

“State of Nature”

By Dylan Connell



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The infinite Imagination led to a maddening labyrinth of bent frustration with a reality fake and augmented by blatant complacency to patience with tasteless debasement

But awakened lies the mind, finding frontiers far distant and undefined, unconfined by undermined "designs" of the Humankind. Rather, the sums refined

Reinvented from breaking spines, to standing tall, no commanding fall, no damning all to a spanning wall, an enclosure,

Instead the new species is given far more exposure to the clouds flowing over, to the rose and the grower, the molder of the garden.

Cause deep in the human heart is a flickering spark called the artistic... instinct, and if realized the genes link giving the pen's ink the stroke of a Vincent,

But the impulse is burdened, most walk around failing to realize the words spoken and heard in a different code than the version determined by the ones who are herdin' the masses,

So, one must look past the curtains and masks to observe the surface like glass... and gaze beneath it

Cause under the mystery is a unique bliss, the Self hiding a secret.

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മുഖ്യമായി ഉൾപ്പെടുത്തിയിട്ടുള്ളതാണ്. ഇതിൽ ഉൾപ്പെടുത്തിയിട്ടുള്ളതാണ്. ഇതിൽ ഉൾപ്പെടുത്തിയിട്ടുള്ളതാണ്.

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² DNA methylation is a process by which methyl groups are added to the DNA molecule. Methylation can change the activity of a DNA segment without changing the sequence. When located in a gene promoter, DNA methylation typically acts to repress gene transcription.
³ Histones can impact gene expression by altering chromatin structure without actually changing the underlying genetic structure.

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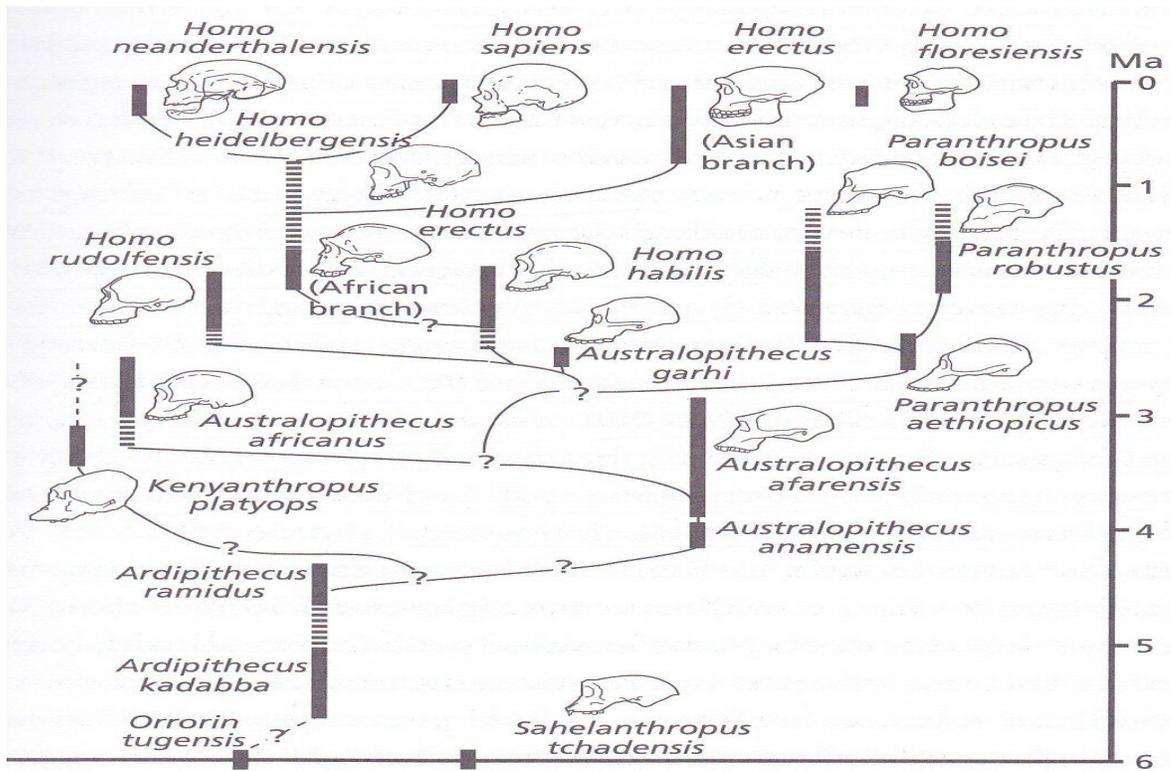
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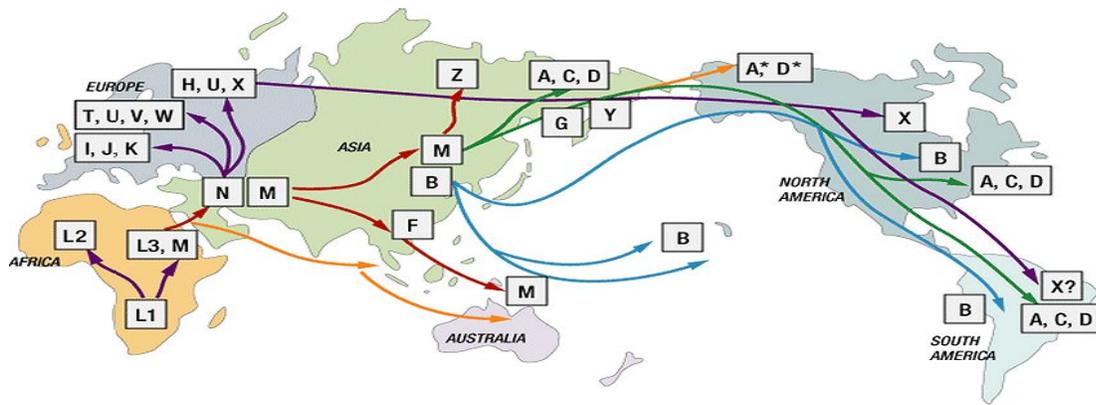
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EXPANSION TIMES (years ago)	
Africa	120,000 - 150,000
Out of Africa	55,000 - 75,000
Asia	40,000 - 70,000
Australia/PNG	40,000 - 60,000
Europe	35,000 - 50,000
Americas	15,000 - 35,000
Na-Dene/Esk/Aleuts	8,000 - 10,000

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Nuclear DNA vs. Mitochondrial DNA

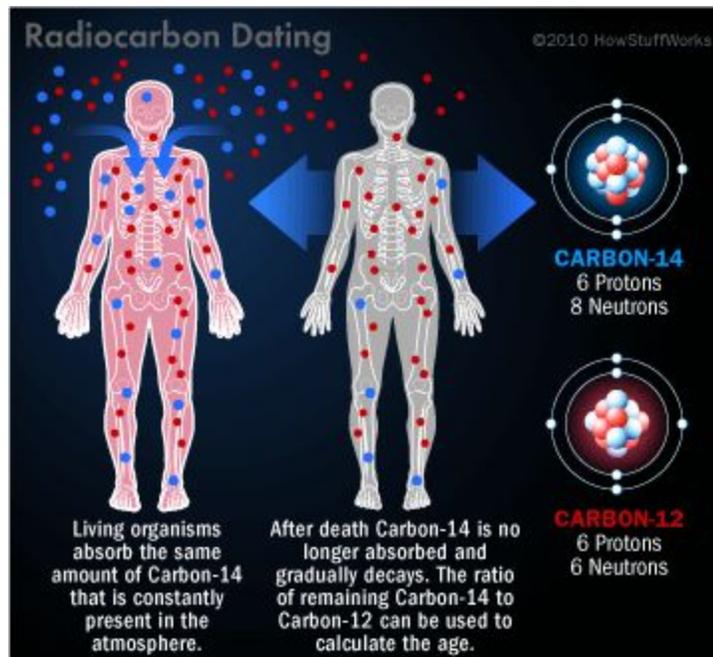
• Nuclear DNA

- found in **nucleus** of the cell
- 2 sets of **23 chromosomes**
- **maternal and paternal**
- can "**discriminate** between individuals of the same maternal lineage"
- **double helix**
- **bounded** by a nuclear envelope
- DNA **packed** into chromatin

• Mitochondrial DNA

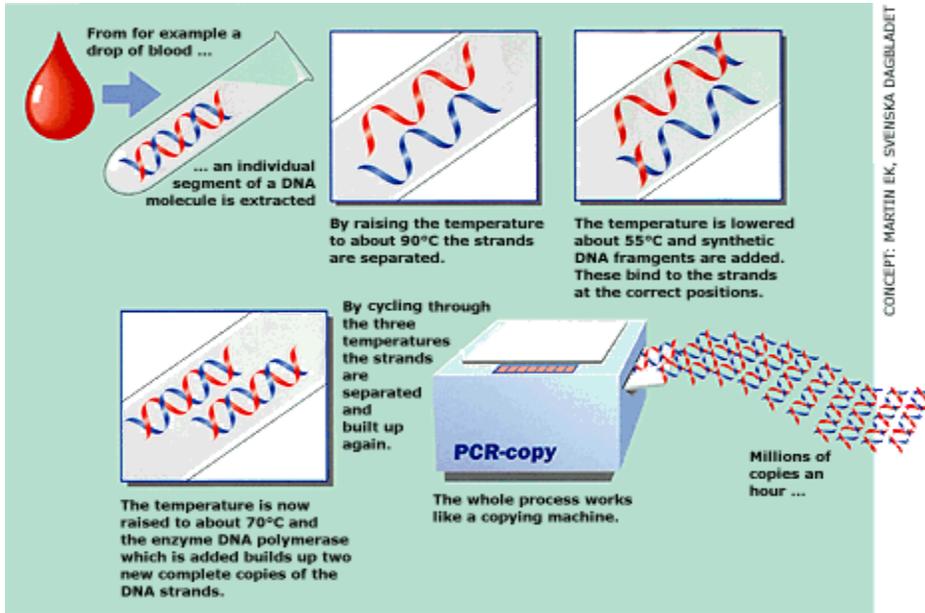
- found in **mitochondria** of the cell
- each mitochondria may have **several copies** of the single mtDNA molecule
- **maternal only**
- **cannot** "**discriminate** between individuals of the same maternal lineage"
- **Circular**
- **free** of a nuclear envelope
- DNA is **not** packed into chromatin

jitencleranduat@gmail.com



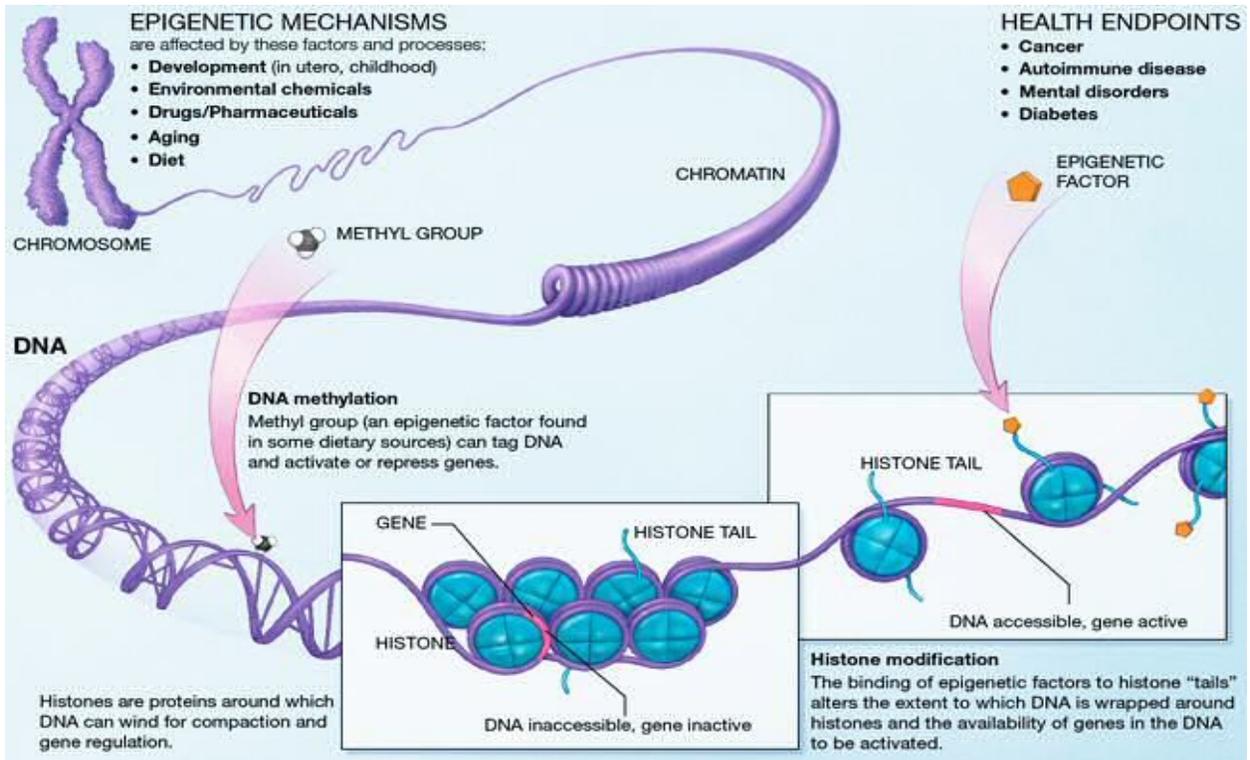
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How CRISPR Hacks DNA

Some bacteria have evolved a powerful system, called CRISPR, to defend them against viral infections. When a virus strikes, the bacteria copy and store a short, identifying sequence of the virus's DNA—a sort of genetic "memory card." If the same virus attacks future generations of the bacteria, they use the memory card to guide a killer enzyme to the identical sequence in the new invader and cut it away. Scientists have co-opted this natural molecular machinery to not only turn off the action of a gene but also to insert new genetic code into living organisms, including humans. CRISPR has sparked an explosion of research—and a heated ethical debate.

HOW IT WORKS IN NATURE

Researchers studying how viruses infect bacteria discovered a natural immune system that cuts the invader's DNA.

- 1. Genetic memory card**
When a virus attacks, a bacterium copies and stores a segment of the virus's DNA sequence.
- 2. A new attack**
When the virus invades again, the memory card generates a copy of itself called guide RNA that will seek out the same sequence in the attacker.
- 3. Arming the defense**
The guide RNA recruits an enzyme called Cas9. Together, as CRISPR-Cas9, they scan the viral double helix, looking for a marker that identifies the matching sequence.
- 4. Cutting the code**
When the marker is found, CRISPR-Cas9 unzips the sequence and cuts the viral DNA, degrading the virus and preventing it from reproducing.

HOW IT'S HARNESSSED IN THE LAB

Scientists realized they could adapt this mechanism to disable genes or insert DNA into any organism.

- 5. Hacking the system**
Scientists manipulate the CRISPR system to disable genes by programming CRISPR-Cas9 structures in a lab. They then insert them into organisms to seek out and snip DNA, disabling genes for traits like diseases.
- 6. Editing the genome**
To edit a gene, template DNA, also engineered in the lab, replaces what's been cut. In this manner, a trait can be programmed in a lab and inserted into the genome.
- 7. Unlimited possibilities**
Scientists can alter and edit any genome that has been sequenced quickly, cheaply, and efficiently.

APPLICATIONS FOR CRISPR TECHNOLOGY

Altering Ecology
Vector-borne illnesses like malaria could be reduced by introducing genes into wild populations that prevent disease transmission.

Treating Disease
Genome-editing technology is informing scientists which DNA sequences affect diseases like HIV/AIDS or sickle-cell anemia.

Transforming Food
CRISPR could be used to develop drought-resistant or otherwise harder crops. CRISPR mushrooms that don't brown have already been approved in the U.S.

Editing Humans?
Experiments with nonviable embryos show that much work will have to be done—and many questions answered—before CRISPR can be used to edit humans.

JASON TREFF AND RYAN WILLIAMS, HOW IT WORKS ART; THOMAS PROFFER/ISTOCK SOURCE; SHANTER SOLOZNA, UNIVERSITY OF CALIFORNIA, BERKELEY

Authors Note: Thus concludes the short story section of my thesis. Next is an essay which is to be used as supplementary but not necessarily foundational in the exegesis of meaning in this text.

The Search For The Monster In Our Nature

1: Building Foundations

Political philosophy is intrinsically tied to the human condition. Traditionally, social contract philosophers develop theses concerning humanity's place in the polis by labeling axiomatic principles regarding human behavior in a primitive state. Subsequently, these philosophers follow a trajectory into the development of society in which questions and conjectures concerning civics, power struggles, justice, and human rights can be considered. Furthermore, the diverse range of perspectives regarding this process inevitably yield a manifold of varying hypotheses related to the construction of civilized life as well as to the superlative methods of control, organization, and administration, which emerge as necessary conventions in socially contracted populations.

Jean Jacques Rousseau adopts the described method from his predecessors and, in his *Discourse on the Origin and Basis of Inequality Among Men*, the philosopher constructs a thought experiment to provide evidence for a revolutionary claim, one which would further be substantiated in his social contract, namely: "Man is born free, but is everywhere in bondage." As we will see upon further exegesis, Rousseau has a romantic view of humanity in its natural state, and believes wholeheartedly that it is society which provides the corruption and vice plaguing human existence. Still, it is important to

recognize that the argument made by Rousseau *is* intended to be an accurate historical analysis. In fact, the author fully admits “It is no light enterprise to separate that which is original from that which is artificial in man's present nature, and attain a solid knowledge of a state which no longer exists, which perhaps never existed, and which will probably never exist, yet of which it is necessary to have sound ideas if we are to judge our present state satisfactorily.” Through this statement, Rousseau clarifies that his work is not a proper anthropological study based on empirical scientific observations.

Thus, in order to understand the depth and value of what Rousseau has theorized, we will follow the lead of French existentialist Albert Camus, who once said, “fiction is the lie through which we tell the truth.” With this basis, it shall be beneficial to enlist the novel *Frankenstein*, in order to procure a more lucid comprehension of Rousseau's *Discourse on the Origin and Basis of Inequality Among Men*. For, as will be seen when the comparison is drawn with greater detail, the monster in Mary Shelley's classic horror goes through nearly identical steps as the speculative trajectory Rousseau constructs. Specifically, from innocence in *isolation*, to falling into corruption upon being introduced to a community. Finally, once a comparison between the two has been drawn, an account will be made regarding the origin of our monsters wicked and nefarious behavior.

To provide evidence for these claims, let us first give the *Discourse on the Origin and Basis of Inequality Among Men* in Rousseau's second discourse on inequality the diligent attention it deserves. Once this has been thoroughly understood, an attempt to rationalize the theory can be made by

connecting Shelley's Diabolical in the pursuit of examining from where exactly the monster (or the inclination to act with the intention of evil) in humanity, is derived.

2: The Soul

First, let it be laid down as foundational that Rousseau's view of humanity has two axiomatic principles which diverge from those of his predecessors (Hobbes and Locke). Rousseau "believe[s] [he] can discern two principles antecedent to reason: the first gives us an ardent interest in our own well being and our own preservation, the second inspires in us a natural aversion to seeing any other sentient being perish or suffer, especially if it is one of our own kind." In other words, the human is one in which our fluctuating personal needs and interests are prioritized. We are rooted in a biological necessity to satisfy our appetites, we think with an overwhelming attentiveness to secure basic necessities such as food, water, and shelter. This mechanistic view of our species is nothing new. In fact, the same axiom is foundational for the social contract philosophers who were mentioned previously.

However, while our philosopher accepts the paradigm that designates humanity as being concerned first and foremost with its own self preservation, this is not all that is contained in our nature. We have an additional characteristic that provides our species with the ability to rationalize and experience a pain which is not confined to the individual, but is sensed through others. This concept is referred to as "pity" by our translator, from the french "pitié." Still, this definition does

not seem satisfactory; something more is implicated by this natural faculty. According to Rousseau, seeing pain in others does not simply induce a feeling of sadness. Further, “It is therefore very certain that pity is a natural sentiment which by moderating in each individual the activity of self-love, contributes to the mutual preservation of the whole species. It is pity which carries us without reflection to the aid of those we see suffering; it is pity which in the state of nature takes the place of laws, morals, and virtues, with the added advantage that **no one there is tempted to disobey its gentle voice;**” (1754, 175). From this, we can conclude that the way pity is being used in the text is far more similar to the idea of empathy. Furthermore, this empathy which is the basis of all altruistic and selfless behavior, is not enforced by legal codes or societal conventions. Rather, it is the force of natural goodness which battles a self interest that is argued to eventually amplify itself into vanity upon entrance into society.

Still, it is this communion in the human soul which must be emphasized.

Rousseau says “It is pity which in the place of that noble maxim of rational justice ‘do unto others as you would have them do unto you’, inspires all men with this other maxim of natural goodness, much less perfect but perhaps more useful: ‘do good to yourself with as little possible harm to others.’” (1754, 175). To recapitulate, the argument claims that while pity, or empathy, is the foundation of justice, our own self interest is equally fundamental to our thought process. To close this line of inquiry, let it be concluded that “Man is a creature of compassion and feeling.” (1754, 175). Still, this compassion is regulated by our ego and its incessant persistence to be satisfied.

3: From hillsides to huts

Now that the elements of Rousseau's theorized humanity have been exposed, it serves our purpose to delineate how our (non historical) ancestors lived in a time before the emergence of social contracts and inequality. For, man in this condition was alone, wandering through the forests, without work, without speech, without home, without war, and without relationships, was equally without any need of his fellow men and without any desire to hurt them, perhaps not even recognizing any one of them individually. Being subject to so few passions, and sufficient unto himself, he had only such feelings and such knowledge as suited his condition; he felt only his true needs, saw only what he believed it was necessary to see, and his intelligence made no more progress than his vanity.

Q^ ~ aã Ê€I DÁ

Man, though lonely in this beautifully romantic and innocent state, has no concept of evil actions or harming others. There are no monsters; the human species is merely concerned with providing itself with the various resources it requires in order to survive. Therefore, Rousseau states: "Thus one could say that savages are not wicked precisely because they do not know what is to be good; for it is neither the development of intelligence nor the restraint of the laws, but the calm of the passions and the ignorance of vice which prevents them from doing evil." Q^ ~ aã Ê€I DÁ Q^ ~ aã Ê€I DÁ Here, the philosopher is clearly making the point that his "savages" lack the capacity to behave wickedly due to the inherent axioms which reside in @{ aã Ê€I DÁ. The calm of

our passions is a reference to an idea that our species has no inborn desire to cause another living being's suffering. Furthermore, without society, humanity is ignorant to the vice and sin which Rousseau sees as stemming from it.

Therefore, if we accept the author's argument, *Man* has not been created with an inclination towards evil, and if our original condition is not what Thomas Hobbes calls "a war of everyone against everyone," then the question which initiated this scholarly effort must necessarily re-emerge, specifically: from where exactly are the monstrous characteristics of the human species derived?

For Rousseau, these vices are developed upon entrance into society. Due to a few "alien causes" such as agriculture and language, humanity falls from its primitive condition and begins to unite together in small organized units and "Family become[s] a little society, all the better united because mutual affection and liberty were its only bonds." Still, once we have left the freedom and independence of the forests and hillsides for farms and huts, once we begin to socialize and observe fellow members of our own species, we become conscious of ourselves in relation to others, and as a result, necessarily insecure. Rousseau describes this phenomenon at great length stating:

"People grew used to gathering together in front of their huts or around a large tree; singing and dancing, true progeny of love and leisure, became the amusement, or rather the occupation, of idle men and women thus assembled. Each began to look at the others and to want to be looked at himself;... This was the first step towards inequality and at the same time towards vice. From those

first preferences there arose on the one side, vanity and scorn, on the other, shame and envy, and the fermentation produced by these new leavens finally produced compounds fatal to happiness and innocence.”

Thus, it is from the desire to be acknowledged and accepted that unhealthy and destructive qualities originate.

However, Rousseau's philosophical thought experiment is difficult to accept based on its reasoning. Many critics of the theory have neglected to contemplate the depth and value of the conclusions because of the insubstantial quality of the philosophical foundations which they are built upon. Still, not all is lost in the defense of Rousseau! For, Mary Shelley's masterpiece represents the same opinion. Therefore, by utilizing Camus' process of telling truth through a work of fiction, the novel is able to persuade the reader of the same conclusions proposed by Rousseau, only without a distorted speculation into a past of which the philosopher admits he has no evidence-based knowledge.

4: The Monster's Nature

When Victor Frankenstein abandons his monster, the remorseful creature wanders alone expressing: “I saw felt and heard all at the same time; and it was indeed a long time before I learned to distinguish between the operations of my various senses,” and further, “No distinct ideas occupied my mind; all was confused.”

As the monster wanders in isolation through the wild plain of existence, he is without language, clothing, shelter, and relationships. Furthermore, there is no justification for deeming the monster evil as at this point in his development there are not even recognizable thoughts circulating in the monster's psychology, let alone the intricate concepts of good and evil.

The monster proceeds in this fashion, concerned only with his self preservation. Eventually he procures a cloak, begins to differentiate between his senses, experiments with edible and non edible foods, and even acquires a shelter under a hovel hidden in a hillside. However, this process is interrupted when his view from the hovel he occupies, allows him to see a young girl sitting beside an old man who:

“taking up an instrument, began to play and produce sounds sweeter than the voice of the thrush or nightingale. It was a lovely sight even to me, poor wretch, who had never beheld aught beautiful before. The silver hairs and benevolent countenance of the aged cottager won my reverence, while the gentle manners of the girl enticed my love. He played a sweet mournful air which I perceived drew tears from the eyes of his amiable companion, of which the old man took no notice until she sobbed audibly. He then pronounced a few sounds and the poor creature, leaving her work, knelt at his feet, he raised her and smiled with such kindness and love that I felt sensations of a peculiar and overpowering nature: they were a mixture of pain and pleasure”

This process is similar to the emergence of inequality and vanity which Rousseau describes in a number of ways. For one, the genesis of these traits are developed from

the monster making contact with other people. Furthermore, the demonstration of artistic expression arouses feelings of pity, or empathy, for the old man and girl. And, this pity, or empathy, is only deepened in the heart of the monster as he learns more about the family's life who he becomes so fascinated with. For, upon witnessing that "One of the causes of the uneasiness of this amiable family. It was poverty." The monster ceases the practice he once partook in, namely: stealing from the storagehouse of food which the cottagers produced for themselves. Claiming "when I found that in doing this I inflicted pain on the cottagers, I abstained." The monster instead attempts to ease their suffering. And, lurking in the night so as not to be discovered before he could make an entrance on his own behalf, the monster observes the work of the cutting firewood and eventually makes the move to take "his tools, the use of which I quickly discovered, and brought home firing sufficient for the consumption of several days" Finally, this altruistic act shows a transformation in the monsters initially self-serving behavior, to being a creature concerned equally with empathy.

5:Monstrous Developments

At first, the villagers are thrilled and perplexed by the aid of what they deem an "invisible hand." (Mary Shelley's Frankenstein pg 137) Still, this is not enough for the monster, who, at this point, has never perpetrated an act of evil and, therefore, retains the dream of becoming accepted into the family despite his terrifying appearance. In an attempt to have his existence acknowledged, he plots to expose himself to the blind grandfather whom he hopes will be more sympathetic to his condition due to his ability

to comprehend a being beyond what most individuals would suspect on their first impression. With a planned speech, the monster elegantly expresses his destitute condition, arguing “I have good dispositions; I love virtue and knowledge; my life has been hitherto harmless and in some degree beneficial.” (Mary Shelley's Frankenstein pg 159) Alas, the monster is incapable of finishing his vindication, he is stormed in on by the family who violently tosses him out of the cottage, beating him with sticks, causing him to proclaim, “There was no one among the myriads of men that existed that would pity or assist me- and should I feel kindness towards my enemies? No! From that moment I declared everlasting war against the species and more than all, against him who had formed me and sent me forth to this insupportable misery”

6:Conclusions

Following this proclamation are the dreadful crimes committed by the archetypical monster who haunts our collective conscious. Still, in terms of tracking our trajectory, we must synopsise and clarify where Rousseau and Shelley have led us, then attempt to conclude where exactly the monster(or, the inclination to act with the intention of evil,) in humanity, is derived.

As for the first matter, this essay has attempted to establish that the two authors have reached virtually identical conclusions. Specifically that both seem to view @{ æ Á } æ / ^ as containing pride and pity, the biological impulse for self preservation, and the empathetic quality which results in altruism. Furthermore, that the negative qualities of

vanity, scorn, shame, and envy, are only developed when a human leaves the innocent state of nature and falls into the corruption of a social setting.

Still, the methods of proof utilized in the complementary texts provide an undeniably compelling result. To elaborate, Rousseau is attempting to demonstrate the aforementioned *state of nature* in a particularly formal manner. The structure resembles the logical format of a Euclidean proposition as it depends on stated self-evident principles regarding *human nature*. It moves logically into the formulation of social organizations, and concludes with what it hopes to have demonstrated. However, opponents of Rousseau take a critical view of his theories on humanity, a *state of nature* } *state of nature*, and the emergence of a social contract. Most frequently, these criticisms are directed towards the *methodology* strategy which he employs in putting forth axioms on humanity.

However, Shelley avoids this completely; perhaps it was the brilliant author's goal merely to entertain, or, perhaps she did indeed have a philosophical point which she intended to prove to the reader. Regardless, by using Plato's ancient method of demonstration, *proof by analogy* (through myth and logic,) Shelly sets up a tale of fiction which invites the reader to suspend their disbelief. Then, once reality and the formal studies of logic and history have left the reader's mind, Shelly fills the space with Rousseau's same truths. And, in this new context, the truths function purely on the basis of their self evidence to the reader. Therefore, the novel *Frankenstein* facilitates the philosophical end which designates humanity as naturally innocent, and corrupted only by convention and contract.

Nevertheless, it must be admitted that while the two methods of proof elucidate the development of vanity, scorn, shame, and envy, they may not be capable of extending an answer as to where evil emerges in humanity. However, we can extrapolate a solution following the conclusions which we have already made. If it can be accepted that the monster is not evil à *Á æ' / ^*, and, if it is not evil for him to vainly desire the empathy of others, then a move to deduce the origin of that evil must be predicated on these two principles. For, now that the monster has been immersed in the vanity of society, it does not seem that a return to the innocence of } *æ' / ^* is a possibility, since the ego is starving and must be fed with attention.

But, the attention which the monster receives is in the form of rejection and terror. These reactions initiate a volatile disgust upon introspection into his own personal identity. Thus, the way the monster is perceived is the way he becomes. When he is deemed “Monster! Ugly wretch!” *Q'æ | ^ } • c ã Á Ĩ D* by the boy whom he only hoped would be unbiased, the suffering exceeds its capacity and the monster finally snaps, directing his actions towards the commitment of waging war against humanity and especially his creator. Therefore, let it be concluded that the origin of evil is suffering and a lack of nurturing attention. Or in the monster’s own words, “Everywhere I see bliss from which I alone am irrevocably excluded. I was benevolent and good: misery made me a fiend.” *Q'æ | ^ } • c ã Á * ÁGH D*

What we are left with may produce the sensation of melancholy within the reader. If Rousseau is right, and the well-nurtured vanity he describes leads to inequality within society, then we are destined to live in a world which treats our fellow person as greater

or lesser based on arbitrary categories such as beauty or wealth. On the other hand, if the nurturing process is neglected or facilitated improperly, we create monstrous criminals who will haunt the world we call our own.

Authors Note:

Now, this is where we are left when my anthropologist meets Sabra in the village while he is still on the search for a paradigm shifting discovery. What emerges from the desert sand is an all too familiar society which inevitably creates monsters. I would even go so far as to say that this has evolved due in response to an unequal distribution of resources. Still, I also hold the position that empathy is an evolving quality within humanity. Therefore, given the opportunity to evolve under different circumstances, different results must emerge. This is substantiated via my own proof diamuthologos within my constructed utopia. I introduce a world in which sustainability serves as axiomatic. Consequently, empathy has been amplified past the primitive phase in which we see it functioning among our species. Thus, where this essay is guided by the question of where the monster emerges in our *Paē* /^Λ, the story provides a converse, namely, a monsterless polis where art reigns supreme.