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Neurons and Narratives: Living in a Wittgensteinian World

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ABSTRACT

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NEURONS AND NARRATIVES: LIVING IN A WITTGENSTEINIAN WORLD

Advisor's Name: Dr. Mark Bruhn

Reader's Name: Dr. Brian Drwecki

My thesis explores the running narratives that are present within the mind, prodding at whether or not there is any significant difference between this consciousness and a fictional narrative that we read in a book. Within this exploration I look into the implications behind being conveyed as a linguistic construct and the inherent constricting violence that is present in the symbolization that is language. Following this analysis, I provide a Nietzschean reading of the ethical implications that we face if we are to take the notion of violent language seriously and how we as people are to meet and react to this moral imperative.

NEURONS AND NARRATIVES: LIVING IN A WITTGENSTEINIAN WORLD

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

by

Corey Hill Allen

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Director, University Honors Program

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PREFACE and ACKNOWLEDGEMENTS

The questions of narrative, free will, and volition have undoubtedly been around for many ages, dating even prior to the empirical method that we prescribe to modern science. In the modern day, this question that should be approached by all sides and all methods has sadly turned into an arguing point on the limitations of various approaches, leaving different fields staking claim on the question itself and disregarding the other approaches available. This problem of claim has seemingly been happening most frequently between the humanities and the sciences – in particular, the fields of neuroscience and of linguistics and the genre of fiction. Although the fields of neuroscience and humanities approach questions regarding the role of narrative in our lives and the role of our lives in narrative with very different strategies, I assert that when the two conclusions are fleshed out and put into conversation with each other, the results are nonetheless the same: feedback loops abundant, filled with the intricacies of both top-down and bottom-up interplay, all the while implying ethical imperative.

I would like to thank my advisor, Dr. Mark Bruhn, my reader, Dr. Brian Drwecki, as well as Dr. Tom Howe, Martin Garnar, and the entire Regis Honors community for the continued help and support that they provided throughout this entire project.

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INTRODUCTION

Ever since I picked up my first simple pop neuroscientific text, I have been utterly fascinated with the notions of free-will, physiology, and reductionism. Throughout high school all I wanted to read, and nothing more, was neuroscientific and philosophical texts on how people are situated in terms of their reality and their brain. Early on, I was entirely convinced that the only option there was, in the terms of free-will, was deterministic reductionism, resulting in the mere notion of free-will being almost laughable and incomprehensible to me. Reading texts from only overly closed off neuroscientists definitely led to my mindset for the years to come. Because of my fascination with our seeming lack of free-will, I decided that I would love to be able to add on to the data that is already present. This, in essence, was the entire reason I found myself within the neuroscience program at Regis.

Though there was originally only fascination, there was also a sense of urgency in this realm for a few different reasons. Firstly, I felt the need to attempt to take away the stigma within the idea that we lack the option to choose. Throughout high school even attempting to talk to people about the subject, or just mentioning the mere notion, would result in people immediately walking away or just laughing at the thought. Secondly, I felt the need to attempt to approach the implications that come in the realm of justice, if we are to seriously accept that we lack any sort of free-will. The first question that must be asked if one is making the claim that we lack free-will is certainly how ought we to be responsible (if we can) in any way for our actions. Following that, we have to ask

what forms of justice we can implement in order to address ethical issues while still recognizing the lack of choice. After majoring in neuroscience and moving onto the second question, I was pushed into the realm of philosophy.

Though I was convinced that a common neuroscientific view on the topic of free-will (overly deterministic reductionism) was comprehensive enough to explain free-will (or a lack thereof), I was pushed to major in philosophy by an urge to understand the differing views on the subject. These texts brought up multiple points that made me start to doubt completely all of the ideas that brought me to the Regis neuroscience program in general. Some of these ideas were things such as emergence, the implications of being within a narrative, phenomenological explorations and explanations, and even just the urgency with which writers/philosophers approach the question itself.

Even though these texts have obviously not resolved my curiosity around the subject, they have naturally opened the question itself. More specifically, David Foster Wallace's *The Broom of the System* has pushed me into the realm of linguistics, narrative, and the notion of the individual being a construct within someone else's narrative. This thesis is a sort of culmination of mine and others' thoughts around the subjects at hand, both meant to help clarify and explore notions that are touched upon, in my opinion, far less often than they should be. Therefore, this thesis aims to do a few things: 1) Adequately and fairly bring in viewpoints from across the spectrum of multiple fields. 2) Showcase the fruitfulness of bringing in fields that are normally seen as dichotomous on the subject at hand. 3) Walk away with not an answer, but a more well informed

viewpoint on the subject, leaving me more conscious of the implications of my actions upon this world. 4) Finish with a question worth following up on after the “conclusion” of my thesis.

The Roles of the Constituents

The Role of a Neuron in a Narrative

Back in the early 1960's, neuroscience graduate student Michael Gazzaniga met a man at California Institute of Technology who opened an opportunity to a once in a lifetime chance for research. This man that walked in, W.J., was the recipient of a corpus callosotomy, a treatment that severs the nerve fibers between the hemispheres of your brain in order to hinder the spread of epileptic seizures, all the while confining information hemispherically in the brain – leaving one hemisphere unable to communicate with the other half. When words or letters were flashed to the right hemisphere, W.J. claimed that he didn't see anything while still remaining able to mark and signify what he saw with his left hand via telegraph key – a key that

The Role of a Word in a Narrative

Wittgenstein in his works *Tractatus Logico-Philosophicus* and the *Philosophical Investigations* introduced two large ideas that play a monumental role in how we can frame thoughts in a narrative, words in a sentence, and our relation to both of these schemes. In *Tractatus* he lays out seven propositions that, although different from his later works, still provide insight regarding how we can look at the world. First he lays out that the world is facts and then follows up with the notion that the logical picture of those facts resides in the realm of thought (Biletzki). His second point, that both Frege and Derrida point out as well, is that meaning is found only in context, proposition, and use (*Philosophical Investigations* §43;

represents a specific image or symbol, in particular super simple ones. This case study of W.J. was the catalyst of Gazzaniga's most ambitious project, that of "the interpreter." He found that the right hemisphere is unable to label the world with words upon recent callostomy, whereas the left hemisphere is the origin of inner-narrative (Bower). Hence, this was the birth of the pop-neuroscientific theory of the left hemisphere being analytic and the right artistic (Connors). This inner-narrative would attempt to combine the sensory information coming from both fields of vision while still rendering the participant completely unconscious of what they are being presented with to the right hemisphere. "For instance, one man had a picture of a chicken claw flashed to his left hemisphere and a picture of a snow scene presented to his right hemisphere. From the ensuing selection of pictures,

Tractatus 42; *Foundations of Arithmetic* 71; Derrida 114-115). Just as there is no self without the external, there is no meaning in a word without the context of its use in a proposition. A good example of this is the comparison between the two phrases "Trieste is no Vienna," and "Vienna is the capital of Austria" (Collected Papers 189). Although the same word is employed, it is glaringly obvious that the same meaning is not evoked. Take the case of "Trieste is no Vienna": by saying that Trieste is no Vienna, the commentator is not necessarily saying that the physical cities are not the same, for that is obvious, instead this person is calling to attention the greatness of Vienna (perchance a sense of higher culture, different cultural norms) and saying that Trieste does not live up to this idea of Vienna. In the second case, that of "Vienna is

he correctly chose a shovel with his left hand (controlled by the right hemisphere) and a chicken with his right hand (controlled by the left hemisphere). When asked to explain his choices, he responded: ‘Oh, that’s simple. The chicken claw goes with the chicken, and you need a shovel to clean out the chicken shed’” (Bower). What this gave rise to, outside of Gazzaniga’s career, was the importance of narrative – what he later deemed as “the interpreter” - in the explanation of how our brain conveys information, and whether or not this narrative arrives prior to, or following neurophysiological process.

In order to give this research any due justice, we cannot ignore the processes behind the interpreter; we must first look deeper at the neural level in order to gain a fuller picture of just what exactly is happening under the hood to give rise to this “inner narrative.”

the capital of Austria” the person is making a declarative claim regarding the social-political designation of Vienna itself, and not necessarily evoking conversation or implying anything regarding the culture and practices of the city. If one were to represent the thought with symbols they couldn’t even utilize the same symbol for “Vienna” across the statements (Conant 234). With this case of meaning in context and use, I assert that it would be helpful (and ultimately necessary) to put one’s name or symbol under the same scrutiny.

These questions of meaning as use, and finding one’s self in need of a larger narrative in order to have identity in context are the questions that plagued a young David Foster Wallace as he was writing his first novel, *The Broom of the System*.

As has been shown many times before, mood states, perception, thoughts, religious beliefs, and even utilitarian proclivities have physiological correlates within the brain itself, which can even be manipulated by the use of magnetic fields (Borckardt; Persinger; Fumagalli).

Just as these tendencies and states have physiological correlates, so does the “inner narrative” that one hears in the form of their stream of conscious reality: the left hemisphere (Franks 35). Now that there is a general idea of where this physiological correlate lies, we must look more closely at what is actually happening physiologically.

Neurons, the main cells of communication that lie within the brain, are composed of three basic parts - the dendrites (incoming communication), the soma (the cell body - powerhouse), and the axon (outgoing communication). These neurons usually communicate via

These burning questions urged him to place the main character of the story, Lenore Beadsman, in the middle of a reality that is nothing but Wittgensteinian by nature – perfect to prod the notions of meaning and construct.

Lenore is a telephone switchboard operator from a family with the most well-known last name in their town, East Corinth, Ohio (which her father owns). As we will see, those that surround her predetermine everything about her. She got her name from her great-grandmother “which is to say [...] the person under whose aegis [she]’d first experienced chocolate, books, swing sets, antimonies, pencil games, contract bridge, the Desert...” and every other formed aspect of her memorable life (Wallace 31). Her boyfriend, Rick Vigorous, a sexually impotent

specific chemicals: neurotransmitters. These neurotransmitters are released once they are “signaled” to, and that signal is in the form of an electrical pulse, commonly known as the action potential. Once this action potential, or electrical signal, reaches the axon, calcium ions flow into the cell causing the neurotransmitters at the end of the axon to release into the junction between the axon and another cell’s dendritic tree. Once this chemical signal jumps to another neuron the process propagates (Seung 42-44). This jumping, signaling, and communicating is exactly what the underlying neurophysiological correlates consist of, lending us another way of analyzing what exactly is provoking this “interpreter” that Gazzaniga puts forth.

Supposing that Gazzaniga’s comprehensive research regarding narrative in the human mind is correct,

publisher, makes up for his impotency by lying in bed besides Lenore and reading her stories that were sent in to him or that he wrote (unbeknownst to her) that he knows will move her emotionally and affect her life decisions (Wallace 27). These stories range from problematic tales of an obvious foil to Vigorous burning down the towns he lives in and the homes that he calls his own all the way to stories of a man that falls in love with every woman he sees until he finally connects with one - an extremely unattractive woman with a tree toad in her neck. Luckily for Vigorous, he not only has the bedroom to sculpt Lenore into the person he and everyone in the town all desired, but she was also easily convinced to see the same therapist that he does, Dr. Jay, who holds his patient’s privacy with no regard (Wallace 61). Fittingly, he loves

there are a few more questions and paths that we must follow in order to get a satisfactory explanation of “the interpreter.” Firstly, we must look at what makes these neurophysiological processes arise and whether or not these processes are direct equation with what we consider the human consciousness and action, or whether consciousness just bubbles out as afterthoughts attempting to validate the actions of our own pre-determined mind, notions and processes in order to feel a sense of control in our lives. One way to approach this inquisition is by looking at previous experiments that have teased out certain elements of neurophysiological activity (usually by way of functional magnetic resonance imaging (fMRI)), subjective accounts of consciousness, and, finally, a timing of the physical action itself in order to analyze the role that each of these

to tell stories of Lenore to Vigorous, cementing her reality into Vigorous’ mind.

In one session of talking to Dr. Jay, Lenore finally breaks grounds on the problems that her great-grandmother imposed on her: “Suppose Gramma tells me really convincingly that all that really exists of my life is what can be said about it?...it seems like it’s not really like a life that’s told, not lived; it’s just that the living is the telling, that there’s nothing going on with me that isn’t either told or tellable, and if so, what’s the difference, why live at all?... If there’s nothing to be said about me, what separates me from this lady in this story Rick got who eats junk food and gains weight and squashes her child in her sleep?... Gramma says she’s going to show me how a life is words and nothing else. Gramma says words

mentioned measurements plays in producing said action.

While there are many experiments that approach this question in ways similar to these described, most notably Libet, Haynes, Fried, and Hallett, I will be primarily focusing on those of Libet, Haynes, and Fried. In the 80's, Libet recruited nine participants and conducted 40 trials of requesting them to move their wrist at their own volition and report back to him the time that they "consciously decided" to do such. While this task was occurring, he was recording their neurophysiological activity with an electroencephalography machine. From this he was able to show that their individual Bereitschaftspotentials, or readiness potentials, occurred (on average) an entire 850ms before the reported sense of volition preceding wrist movement (200ms before the actual muscle

can kill and create. Everything" (Wallace 119-120). Her great-grandmother of the same name was an old understudy of Wittgenstein, who continuously and confusingly stressed to Lenore the question of what the most useful part of a broomstick is, the broomstick or the broom bristles: "Meaning as fundamentalness. Fundamentalness as use. Meaning as use" (Wallace 150).

Great-grandmother Lenore was in a retirement home and all the while running Lenore's thoughts with her antimonies and questions surrounding linguistics and meaning. Soon, feeling as if she had completely lost her "function" in society – leading to a loss of identity due to the Wittgensteinian notion of meaning as usage/function – great-grandmother Lenore escapes her retirement facility with some sort of "green book," leaving behind her blue

movement). Now, as most anyone could point out, this study was flawed in many ways - particularly crude means of measurements - but it also certainly provided a stepping stone for future studies and inquiries on such the large question. Because of the advancement of the technology surrounding fMRI, people like Haynes had the opportunity to run a very similar experiment while collecting much more accurate and indicative data. Haynes informed the participants that they have the option of pressing either the button in their left hand, or their right, at whichever time they choose. These participants were in an fMRI scanner throughout the entirety of the experiment, and it was found that a full seven seconds before the participants pushed either button, activity was seen in their Brodmann's Area 10, a region commonly associated with higher-level planning. The most and brown ones, alluding to some sort of development and improvement upon Wittgenstein's Blue and Brown Books with her own Green (Wallace 40). All of this to say, Lenore's entire life consists of, is defined as, and is even prescribed by words. Everything that she is made up of is predetermined by these words, whether it is her name (that of her great-grandmother's), the town that she lives in (that of her father's), her experiences (imposed upon by her great-grandmother), or even the "problems" that she faces (forced upon her by Vigorous) that dictates that she attend a therapist; nothing in Lenore's life is of her own construction, but instead prescribed upon by sources exterior to her, forcing this construct into a purely Wittgensteinian world. With that being said, in order to understand a world of words, one that

monumental part of this study was not only that Haynes could tell a full seven seconds before these participants when they were going to “randomly” press a button, but he also could determine, with significantly more accuracy than random guessing or odds would produce, which hand they were going to press the button with. Once the fMRI gave clear images of the more active areas of the brain while the participant was making the decision of which hand to press the button with, neuroscientist Itzhak Fried utilized these clear images and implanted an electrode in said areas within an epileptic population. Able to record single neuron action potentials, Fried was able to determine which hand they were going to use at an astounding 80% accuracy (Libet; Smith).

Although these exciting results may seem like they necessitate painting the participant into the realm of a

can seemingly dictate the running narrative of one’s life, one must always go back to the starting block: the word.

In many works of fiction there is a certain fixation around being able to control the usage of words, dictating what exactly the meaning behind someone’s name in a social setting is, telling stories about others, and even highlighting the truth behind fiction; but where exactly does this fixation take us and what does it tell us? Whether it is Humbert Humbert’s exclamation of *his* Lolita (denoting a very obvious although seemingly immaterial relationship of ownership and control) or Vigorous’ muttering of “So you do love me, then. I do have you, after all...Some words have to be explicitly uttered, Lenore...Some words can literally make things real” after painting a caricature of her life, I assert that this notion, this necessary narrative, is one

deterministic machine, there are many scientists arguing that the narrative, which was mentioned earlier on, is present in our minds at all times and can indeed affect physiological events occurring in our brains. Michael Gazzaniga provides us with an account that could potentially deal with this question: “[f]irst—and this has to do with the very nature of brain-enabled conscious experience itself—we humans enjoy mental states that arise from our underlying neuronal, cell-to-cell interactions. Mental states do not exist without those interactions. At the same time, they cannot be defined or understood by knowing only the cellular interactions. Mental states that emerge from our neural actions do constrain the very brain activity that gave rise to them. Mental states such as beliefs, thoughts, and desires all arise from brain activity and in turn can and do influence our

of attempted and usually successful imposed control. Reducing a character to a linguistic construct, to a single word, which you dictate, brings to mind Wittgenstein’s notion of meaning as use. Using a person’s name in a narrative, even one that you concoct or control, imparts meaning on this person that you are using as a construct. Just as Lenore’s great-grandmother stressed that the essence of the broom could be any aspect of it depending on the function of it, to utilize someone in a narrative in which they are conveyed as a two-dimensional construct is nothing short of forcing them into an instrumental role, a role that they have no control over and that is seemingly at the mercy of the narrator, not the world around them. Jay provides a perfect example of this while describing to Vigorous Lenore’s new lover: “My area

decisions to act one way or another.

Ultimately, these interactions will only be understood with a new vocabulary that captures the fact that two different layers of stuff are interacting in such a way that existing alone animates neither” (Gazzaniga 167-168). Gazzaniga asserts that we need an entirely new vocabulary in order to describe these mental states that have both top-down and bottom up components and constraints. John Doyle, a teacher at Caltech, notes in alliance with Gazzaniga that what we first need to shirk in order to understand this problem, is the urge to utilize Aristotelian categories, or more simply put - the urge to use language of causation (Gazzaniga 168). This language of causation is one that is very near and dear to us. The very fact that this is the case raises the problem of free-will itself, where most

is the fact that Lang constructs a Lenore, constructs her the way we each of course construct, impose our frameworks of perception and understanding on...[s]he is trapped and two-dimensional and unreal...Ah, but then he puts marks, *initials*, his initials on her, in her” (Wallace 343-344).

Although the notion of a top-down narrative forcing a role onto a single being is easily taken up, we must ask ourselves what the bottom-up role of the person has on that overarching narrative – if anything – and if that role has enough strength in order to alter the overarching narrative, enough to free the individual character from being forced into a construct, a 2-dimensional caricature. There are multiple relationships at play in this paradigm and they seemingly reinforce a feedback loop: the relationship

neuroscientists stake their claim that free-will is in fact an illusion. Gazzaniga gets at this problem with some very convincing scenarios, calling into question conscious volition: "As a person is walking, the sensory inputs from the visual and auditory systems go to the thalamus, a type of relay station. Then the impulses are sent to the processing areas in the cortex and then relayed to the frontal cortex. There they are integrated with other higher mental processes and perhaps the information makes it into the stream of consciousness, which is when a person becomes consciously aware of the information (there is a snake!). In the case of the rattler, memory then kicks in the information that rattlesnakes are poisonous and what the consequences of a rattlesnake bite are, and I make a decision (I don't want it to bite me), quickly calculate how close I am to the

between the actions of the individual and the role that they play in the narrative (for example, any move that Lolita makes early in the novel reinforces the sexual hue that HH sees them in), the actions of the narrative and how they play with the individual (when one is told that they are a failure their entire life, they are more prone to be more critical on even their successes than others), and the words of the narrative and how they play with the construct of the individual (when describing a person to a stranger, the narrative of that person being described is the only source of the construct of this person) (Nabokov). I propose that the most effective way to deal with these interactions is to analyze the power relationships that are created in between characters in a narrative; more specifically, which interrelationship has the most dictating

snake and its striking distance, and answer a question: Do I need to change my current direction, and speed? Yes, I should move back. A command is sent to put the muscles into gear and then do it. All this processing takes a long time, up to a second or two, and I could have been bitten while I was still in the midst of it. Luckily, however, all that doesn't have to occur" (Gazzaniga 76). The brain instead takes a shortcut through the amygdala and the conflation of this neurophysiological event is the invocation of the interpreter – all the while lacking the need of a micro-interpreter. We speak of and experience all of these situations as reflexes and as if there is a cause and an event, but this is where we are clearly lacking in our vocabulary.

Before we can start looking into how exactly our vocabulary is the thing that is holding us back, we must first

power, which one can override all of the others in the end.

When the individual (the subject of a proposed narrative) interacts with the narrative (or more aptly the one telling the narrative) there is a strong area of disconnect. Say the individual acts against the proposed narrative; there is the strong possibility that they will do nothing but evoke a strong reaction, an attempt at lessening the dissonance present. "Whatever evolution this or that popular character has gone through between the book covers, his fate is fixed in our minds, and, similarly, we expect our friends to follow this or that logical and conventional pattern we have fixed for them. Thus X will never compose the immortal music that would clash with the second rate symphonies he has accustomed us to. Y will never commit murder. Under no circumstances can Z

look at a phenomena termed “emergence,” a concept that has been discussed since the time of Aristotle (Aristotle). “Emergence is when micro-level complex systems that are far from equilibrium (thus allowing for the amplification of random events) self-organize (creative, self-generated, adaptability-seeking behavior) into new structures, with new properties that previously did not exist, to form a new level of organization on the macro level” potentially giving rise to what we perceive of as the mind (Gazzaniga 195). Just as a steady collection of cars in a city can give rise to an instance of a traffic jam, which is almost self-sustaining and necessarily has completely different characteristics than the cars themselves, so purportedly can (purportedly) individual neurons give rise to a mental state, an interpreter, or a consciousness, that has completely

ever betray us” (Nabokov 265). Therefore, the effect that this counterintuitive action has on the narrative as a whole can almost only be seen as counteractive to the notion of an individual “correcting” their own narrative. Let’s say the individual acts in agreement with the notion that the narrative propagates; the problem here is that of causation. It is not known whether the action is the cause of the narrative or the narrative the cause of the action, leaving this notion incredibly ambiguous; for example, when Lolita sits on HH’s lap in a sexual manner, is it because this is the actual act that she chooses to do and the connotation that she wishes it to have, or it is because the narrative forces this hue on the act of Lolita? Although this notion is ambiguous, there are still insights to be gained within the thought of self-fulfilling

different characteristics and properties than the neurons themselves. If this statement is true, it may be feasible that this account of emergence provides us a way out of the problem that is the interaction of the mental state downward on the neuronal makeup. Gazzaniga's argument from analogy is the only thing that allows him to hang onto this hope: "What has become obvious to most physicists [...] is that at different levels of structure, there are different types of organization with completely different types of interactions governed by different laws, and one emerges from the other but does not emerge predictably. This is even true for something as basic as water turning to ice, as physicist Robert Laughlin has pointed out: Ice has so far been found to have eleven distinct crystalline phases, but none of them were predicted by first principles!" (Gazzaniga 197). What his prophecy.

The strongest of the three interactions though, I propose, is that of the metaphysical interaction of the narrative on the construct of the individual. Though a construct (usually defined as an idea formed in people's mind) of a person can be formed in the mind of said person themselves, the most predominant usage of the identity construct lies outside of the individual's mind. Usually, this identity is only to be formed and utilized by someone that is not that person, leaving the person himself or herself without control over this construct. When one is told a story about (John did this, John did that) there is no locus of volition, the individual being told about and constructed is nothing but a victim of the language being used in the narrative being provided about them and its purposes for the teller. Meaning

provocation of the imagery of water does as use.

to the problem of top-down causation is Although this is seemingly the

nothing short of a Texas sharp-shooter case, I assert that there is a larger

fallacy¹. By stressing the similarities of a structure outside of the narrative that

neuron giving rise to the mental state gives rise to a certain feedback loop,

and water giving rise to ice (even which has the potential to have the

different and unpredictable forms of ice) most power over both the narrative

he is pulling the reader's attention away and the subject of the narrative. The

from the problematic notion that, yes, narrative world in which this narrative,

these both give rise to one another, but by necessity, must take place provides

if we are looking at the top-down an entirely new layer, which we must

causation we are talking about two disassemble in order to understand the

completely different things. To say that relationships at play below it. Just as a

the ice can affect the water that word must be used in a certain context

constitutes it is a more logical and in order to be sensible, so must the

intuitive statement for it follows that narrative. This meta-narrative that

material can indeed affect material, but incases the individual narrative can

to stress that a mental state can affect take many forms in literature. In some

the underlying neurological mechanisms cases it can almost simply be boiled

is asserting something much more down to the setting that surrounds the

dangerous and problematic: the narrative - take the post-Hiroshima

immaterial can affect the material. Now, setting that dictates the endeavors and

¹ The Texas sharp-shooter fallacy is the act ignoring the differences inherent in data in order to stress similarities; e.g. a Texan shooting the side of a barn and painting a target over the most prevalent cluster of bullet holes.

the evident rejoinder would most likely be that “well, yeah, but the main point of the phenomena of emergence is that it DOES have the ability to change the properties in the process.” This is seemingly problematic once one takes heed to the fact that we are only able to account for mental states in subjective explanations and neurological activity underlying them. Though this notion might at first seem troublesome, I assert that we must look to other pertinent structures in society that might either resolve this discrepancy, or at least help to parse out the details of it, in order to, hopefully, start to be able to clearly see the feedback loops that are present in the brain and the world surrounding it.

Although it is conceptually simple to start with the neuron and go up, we must not forget the input that must occur in order to result in these neurons firing. At every instant we, as conscious

drives of John/Jonah in Vonnegut’s *Cat’s Cradle*, or even just the effect of the global political climate of southern France for Humbert Humbert in *Lolita* (Vonnegut, Nabokov). But even more abstracted than the setting itself, there are the social practices that surround the narrative – such as the subversive nature of San Lorenzo towards Bokononism in *Cat’s Cradle*, which frames and formulates Jonah’s initial reaction to boko-maru (the religious act of two people pressing the naked soles of their feet together, in order to evoke mingled and joint awareness and enlightenment) (Vonnegut). These various contexts must dictate and interact with the underlying narrative in ways that necessitate a change the nature of the narrative itself.

This feedback loop that I am proposing seems to raise one large question: is it possible (or even

beings, are being bombarded with perceptions and even psychological imperatives from the society and social structures that inevitably surround us. Though some of these are material, architectural structures, pathways, and public transport, there are also many immaterial structures that we must interact with in every instant. Some of these immaterial structures, while still giving rise to material structures, consist of ideological biases imposed by culture, social norms, laws, and even preconceptions. All of these immaterial structures come loaded into the perception of the world around us - how we experience our surroundings as a whole. These perceptions, in turn, are necessarily substrates of a larger feedback loop, which includes the neural level in our brains.

What exactly would this feedback loop look like though, and how does it

sensible/justifiable) to make logical a single narrative in the absence of the other narratives within the feedback loop? Let us explore a few examples in order to further understand this question (see figure 1). First, we will take a look at a meta-narrative that seemingly surrounds every relationship and other narrative in *Lolita*: the setting of the scene. The surrounding space is a necessary realm in which every other narrative must occur. From here we will then look at the invisible structures that feed into the narratives that we are analyzing. Some of these invisible structures include simple things such as social norms, and more complex things such as the way that romance with a younger girl is treated and therefore tinted to those that have any connection to it. These social norms and expectations feed into the actions

provide enough response in order to amend its own neural substrates? Take a normal situation for an example: you are sitting at a coffee shop. Continuously you are receiving a stream of perception, but with that perception comes an inseparable amount of information regarding the social situation surrounding you, not only the perceivable information but also the underlying information. Every action that you take from that moment on feeds right back into this loop; as soon as you commit to an action you are forced to see this action within the social information that is underlying the situation, completely changing the possible perception of even your own action.

Though we can further our understanding of these perceptions and how our brains respond to the underlying information that is contained

of Lolita (the person), Humbert Humbert (HH), and the narrative that HH provides us of Lolita (the construct).

For example, whenever HH drops by Lolita's house (the surrounding space and context) on Hunter Road to find her pregnant and married, there are multiple narratives present that are forcing him to act the way he does. Knowing that he cannot personify Lolita as his early sex-slave to her new husband, HH takes on the role of her father; while this isn't necessarily a false role, it is one that is certainly undermined by the master role that he more predominately personifies himself with. It wasn't until Dick, "Dolly's" husband left the room that HH could resume the role of jealous ex-lover and force out of Lolita the name of the lover that took her away from him: Quilty (Nabokov 274-

in every situation by studying further the lower substituents in the brain, I assert that with the complication of emergence we must not only take the more prevalent bottom-up notion of constraint into account, but also the potential top-down/bottom-up interactions that are happening behind the scenes. Though some of these complicated interactions are undoubtedly being looked into in very important ways (such as the study of the effect of abstract belief systems on readiness potentials and perception of voluntary behavior) I assert that we must also look into the phenomenological reality of the consciousness at an individual level to further understand these interactions in a more holistic way (Rigoni et al.).

277). Within the social norms present in this situation, there is the demonstration that HH cannot even view Lolita as the same construct, but instead deems her Dolly. Within different context, there is inherently different meaning. With these structures in mind, we can now turn our attention to a single example of the young Lolita's (the person's) actions and how the narrative that HH provides affects them. These actions feed into HH's narrative, but they do so in a very peculiar way; while they might be innocent in nature – childish acts and movements – they are still tinged by the nature of HH's narrative itself, and therefore they create a sort of feedback loop, which changes the perceived nature of these actions all together. "I was sitting, Humbert the Hoarse put his arm around her in a miserable imitation of blood-

relationship; and still studying, somewhat shortsightedly, the piece of paper she held, my innocent little visitor slowly sank to a half-sitting position upon my knee. Her adorable profile, parted lips, warm hair were some three inches from my bared eyetooth...All at once, I knew I could kiss her" (Nabokov 48). Now, with these actions tinted and hued in the favor of HH's running narrative (thanks to cognitive bias), there is the possibility for HH to create an entirely new Lolita, the construct of Lolita.

Although the narrative itself can have an effect on the nature of Lolita's actions, it seems like Lolita (the construct) is the only connection and entity that is created by a single stream and unable to affect any other relationship or narrative. The actions are painted prior to perception for HH, therefore when this narrative creates in

his mind the construct of Lolita, there is no hand in the game but his own narrative. “In point of fact, there might have been no Lolita at all had I not loved...[w]hat I had madly possessed was not she, but my own creation, another, fanciful Lolita – perhaps, more real than Lolita; overlapping, encasing her; floating between me and her, and having no will, no consciousness – indeed, no life of her own” (Nabokov 9, 62).

We must not forget, though, that in the outcome of this story no one is able to escape these top-down constraints of narratives, not even HH. HH notes this towards the very end of his own story: “This, I said to myself, was the end of the ingenious play staged for me by Quilty” (Nabokov 305). Now that we have a certain idea of what a top-down narrative can do and necessarily does do to a

construct, we must in turn ask what the narrative can do for an individual and whether or not there is a significant difference between the two, and how we ought to perceive our own narratives that gives rise to these constructs.

Convergence

“For while the passage of light into the brain is an instance of standard physical causation, the gaze that looks out most certainly is not” (Tallis).

Commonly pitted against each other instead of used together in order to augment the implications that each realm holds, the neuroscientific and linguistic accounts of narrative and free-will actually have quite a lot in common and can build upon each other. As referenced above, Tallis makes the assertion that although there is the presence of the standard account of physical causation within the act of perception and the brain, there is still a disconnect in-between that and the way that the mind colors the perception itself. From this assertion we must be pushed to ask a series of questions: Does this gaze account for the human will? Does this gaze color perception in ways that have causal implications that can be mapped on reality?

Though Nietzsche’s view of the will and consciousness is a topic of much debate, it certainly serves as a useful stepping-stone in comprehending what we are dealing with in terms of narrative and will. Many have spent time arguing that Nietzsche’s will is that of an epiphenomenal meta-effect, that is, lacking any sort of causal efficacy in terms of will (Leiter). The more thorough and seemingly logically consistent reading of Nietzsche’s works yields an entirely different picture though; Nietzsche’s will is that of an incremental and microscopic nature. What Nietzsche asserts, which is seemingly in line with Tallis’ view of the gaze, is

that although the faculty of consciousness (the “I” willing) is worth critique, the causal efficacy of it is not.

With the assertion that “what really arouses indignation against suffering is not suffering as such but really the meaningless of suffering,” Nietzsche is seemingly making the claim that what moves us “is not sensation as such, but sensation coupled with a thought about its meaning” (*On the Genealogy of Morality* II.7 & Katsafanas 202). So, following the common conception of a feedback loop, the implications follow that any perception (“passage of light into the brain”) is meaningless and has no value that can be mapped upon it until it reaches the realm of the consciousness, which in turn can create the personal narrative (an act of categorization, an evocation of meaning, “the gaze that looks out”) that can run alongside the action, and provide meaning. There are two helpful examples that Katsafanas gives us in order to more easily understand this notion. The first example is that of exercise. Exercise, to the extent that it brings pain and tiredness to people, is something that is contingent upon the nature of the person’s consciousness that it is colored. Some people love the pain and anguish so much that it becomes an addiction, whereas others cannot even stand the thought of it. The second example provided is sex outside of marriage in religious populations and non-religious populations. The same physical act is committed, yet one’s consciousness is able to color the act in a way that it haunts the person with guilt, whereas the other can see it as an act of pure joy. But what are the constituents of this consciousness and what can affect it?

Though Nietzsche argues that unconsciousness is a realm of nonconceptually articulated content, he still supports the notion that such has an effect on the conscious states that can arise. If one has an unconscious state that is of a certain mental-affect, this, in essence, changes the perception of the conscious state itself. Therefore, in order to start willing and start changing the conceptual content that arises within the conscious state, we must first attack the unconscious. This is where Nietzsche's case for incremental willing takes form.

Motives causally impact the conscious experiences related to willing, which in turn causally influence the motives; out of this process, we get a potentially reconfigured set of motives, with new motivational propensities. This new set of motives might again causally influence the conscious experiences related to willing and so on. Action results from all of this.

(Katsafanas 206)

So, this entails that “we have to learn to think differently – in order at last, perhaps very late on, to attain even more: to feel differently” (*Daybreak* 103). I will return to my previous examples of sex and exercise in order to more clearly explain this quote. If we are to “learn to think differently... in order ... to feel differently” in the realm of exercise, we could instead focus on the fact that we are bettering ourselves and our bodies, have this constantly in our mind, and

start to associate the pain brought about by extreme exercise to this bettering. Once this association is steadily in place, the pain will be only a feeling of bettering and will be felt and perceived in a completely different way. The sex example also works accordingly: Take for example a young fundamentalist that holds pre-marital sex as one of the largest sins that one can commit in their young lives. Say they slip up and find themselves in a situation in which they are partaking in such the activity. This partaking will be filled with all sorts of feelings of remorse and regret, not to mention the lasting guilt that will follow the activity. Now, picture the same person a year later after they shirked their radical faith. As long as there are no lasting ties of religious guilt, this activity would play out completely differently. The person would partake in the activity, feel differently during it, perceive differently during it, and, in turn, *be* different during it. It is important to note though, that these transformations of “being” differently are not of immediate nature, they are instead long incremental processes that take a lot of conscious effort; the once fundamentalist person does not just shake all notions of religious guilt in one conscious thought, but instead works on it for long periods of time, only to finally be and feel different. This is the nature of the incremental will – which, as we will see, runs parallel to our contemporary notions of Cognitive Behavioral Therapy, yet seemingly happens at a more individual and self-conscious level.

Though the notion of an incremental will is a complicated one, we must be pushed to put this in conversation with what we are able to do with the narratives

that we provide ourselves and others. Nietzsche, yet again, gives us a way to look at the power that is inherently present within narrative and construct:

Only as creators! – This has given me the greatest trouble and still does: to realize that what things *are called* is incomparably more important than what they are. The reputation, name and appearance, the usual measure and weight of a thing, what it counts for – originally almost always wrong and arbitrary, thrown over things like a dress and altogether foreign to their nature and even to their skin – all this grows from generation unto generation, merely because people believe in it, until it gradually grows to be part of the thing and turns into its very body. (*The Gay Science* 213)

What this aphorism forces us to recall are a few things already discussed: Lenore's conception and struggle as a linguistic construct, Wittgenstein's meaning as use, the sometimes problematic narrative that our own brain provides in order to explain situations that occur outside of us, the power of our own incremental will in destroying and creating constructs, and culture's incremental will in destroying and creating the same things. This ability to will a meaning (in even a single usage) and have it "gradually grow to be part of the

thing and turn into its very body,” certainly carries ethical implication with our capacity to will a narrative or even the notion of an individual’s psyche; but, what exactly must we be held responsible for in the mere act of concocting narratives on a daily basis? Amongst many others, Slovenian philosopher, Slavoj Zizek, has touched on this notion:

What if, however, humans exceed animals in their capacity for violence precisely because they speak? As Hegel was already well aware, there is something violent in the very symbolisation of a thing, which equals its mortification. This violence operates at multiple levels. Language simplifies the designated thing, reducing it to a single feature. It dismembers the thing, destroys its organic unity, treating its parts and properties as autonomous. It inserts the thing into a field of meaning which is ultimately external to it. When we name gold “gold,” we violently extract a metal from its natural texture, investing into it our dreams of wealth, power, spiritual purity, and so on, which have nothing whatsoever to do with the immediate reality of gold. (Zizek 52)

The ongoing example of Lolita can help clarify Zizek's point. Just as language simplifies, destroys organic unity, and treats one aspect of an intricate thing with parts and properties as autonomous, HH reduces and simplifies Lolita into a single entity, a two-dimensional character (reminiscent of Lenore), that of a prepubescent sex object. The entire organic unity of Lolita, a normal and innocent child living out her life and acting as any child would, is stripped and in turn made into the autonomous sexual entity that HH chooses. Akin to how our usage of gold as describing an earth metal has steadily turned into a word filled with notions of greed, power-struggle, and other completely irrelevant and tainted attributes, so has HH's usage of Lolita's name and construct within the narrative of his own desire changed from person to sexual object. Whenever the thought of Lolita comes to mind, it must be put into reference with this field of meaning that encompasses the non-organic simplified "Lolita." In doing this, as described in the figure below, every action Lolita makes must be misconstrued in order to fit within this pre-existing framework and field of meaning. The real nature of the childish Lolita is violently taken from her and instead imposed upon with HH's sexual desires, just as humans impose irrelevant ideas into the element of gold. This is showcased very clearly even on the first page of the novel itself which was referenced earlier on: "She was Lo, plain Lo, in the morning, standing four feet ten in one sock. She was Lola in slacks. She was Dolly at school. She was Dolores on the dotted line. But in my arms she was always Lolita ... In point of fact, there might have been no Lolita at all had I not loved, one summer, a certain initial girl-child" (Nabokov 9). As we can see with both the case of gold and the

case of Lolita, there is something violent and seemingly problematic surrounding the nature of our own consciousness and creation of language. We must be pushed to ask though, what are the implications? If this is indeed the nature of language, and in turn the nature of the brain, why does it matter if we can't even avoid it? Before going into the more inherently violent aspects of language, it would be worthwhile to look at some of the better sides.

Though Nietzsche is using this passage in his infamous Birds of Prey aphorism to get at a completely different point than I am, I still find it helpful in terms of understanding the inherent seduction of language:

A quantum of force is simply such a quantum of drive, will, action—rather, it is nothing but this very driving, willing, acting itself—and it cannot appear as anything else except through the seduction of language (and the fundamental errors of reason petrified in it), which understands and misunderstands all action as conditioned by something which causes actions, by a “Subject.” (*On the Genealogy of Morality*, Nietzsche)

Because we are able, and almost forced, to perceive actions as dealt out by individuals, or “Subjects,” we must understand this action through the seduction of language. This seduction of language, though Nietzsche paints it as solely superfluous and irrelevant to driving, willing, or acting, is how we are able to

perceive these acts as positive or negative. This seduction is why we are able to smile at a surprising compliment, put the amorphous organic reality of love into words, conceive of abstract family, make compelling arguments within essays, or even blush at a dialogue given by a significant other. Without language there would be no romantic hue to actions and there would be no form in which to discuss the role of narratives within our own lives. With that being said, this obviously does not free us from the more violent aspects of language, nor remove the imperative to explore these aspects and implications.

Our Imperatives

Though the notion itself is seemingly strange, I assert that with the imperative to avoid more extreme cases of symbolic violence, we must be pushed to incrementally change both the conscious and unconscious states that can arise within our mind. As we saw with Gazzaniga's split-brain patient there is some sort of tendency for narratives and thoughts to just "arise" without even willing them. As we saw, this was not only present in a neuroscientific analysis of running consciousness, but also within Nietzsche's explanation of it as well; no matter what field we use to approach the questions surrounding narratives, there are implied imperatives present – change the neural correlates that give rise to affects, change the verbal constructs that can arise violently, and in turn change the narratives that can arise with said affects and constructs and vice versa. What is evident is that we cannot avoid these imperatives, for even if we are to grant that these narratives and immediate perceptions can arise without the "I" willing them, we still cannot shirk the responsibility that comes with the gaze that looks out. As Libet notes, "we may view voluntary acts as beginning with unconscious initiatives being 'bubbled up' by the brain. The conscious will would then select which of these initiatives may go forward to an action, or which ones to veto and abort so no motor action occurs" (Libet 139).

With our presumed ability to color every perception that arises within the brain (even if we grant that said perception is out of our immediate control) we can now see where the responsibility lies on a personal basis. There is seemingly a natural imperative to analyze both the perception and the narrative

that follows in order to see its potential accordance with the narratives that surrounds us. With this accordance to various narratives (or lack thereof) comes an urge to work within our own narratives in order to change them, leaving open the possibility that the next time the perception arises, a different narrative will follow, perhaps filling in the gaps of discordance amongst relevant narratives. It is worth noting that this sense of dissonance and discordance found within the various narratives and metanarratives that make up the perception of our lives, is exactly where I assert that the ethical imperative lies. It is not the ethical imperative that drives the feedback loops present in our lives, but instead it is the feedback loops that create the urgency of the ethical imperative of clarifying our own narratives.

For example, upon arrival at Regis, my running narrative of everything having reductionist and deterministic roots constrained the thoughts that could arise with new information. Because of these foundations, I was unable to entertain deeper ideals of value, emergence, and perception without just jumping to the reductionist interpretation and calling it all malarkey. This was so for a couple of reasons. The main reason was the overarching narrative of social relations. I was constantly surrounded by students and teachers providing different narratives, that caused me, in an unconscious attempt to play into the narrative surrounding social cooperation, to entertain and attempt to harmonize with my own, even if I didn't seem to agree with them. Because I have steadily been able to form and shift the thoughts that arise in my mind (upon notice of seeming discordance with the narratives around me), I am left with a much more

open perception of new ideas, leaving me able to more fairly and more comprehensively bring different notions into conversation with each other. With that being said, we must keep in check not only the narratives that we perceive but also the constructs used within these narratives. Knowing all too well that every single construct that is used within the running narrative of our mind entails the same implications of the word “gold” in Zizek’s example, or Lolita in Nabokov’s, we can take a much more aware and meticulous approach to the problems that are inherent in the mere act of language or consciousness.

Now that we have a clear understanding of what language itself does to a person or a construct, we must ask what it does in terms of one’s free-will. When one is used in a narrative, fiction or consciousness, there is a sense of constriction that is implied without any consent by the one being spoken about. This constriction is metaphysically confining the person into all of the things that are implied with the name itself. By constricting that person themselves, we are inadvertently taking away the extent to which this person can enact their own will.

Though, as argued before, the will is incremental, there is still reduction in this will when one can be restricted into a construct without even knowing about it (Thus X will never compose the immortal music that would clash with the second rate symphonies he has accustomed us to. Y will never commit murder. Under no circumstances can Z ever betray us...) (Nabokov 265). So what can we do? As mentioned above, there is a conscious screening effort that must take place; but what exactly is this screening method supposed to do, and how does it affect the brain? If we are to take the notion of emergence seriously, and grant it

the attribute that it can in fact interact with the neural correlates beneath it, we can start to see how this view of incremental will is starting to make sense on both a philosophical and neuroscientific approach. When one changes the conscious state that is invoked when a construct is used or when a situation occurs outside of them, this, purportedly, will have downward causal effect on the neurons beneath the emergent state of consciousness. If we grant that this emergent interaction is both realistic and causal, then we are able to infer that this causality would evoke a change in the neuronal connections that lie as constituents within this emergent state. If this is the case, then the old adage that “neurons that fire together, wire together” is extremely pertinent to what exactly this incremental will looks like. Because the emergent state will cause neurons to either fire or stop firing in a certain pattern, this will in fact change how they are wired together (either strengthen/weaken the connections between them). With a different wiring of the neurons that give rise to the emergent effect that we are calling consciousness, we can venture to say that this different wiring will give rise to a novel emergent state of consciousness. At this point, anyone particularly familiar with different types of psychological therapies will notice that this is perfectly aligned with Cognitive Behavioral Therapy, a therapy that has been used to treat psychological ailments from depression, bipolar disorder, and anxiety all the way to PTSD (INSERM). All of this to say, Nietzsche’s view of the incremental will not only has moral implications in terms of how we construct narratives and thoughts, but also aligns quite well with contemporary neuroscientific explanations as to how neurons interact with each other, and

even some conceptions of the will (Gazzaniga). With this in mind, we are able to enact incremental will on a daily basis in order to offer ourselves a sort of micro-Cognitive Behavioral Therapy, one which will not necessarily be aimed at curing mental ailments, but instead directed at shaping what we deem as the self on an incremental basis.

Though it is assumed quite often that the realms of neuroscience, philosophy, linguistics, and the humanities have only little overlap in areas that most see as quite trivial in the big scheme of things, I assert that this analysis regarding narrative, incremental will, linguistic constructs, and imperative gives a strong counter argument to this notion. For example, if one were to never give a philosophical reading to the notion of language as violence, there is the chance that they would never give thought to the implications behind the constructs we use in terms of the incremental will, and then would never think differently in order to be different. The philosophical analysis leads to the linguistic analysis, the linguistic analysis leads to the psychological introspection, and finally the psychological introspection leads to a change in the neuronal correlates. If we can use this example as a sort of groundwork in which supposedly different realms can interact in order to create ideas much larger than themselves, then and only then can we keep creating cross-field ideas that are relevant to all of society. One large question is left: Although we might realize our own discordance and work towards a more well informed view of the narratives that form our lives, how might we best urge those that are set in their own ways to question and prod their own running narratives? How can we lead them to

question the meta-narrative(s) that can form all that is below it/them in order to maybe urge the realization of the importance of combining all of these fields?

This question and the urgency that follows from it is exactly where I hope to head with further research. While I have a slight idea that the answer lies within the exposure of children to dissonance within their earlier years, this thesis is not the place to expand on the question, but instead to pose it in order to hopefully approach it more deeply in years to follow.

A Final Look back

At the beginning of this thesis I set out to accomplish four goals: 1) To adequately and fairly bring in viewpoints across the spectrums of multiple fields. 2) To showcase the importance and fruitfulness of bringing in fields that are normally seen as dichotomous on the subject at hand. 3) To walk away with not an answer, but a more well informed viewpoint on the subject, leaving me more conscious of the implications of my actions upon this world. 4) To leave with a question worth following up on after the “conclusion” of my thesis. In my eyes, all of these goals have been accomplished in multiple ways: Linguists, philosophers, psychologists, authors, poets, and neuroscientists have been brought into conversation with each other in order to yield not a conclusion, but a more well informed and parallel realm of creation in which to ask questions and seek answers. I can walk away from this thesis with a more keen awareness in the ways in which I utilize language and narratives, all too aware of the implications that each have both on my own consciousness and others’ consciousness. With this more honed awareness, I am now left able to explore more honestly how I ought to convince others of the fruitfulness of welcoming more realms of thought into their own, yielding a community that is not only more open to different ideas, but also more comprehensive with their own.

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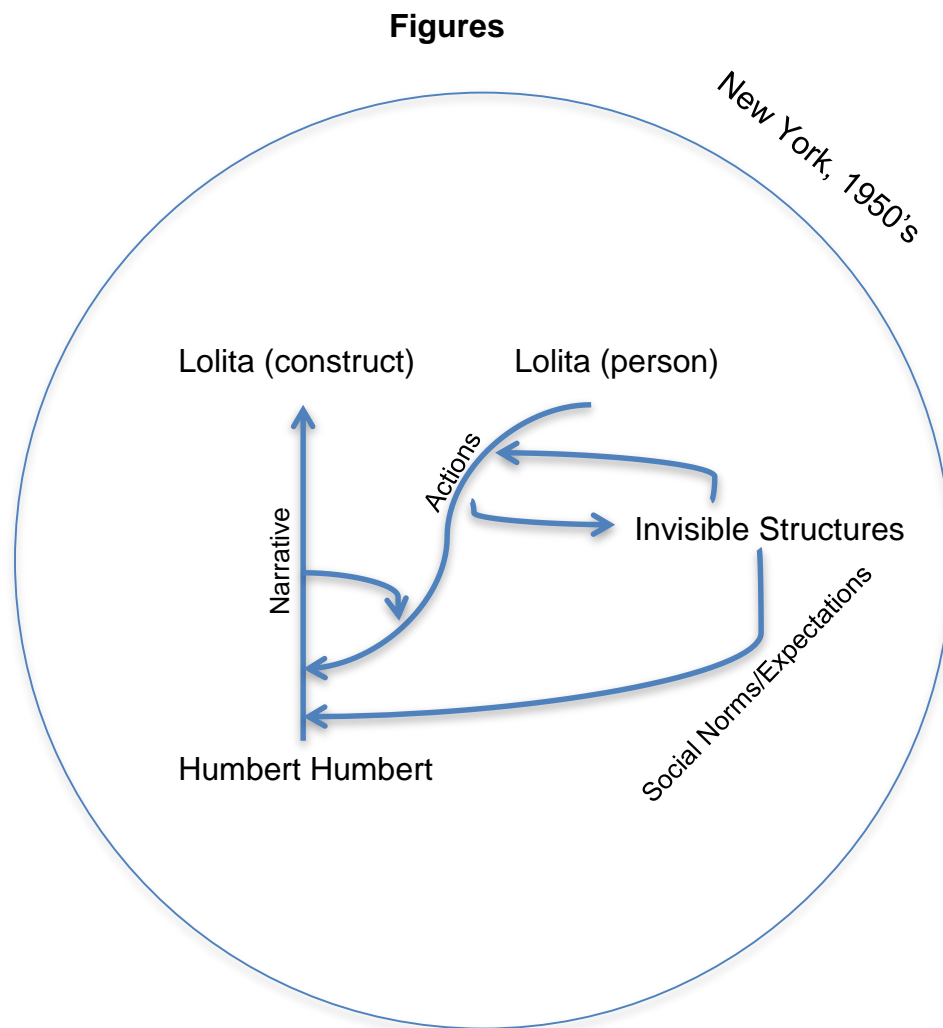


Figure 1. This figure explores the various ties in relationships and actions that are present in Nabokov's *Lolita*.