of living in the moment through proposing the Three Metamorphoses. In this parable he described the transformation of a man into a camel, the camel into a lion, and then the shift from a lion into a child. To me, this speaks of mankind's relationship with time. Initially we try to endure it, as the camel endures its burden. We shake off uncomfortable thoughts of death and become consumed with the wonder of our youth, desperately trying to create a sense of timelessness within ourselves in order to outlast eternity. However, this is destined to fail and so we turn to the fiery defiance of the lion. This transformation causes us to rebuke time and look to conquer that which cannot be beaten. It is here where our fervid passion for life, our addiction to it, surges uncontrolled through the veins of our being,

prompting us to fight time with brash action. Yet this too is one doomed to failure: for even the great strength, passion, and pride of a lion cannot conquer time. The beast then comes to realize that our salvation does not reside in terrible sound and fury but rather exists in the simplest of things: a child. After all, it is only through the child's eyes that the impossible can happen. For a child realizes that time cannot be vanquished, yet it can be accepted. It is in seeing the world through a child's eyes, through a lens of constant novelty, that the mortal enemy of humanity can at last be understood and just maybe overcome, if only for a moment. In the end, Nietzsche rejects the notion of time through ignoring both the past and the future, the foundations of being. He creates a safe haven wherein time does not exist, for he realizes that the only things in life that are timeless are moments. It is in focusing on the present, that is to say a focus on becoming, and seeing the world as a continually novel place, while making the most of each breath and of every heartbeat, where the greatest happiness can be gained. For these are the moments where time is overcome and the beauty of the world is truly revealed, unencumbered by thoughts of the future or the past. These are the moments that are worth living for.

Interestingly, a recent neuroscientific study made a discovery that lends support to Nietzsche views on the importance of focusing on the present (Killingsworth). Through measuring happiness via multiple questionnaires administered by cell phone, they found that people are most happy when they live in the moment, as opposed to thinking about the past or the present.

However, they also found that even if an individual is focusing on a happy event in the past, or projecting one in the future, they are less happy than if they just concentrated on the current moment (Killingsworth). This means that, from a scientific standpoint, our greatest chance at happiness in life resides not in the fond moments of yester year, or the promises of moments yet to come, but rather in the here and now. Thus echoing Nietzsche's sentiments from another perspective, lending credibility to his claims.

So both philosophy and science support the idea of living in the moment, yet in focusing on the moment one is doing away with more than just distractions from a higher form of happiness, one is doing away with memory itself. For memory, especially explicit memory, that is to say our conscious memory, cannot exist in the moment. It is a placeholder, a label of things that have no grounding in the here and now. Thus, the man who lives fully in the moment, the man who achieves the highest happiness according to philosophy and science, is the man who sacrifices his memory. This is what living in the moment comes down to; it presents a choice between memory and happiness then simply asks you to choose: what will you sacrifice for your happiness?

At first, the choice seems obvious. After all, the common perception of memories is that they are supremely important and allow for a higher quality of existence, but do they really? It has now been scientifically and philosophically demonstrated that a life lived in the absence, or in the very least with a focus on the mitigation of memories, yields the greatest happiness. In addition, due to an

intrinsic characteristic of memories, a recalled event is never as good as the original nor is it as good as the last time you recalled it. This happens because each time you recall a memory you release less neurotransmitter in response to it, thus a slice of the wonder is lost forever. In short, the joy filled, euphoric moments of yester year will never be as pure, as perfect, as real, ever again. The still frames of the mind are slowly bleaching themselves, losing the value that we once placed in them as the characters within grow ever fainter.

These are certainly major flaws of memories, however they are not the major flaw. For memories have created a Skinner Box in which we have come to reside, causing us to become beings motivated purely by the memory of what once reinforced us. Thus we are merely pigeons pecking the right lever at the right time not because that is what we want to do but because that is what our training, our conventionality, tells us to. We have lost that small space between stimulus and response where free will used to dwell. To phrase it another way, our reliance upon memory and learning has cost us our ability to truly experience our surroundings; we have become so good at reducing the wonder of the world into neurological binary that we have lost the capacity for understanding it. In breaking the world down into more manageable bits we have developed the ability to see the patterns of existence and so have come to predetermine our actions based on such schemas of our past. In short, free will has been replaced with simple conditioning, as our actions become mere reflections of behaviors

that have been previously reinforced. Make no mistake; memory has put the world in a box, and some things should not be contained.

In an idealistic world, it seems clear that the life without memories is the preferred one. Yet we do not live in such a place, nor do we live our lives centered around the abstract notion of happiness. We reside in a flawed world, one where absolutes last no longer than a heartbeat and certainties are subject to change, for anything can be taken from us and everything inevitably is. In such a world a self centered around happiness cannot endure, however, one centered around memories, around stories, can. After all, it has never been about reliving moments exactly as they were before, cultivating free will or maintaining happiness. It has always come down to finding the next moment worthy of neurological immortality and surviving, any way that we can.

Chapter 2

"We tell ourselves stories in order to live" —Joan Didion

Memory: On September 12, 1940 an 18-year-old French boy discovered the entrance to what is now called Lascaux Cave. Inside of it he found depictions of hunts, life, and bravery that are dated to be 40,000 years old (Tedesco). This means that as a species we have been telling stories since very near to our beginning. Yet why do we tell these stories? They do nothing to relieve the ache of a hungry belly, or the bite of frigid wind upon bare skin. In fact they have little evolutionary value beyond passing on simple information of dangerous animals, locations, and foods. Thus, from a strictly empirical standpoint, stories play only a minor role. However, I think that there is more to stories than can be empirically measured, for they are deeply spiritual in nature. After all, it is only in stories where we can make sense of the senseless, and provide some sort of meaning to a world that seems to be intent upon inflicting needless suffering. It is in stories where we live our lives and through stories where we have the greatest ability to impact the lives of others. They are what give rise to hope, love, friendship, and meaning. To me, stories are everything.

Journey: It was through volunteering on the neurology floor of a hospital where I had the most profound experience of my life. It was there I learned that

volunteering means much more than just helping people in basic ways. I came to realize that the primary function of a volunteer, or even a neurologist, really has very little to do with medicine. The majority of the patients I saw were plagued by progressive neurodegenerative diseases and thus were sadly confined in a perpetual downward spiral, kept from plummeting into the abyss only through medication which exacted its own great toll. Over time I began to understand that when at last the body that has given you so many years of use begins to betray you, and everything that used to define you has gone, all that you really have left to give is your story. Since every story needs an audience, I began to take on a role more akin to active listener than anything else. In part, I listened because it went with the territory, yet I soon grew to care about the stories the patients told. The interesting thing was that, although the stories may have at times been tedious, they grew to become a part of me. Patient's words, their very lives, began to live on in me even after their bodies succumbed to the inevitability of time. This caused me to view humanity as a collection of individuals, each with a story waiting to be heard, rather than merely a sea of faces, a trap that is all too easy to fall into, especially in the hospital setting. It was through being attentive that the stories patients told were able to impact me, move me, and give me vision.

Enduring: To me, the plight of the human spirit has never been about finding the metaphysical ideal that suddenly changes all the suffering of the world, allowing one to love their fate and flourish no matter the tribulations that

beset them. Rather it has always been about enduring any way that we know how. After all, the world is out to betray us. It maliciously plucks from our grasp the very thing that we thought we could never lose, tearing a void in our soul, a hole in our heart, which can be patched but never quite undone. Again and again we hope, we extend, we live, we love, and then inevitably suffer, and so we once more return to the bottomless abyss that dwells within, embracing the numbing despair that we discover has never truly left us. Our happiness is a pawn to be sacrificed seemingly without reason or purpose, a victim to a game larger than ourselves.

Journey: In volunteering I learned that, through reflection, meaning can always be found. By spending much of my time at the hospital I beheld many things. I saw parents that could no longer recognize their children, witnessed families driven into poverty because of the cost of a medication that promised no cure, only a little extra time, and saw children that would never be able to talk with or understand others. However, it did show me brothers and sisters who lived with no regrets, the look a dying child gives her mother, and ordinary people performing extraordinary acts, all in the name of love. It also allowed me to witness a heartbroken mother agree to take her little girl off of life-prolonging drugs, since the child had the great misfortune of having a neurological disease which promised only a perpetual increase in torment: a girl who was confined to staring aimlessly off into the corner of the room while the doctor's words fell. I have never seen, nor will I ever see, a love greater than that. In short, I

witnessed love at its most devastating, its most tragic, its most beautiful, its most pure, and its most real form. Thus, I learned that sometimes a shoulder to cry on, a kind word, or a simple hug, can say more than words ever could. As the months went by, I learned to love and empathize with others through being around the kind of love that stories are written about and songs sung.

- In reflection there is meaning-

Enduring: It is when we gain a brief insight into all of the suffering in the world, or suffer greatly ourselves, when an overall meaning in life is the most contemptible and deplorable. For some suffering extends far beyond human comprehension. At such times the soul loses its wings and plummets from its lofty heights, as it is drawn downward into the abyss within. However, in order to fall we must have first risen. It is in the rising where happiness, joy, and contentment dwell, although they often last no longer than the beating of a heart. Yet it is in these moments, these precious, fragile moments where stories are forged and the soul is steeled. For in such times the world at last makes sense. Love, joy, happiness, clarity, and understanding are found. It is as if one is finally able to open their eyes and see before them a different world, one where fairytales just might come true. It is a world absent evil, absent suffering, absent despair. Make no mistake; these are the moments that one lives for.

This is what life calls us to do. It has never been about loving the goods and bads in life, or living forever, for these are not practical solutions. It has always been about finding the moments where you do love the world, however

rare those moments may be and incorporating them into the story you tell yourself. It is about cultivating and treasuring them with the knowledge that all too soon the dream will end and the things that inspired such joyous flight of the soul will be taken from you without meaning or purpose, for beautiful moments do not last long in an ugly universe. Yet there is one thing that the world, no matter how hard it tries, can never take away: your story, the sweet memories of when it all made sense, of when you looked around and saw wonder in each blade of grass and a world in each grain of sand, when colors were brighter, and love deeper than ever before. These are the moments that stick with you, etching themselves proudly upon a scarred heart, and endure alongside you as the hordes of the world slowly once more overcome the citadel of the soul. It is their memory, their tattoo, left upon a beaten body that makes it all worth it in the end. For such moments are worth living and dying eternally for, if but one was certain to be found. Meaning only ever exists in such moments; meaning only ever exists in stories. It has nothing to do with accepting or understanding one's current suffering but has everything to do with remembering the flights of the soul and using such memories to endure, no matter what.

- Life is the growing of wings -

Memory: What is the purpose of stories, why do we tell them, what are they truly about? Many authors write about the meaning of life, what they valued most in this world, and how they persisted in spite of the terrible suffering that was inflicted upon them. They offer up a personal testimony on how to survive

the great paradox of life, how to endure when what they valued most in this world is put into contention. Yet, I do not think that the stories such people tell are ever only about themselves, for ultimately we make their stories our own. For they hold a mirror up to our problems, to our very souls, and cause us to look within and question if the story we are telling is the best one for us to tell. Yet we are destined to come out of other's stories, just as their stories are destined to end. It is at this moment when there is the possibility of change. After all, it is only after one has seen his demons that he has the power to overcome them. Stories give us the courage needed to do this impossible task, to allow us to realize what it is that truly matters, and to finally ask the right questions of ourselves. Thus, they exist to change us. Stories then are a shadow, an entity that is defined by its absence rather than its presence. However, this is not necessarily a negative. After all, in jazz it is the spaces between the notes, the silence, the absence of sound, that defines the art. Perhaps then, stories are the spaces that define our lives. While they may not comprise the notes that punctuate our existence they do just the opposite as they form the subconscious elements of life, the pauses found in-between the furious sounds of being. Therefore, it is only through listening to stories that we are able to reveal our own outline and it is only through telling stories that we determine who we are.

Journey: I once saw a patient suffering from frontotemporal dementia, a disorder which changes those afflicted beyond recognition. The particular patient I witnessed was a 65-year-old man who one day awoke lacking all of his

inhibitions. His condition incited him to hire prostitutes, to urinate and grope women in public, and to say obscene things. Perhaps unsurprisingly, these radical changes alienated the man from his family and friends, breaking the bonds of love that once gave him strength. The patient was not some villain with a sketchy past foreshadowing inevitable implosion. Rather he was a father of two daughters, a kindly man, who once was happily married. In short, he was just an average guy who, unfortunately, was struck down by a terrible disorder that he could do nothing to prevent. For all intents and purposes he went to bed one night and awoke a different person, one doomed to depression and lucid behavior for the rest of his life. Perhaps the saddest thing in such cases is the treatment, for only one is possible. The doctor is forced to inform the family and friends that the man they once knew is gone, that the being standing before them is only the husk of what used to be: a remnant of a ghost, which no medicine can restore.

The man had lost his self, his soul, his very story in an instant. He lost everything we take as conditional with life and showed me that there is no quiet space within that cannot be ravaged by the world. However, this experience also showed me the true purpose of others. They support us, help us through impossible times, are the characters by which our story is enriched, but most importantly, they are there to tell our story when we are no longer able. To put it another way, "you in others-this is your soul. This is what you are. This is what your consciousness has breathed and lived on and enjoyed throughout your life-

your soul, your immortality, your life in others. You have always been in others and you will remain in others. And what does it matter to you if later on that is called your memory? This will be you-the you that enters the future and becomes a part of it." - Boris Pasternick (*BrainyQuote*).

- Solidarity is the breath that allows others to speak our story -

Memory: There are many things that work together in order to make a good story. Setting, plot, characters, and conflicts all play a significant role. Yet perhaps the most important entity is the development of the protagonist, for we are each the protagonist of our own stories, the hero of our fables. What determines a happy ending, and what makes telling it worthwhile, is not what deeds we have done or dragons we have slain. A happy ending is measured in our growth, in how well we understand ourselves at the end of the day. That is all we can control and ultimately, that is enough.

Enduring: In Ancient Greece soldiers used to decorate their shields with emblems of what they valued most in the world before going into battle. These images were of gods, goddesses, victories, visions of home, joy, women loved, and loves lost, in short depictions of better times, snapshots of eternity, memories immortalized. The purpose of this tradition was to remind the soldiers exactly why they were fighting and what they were fighting for. It was so, when the men were pinned down under fire, when death was near and all hope was lost, they would greet their end with a smile on their lips and love in their hearts. The shield was to remind them of the glorious life that they had lived. It was to

assure the men in the ranks that they need not fear for they had lived a noble life, one worth living, and one worth telling. It was a symbol to remind them that even though times were dark, even though the icy talons of suffering dug into their spines and death licked at their boots, even though the things they were fighting for were gone, they were still men: men who had a story.

"The Gods envy us. They envy us because we're mortal, because any moment might be our last. Everything is more beautiful because we're doomed. You will never be lovelier than you are now. We will never be here again."

- Achilles

Chapter 3

In the end memories are many things: they are perceptions, the gauge by which we value life, the very pages upon which experience etches our story, neurological binary profoundly influenced by novelty and emotion, and time itself, but perhaps most of all they are continuity, as they comprise the single thread that links together our self and each story that we tell. For just as there are as many loves as there are hearts, there are as many stories as there are moments, each one unique, working together to create a unified whole. After all we do not live the same story from birth to death, one story with many different chapters, rather we exist instant to instant: transient beings solidified only by what we remember. Therefore, in my mind, memories are the closest things we have to a verifiable soul, as they form the pages on which our years turn. Thus our need for memories, our need for stories, is clear. When faced with the tribulations of finitude, coupled with the trials the world is all too eager to confront us with, they are the only safe haven we have left to turn. For we do not just live in stories, we survive in them.

Ultimately, we all exist on a carefully constructed man-made precipice consisting of the significance of memory, perceived order, the significance of the moment, the influence of our past, happiness, and all the notions of the good life. To dispel this simulacrum, to banish such conventionality in favor of a balance which allows one to endure, all one has to do is leap. To leap is to live. What

prohibits one from leaping is the knowledge of what awaits him at the bottom of the cliff, for returning back to earth is painful, no matter how long it takes. It is here, at this instant, when the great gift of life comes into play, the power of choice. For we each must choose whether or not to leap. After all, a decision is conditional with existence however; the nature of it is ours alone to decide. To leap is to embrace the wonder of the moment and to make such times immortalized in the mind, all with the knowledge that the joy is destined to end and thus the flight of the soul along with it. To stay nestled upon the perch of uncertainty is to remain imprisoned by the past and to live on in ignorance, loving a shadow of what could have been.

Some, like Nietzsche, embrace the moment and leap but lack the strength necessary to spread their wings as their fear of what awaits below overcomes them. Others however, have the courage to spread the wings of their souls and defy gravity for just one moment more, for they know that their flight may be destined to fail, yet realize that life is nothing more than the growing, and regrowing of wings.

"We have to continually be jumping off cliffs and developing our wings on the way down." - Kurt Vonnegut

Nietzsche lived dangerously; allowing his devotion to the moment to give him the courage to leap, yet he saw memories only as a great load many unnecessarily bear and so was blind to their potential, mistakenly equating falling with flying. It is true that memories are a burden which only add weight to our lives, yet wings too are heavy until they are spread. The snapshots that make our

lives worthwhile are only ever found in such moments when we have the courage to leap, to fly. It is the memory of such ecstasies of the soul, such joys of being, that give us the courage to claw our way out of the oblivion we inevitably fall into and gradually once more ascend the cliffs of tribulation to begin again, with the hope that this time we can defy gravity for just one instance more. Without such moments man is stuck on the precipice, ever looking upward, yet drawing no closer to the stars he yearns to reach, confident in the solidarity of human history that forms the cliff beneath his feet. However, he has fallen in love with a shadow and so can never truly be content: the limitations of a life oriented purely around change, memories and their projections, are all too severe. The wise man is the one who perceives that neither the stars above nor the oblivion down below are what one should aim for. He realizes that the best things are nearest, the love in his heart, the memories in his head, and the flights of his soul, however brief they may be. Ultimately he knows that time is only a problem if we allow it to be one, for we make our own time as surely as we make our meaning.

However, the wise man understands something else too, namely that nothing matters and that everything matters, for we are destined to find meaning regardless of the decisions we make along the way, regardless of the memories we harvest, or the lives we lead. In the end meaning is conditional with life, after all the stories we tell are not nearly as important as the ones our brains tell us; for these are the stories that do not contain our lives but rather create them. And, whether it is through subconsciously introducing novelty or strong emotion

trending towards the positive, our biology, our brain, will ensure that whatever life we lead it will be enough. Maybe then, how you live does not matter after all, maybe just the mere fact that you do live does: for the traveler will always find his way home, regardless of the path he takes.

In the end we are flightless birds desiring the one thing that lies just outside of our grasp, for meaning may be conditional with life but happiness is not. And so we ascend yet again to clutch at the paradigm that has defined our existence until it once more is wrenched from frenzied fists and trembling fingers, forcing us down from such lofty heights to begin again with only the ever dimming light of memories to lead our way and provide any sort of solace or meaning to it all.

But perhaps it is not the memories of flight that allow one to pull himself out of the abyss and ascend once more after all. Perhaps it is in accepting that a man cannot change his stars, however much he wishes them otherwise that he finds his strength, fragile though it may seem. For we can never be anything other than what we are. And so, despite the senseless damage inflicted from the fall, despite the anguish in our souls and our fragment of a heart, we ascend.

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