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Brie Barron

Montana State University Billings, bbarron1996@gmail.com

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Entropic Interactionist Theory

Reading Social Constructionism through Thermodynamics and Samuel Beckett

Brie Barron

Chaos was the law of nature; Order was the dream of man.

—Henry Adams, *The Education of Henry Adams*

After the attacks on the Twin Towers in New York City on September 11, 2001, cultural theorist Jean Baudrillard made the provocative and controversial claim in his book *The Spirit of Terrorism and Requiem for the Twin Towers* that we as humans “wished” for the attack on America. He explains further that America’s ascension to world superpower generated the destruction of it: “the increase in the power of power heightens the will to destroy it” (3575). At first brush, Baudrillard’s ideas seem offensive, even sacrilegious toward American society and the culture surrounding the events of September 11th. With deeper analysis, Baudrillard’s ideas can be found at both the micro and macro levels of destruction—the reason we slow down to stare as we pass a car crash is the same reason we wish for the downfall of power. Baudrillard illustrates that the globalized world of

the 2000s resisted its own globalization, and that September 11th made the world witnesses to “triumphant globalization battling against itself” (3576). However, *The Spirit of Terrorism* lacks the non-abstract basis for this inherently human tendency toward destruction and disorder.

The Spirit of Terrorism presents readers with Baudrillard’s sociological perspective. History has seen the conception of many different social theories which aim to explain why humans organize themselves the way they do. Theorists are often inspired by aspects of different disciplines. The social conflict theory, for example, is based on Karl Marx’s ideas about economics, claiming that class inequality is the main contributing factor to the way society is organized. Other theories have their foundations in evolutionary science, some in Freudian psychology, some in the much broader Nietzschean ontology. It is important for sociologists to look for logic in as many disciplines as possible in order to arrive at the best possible answers to their questions. It is also important for those theories to be updated as our knowledge of ourselves is updated.

Today’s modern, globalized world necessitates a sociological understanding based on the deeper understandings of humanity that we now have access to in the technological age. This essay proposes a new sociological theory, one that is in conversation with those that came before it and can be difficult to pin down in classic sociological literature, but is partially present in much of it. This original theory, called Entropic Interactionist Theory, is an outgrowth of Nietzschean sociology but focuses on the second law of thermodynamics as a driving force for societal operation and phenomena. It arose as the result of reading multiple literary works whose language and ideas became inextricable from the concept of entropy and its effect on humans and on writing itself. Eventually, the list of such works became so lengthy that the phenomena warranted an explanation. The complication with Entropic Interactionist Theory (hereafter referred to as EIT) is that it resists description; those who have written about the principles of EIT (without naming it as such) are considered inaccessible, difficult reads. In Baudrillard’s case, not only is his writing said to be dense and esoteric, but the example he used in *The Spirit of Terrorism* was also extremely inflammatory. It is difficult for some readers to parse through their own emotional response to the work and recognize that he is simply describing the consequence of our existence in a universe governed by the laws of physics and a principle of EIT. The confines of nonfiction and academic writing, like Baudrillard

used in *The Spirit of Terrorism*, create boundaries and limits on description that fiction and poetry do not. As such, the form of an EIT work itself is essential in determining how well a reader can tap into and understand its notions of the theory. This essay aims to explain the theory in accessible terms by presenting a work that demonstrates its principles to analyze the role of fiction in the overall comprehension of EIT and to demonstrate its importance. To do so, this essay will explain the concept of entropy, why it applies to society and social constructs, and will analyze Samuel Beckett's play *Waiting for Godot* through the lens of EIT to better explain its principles.

1. Entropy

It's no good crying over spilt milk, because all the forces of the universe were bent on spilling it.

—William Somerset Maugham, *Of Human Bondage*

The second law of thermodynamics, a branch of physics that studies heat and transformations of energy, states that “the total entropy, or disorder, of an isolated system tends to increase as it approaches a maximum value” (Pickover 210). This description is good but somewhat lacking. A still accessible but more encompassing definition comes from American author and public intellectual Dr. Eric Zencey in his 1990 dissertation:

The second law of thermodynamics—the law of entropy—holds that energy spontaneously degrades from more useful to less useful forms, even if it accomplishes no work in the process, and that in any transformation of energy (such as those by which we turn the energy of coal into electricity, and thence into heat, or light, or motion) some part of the energy is irretrievably lost to us . . . what is at first “free” energy (“free” in the sense of available, ready to accomplish work) becomes “bound” energy (energy that, like the enormous amount of heat energy contained in the ocean, cannot be used to accomplish work). (6)

What this means is that all of the energy in the universe tends toward a state of uniform distribution, or equilibrium. For example, when a hot piece of iron in a blacksmith's shop is dipped into a cool bucket of water, the iron cools and the water heats until both are the same temperature. We talk about this concept often without realizing it when we consider that our human bodies deteriorate over time. The difference is that we are the heated iron, the universe is the cool bucket of water, and our lives are the dissipation of heat.

This law of thermodynamics implies the eventual heat death of the universe. This is when all energy reaches equilibrium, there is no more energy available to do work, and thus, life ceases. But that is at the universal scale—entropy is constantly increasing at much smaller scales too. Like the blacksmith's hot iron in water, we see the second law of thermodynamics when an ice cube melts, wood burns, or a body dies (Hershey and Lee). These are all examples of entropy increasing, of a system's energy moving from ordered to disordered and, in the body's case, reaching maximum disorder. Additionally, material things like houses and cars deteriorate over time as the energy holding together the atoms that comprise them becomes disordered (Pickover 210). As Herman Daly explains, "The second law of thermodynamics [is] the law of random, ravage, rust, and rot" (Daly 2). Furthermore, and most importantly for our purposes, as beings subject to the laws of thermodynamics, everything we create is subject to them as well; the nature of creations is to be vulnerable to the same forces as their creator. For humanity, that force is physics, and even the abstract concepts that humans in societies have created follow its rules.

2. Social Construction and Fiction

No structure, even an artificial one, enjoys the process of entropy. It is the ultimate fate of everything, and everything resists it.

—Philip K. Dick, *Galactic Pot-Healer*

In 1928, American sociologists William and Dorothy Thomas coined the Thomas Theorem, which states that “if men define situations as real, they are real in their consequences” (*Oxford Reference*). This theorem perfectly encapsulates the idea of social constructs—things that do not exist in physical reality that only come into being as a result of human interaction. Examples of social constructs are many and varied, but the most commonly discussed are race and gender. There are no biological or physical characteristics that occur naturally without exception to accurately define racial or gender categories. Race and gender exist because humans have agreed that they exist and thus they have become real in their consequences. Less commonly discussed are the social constructs of time, language, and identity. While not as commonly discussed, the Thomas Theorem, as well as the laws of physics, still apply to them.

A large portion of our lives is socially constructed, and that portion grows larger as humanity and society become more advanced. However, the ability of social constructs to remain real relies completely on the agreement of people to hold them together—the energy of humanity upholds their very existence. But as the modern world and modern humans become more and more difficult to organize, so does that energy—and energy is unlikely to uphold much of anything once disordered.

The best way to describe the effect of entropy on social constructs is through fiction and poetry. The second best is through the analysis of those. Entropic Interactionist Theory can be a lens used to describe and analyze multiple works of fiction—some more obvious than others. American novelist Thomas Pynchon’s short story “Entropy” uses the form of fiction to illustrate the second law of thermodynamics at work in the lives of his characters. Even the *Norton Anthology of American Literature* described Pynchon’s subject

as previously “thought to be beyond words” (1520). German physicist Hans Christian von Baeyer wrote the novel *Warmth Disperses and Time Passes* about the “history of heat.” He tells the story of heat and energy through the narrativized lives of the scientists who discovered their properties. *The Boston Globe* called the novel a “highly humanized account of the second law of thermodynamics,” and that von Baeyer “gives what could be an abstract and difficult discussion a profoundly human tone” (Cover copy). As a physicist with access to and understanding of the language of mathematics, von Baeyer demonstrates the necessity of story writing in order for entropy to be understood by the masses. American science fiction writer Ted Chiang’s short story “Exhalation” depicts the nature of energy in our universe through the allegory of the nature of air to a fictional, technological species. The most important thing these fictional stories give their readers is distance from their subject. Fiction allows its readers to suspend their disbelief, to inhabit an alternate world, and examine it in different ways than the ways in which we try to understand our real world. With difficult concepts like entropy, insight into an alternative perspective is vital, which is partially what makes Baudrillard’s *The Spirit of Terrorism* such a difficult read—it plants the reader firmly in their own reality. As in the Old English proverb “you can’t see the forest for the trees,” it is much easier for the typical reader to grasp difficult concepts once they are granted some distance from it. To see how this distancing effect works, it is helpful to analyze what is arguably the most famous work of fiction that applies EIT: Samuel Beckett’s 1953 play *Waiting for Godot*.

3. *Godot* and Entropic Interactionist Theory

Estragon, sitting on a low mound, is trying to take off his boot. He pulls at it with both hands, panting.

He gives up, exhausted, rests, tries again.

As before.

—Samuel Beckett, *Waiting for Godot*

In popular opinion, *Waiting for Godot* is “a play in which nothing happens, twice” (Mercier), but the plot of Beckett’s masterpiece becomes very clear through the lens of EIT. In the play, the two main characters, Estragon and Vladimir, wait for a man they have never met named Godot, who never arrives. They comment on the state of their lives and mindsets, they contemplate suicide, they argue, but in the play’s two acts there is no obvious rising action, climax, or resolution. Because of this, reading the script is very similar to seeing it performed—there is little difference when “nothing” is happening. In fact, it is possible that Beckett intended for the play to be read rather than performed, especially considering the specificity of its stage directions. This line in Act 1 for example holds much more power when read: “ESTRAGON. [*gestures toward the universe*] This one is enough for you?” (Beckett 8).

To an audience member, Estragon could be gesturing toward anything: the road they are waiting at, the field next to them, even the theater housing the performance if the audience is particularly meta-inclined. To a reader though, the gesture is clear: Estragon gestures to the universe. With this implication that Beckett may have intended for *Waiting for Godot* to be read as a script in addition to being performed, we can apply greater significance to the aspects of it that are left out of its audience’s experience: the language of the stage directions and the poetics of the written dialogue. It is the linguistic dimension of the play in which the true plot can be found, and the dimension where EIT can be helpfully applied.

The Language of the Stage *Directions*

William Shakespeare was notorious for his minimal use of stage direction, which allows his plays to be easily adaptable and stay at the forefront of the thespian community for centuries. Beckett took the opposite approach to *Godot*: the stage directions at times take up entire pages and are very specific. These are in stark contrast to the play’s dialogue, which is convoluted at best and irrational at worst:

VLADIMIR. There’s man all over for you, blaming on his boots the faults of his feet.

[*He takes off his hat again, peers inside it, feels about inside it, knocks on the crown, blows into it, puts it on again.*] This is getting alarming. [*Silence. Vladimir deep*

in thought, Estragon pulling at his toes.] One of the thieves was saved. [Pause.]
 It's a reasonable percentage. [Pause.] Gogo. (Beckett 3)

This quote makes more sense in the context of the script than it does presented on its own as it is here, but not much more. Why Beckett chose to set together straightforward, lucid stage directions and complicated, confusing dialogue is a question addressed by dramatists, literary critics, and college students the world over. It is a question that can be satisfied by EIT.

Beckett's concentration on stage directions demonstrates the entropic disintegration of the social construct of time. In the 1900s, science was advancing at incredible speeds, and previously held truths of the universe were being thrown into question. For example, in 1905, Albert Einstein developed his theory of relativity which held that space and time are intertwined in as-of-then undiscovered ways. Because of Einstein's theory and thought experiments, the concept of time became much more difficult to explain, but it always remained in relation to space. Eventually, the theory of relativity worked its way into the fiction of the time, as scientific discoveries are wont to do, and we see the enigmatic nature of time illustrated in *Godot*, initially performed forty-eight years later. Beckett's lengthy and unambiguous stage directions direct the reader's attention to them, because the temporal reality of the play is disintegrating, just as peoples' understanding of time was becoming more disorganized. For example, Estragon and Vladimir cannot remember or agree if a day has passed between Act 1 and Act 2:

ESTRAGON. Another day done with.

VLADIMIR. Not yet.

ESTRAGON. For me it's over and done with, no matter what happens.

(Beckett 49)

However, the reader knows that a day has in fact passed because the stage directions at the beginning of Act 2 indicate so: "*Next day. Same time. Same place*" (47). While the characters cannot tell what day it is, how many days they have stood waiting at the same road, or how many times they have had the same conversation, the reader is clued into the repetitive nature of their lives through the stage direction. Another indication of Beckett's value of spatial reality is the container of the stage itself. The curtain opens on Estragon and Vladimir enters before there is any dialogue: "*Estragon,*

sitting on a low mound, is trying to take off his boot. He pulls at it with both hands, panting. He gives up, exhausted, rests, tries again. As before. Enter Vladimir" (1). Both Estragon and Vladimir only exit the stage once in the entire play and both enter again before any dialogue occurs (8, 63), implying a kind of limitation on the characters: they can only exist onstage and together, in this comprehensible spatial reality that Beckett has created for them.

The disintegration of the concept of time in *Waiting for Godot* is fictionalized but stems from the real world development of the theory of relativity—Einstein's explanation of how gravity and speed affect things like mass, space, and time. We can see that the increasing disorder of social constructs can be effectively narrativized like Beckett has done in the play, and that this makes them more accessible to the masses. Through an EIT reading of the play, this becomes even more clear and conversely applicable to one's own understanding of real-world physics.

The Poetics of the Dialogue

In addition to the disintegration of time in *Waiting for Godot* is the disintegration of identity. Readers and audience members alike will be able to recognize this as it occurs in the dialogue and actions of the characters rather than just the stage directions. Identity is difficult to define well, but most generally refers to the characteristics, values, and personality that make a person. We can define identity as a social construct because of the ideas in Emmanuel Levinas' philosophical and sociological work "Ethics and the Face" that have become widespread and validated. The creation and maintaining of one's identity are typically thought of as internal processes, but Levinas believes the opposite. In "Ethics and the Face," Levinas posits that one's identity is created by way of the people with whom one interacts. He writes, "The Other remains transcendent . . . his face . . . is produced and which appeals to me breaks with the world that can be common to us, whose virtualities are inscribed in our *nature* and developed in our existence" (Rivkin and Ryan 349). While we cannot perfectly know another person, the "Other," we create them. Your personality is not yours and was not created by you—it was conditioned into you as you grew up and is still. Your values are not yours, they are influenced positively or negatively by your parents and authority figures. Even your perception of yourself does not come from some intrinsic acknowledgement, it comes from the reaction

of another recognizing your existence. While identity is not an objective fact nor physically real, we imagine it, agree upon it, and thus make it real in its consequences. Levinas makes it clear that the Thomas Theorem applies to identity and that identity then is socially constructed.

As with time, *Waiting for Godot* demonstrates the entropic disintegration of the construction of identity. Beckett dedicates an entire section of Act 2 to what this essay will refer to as the hat scene (note that Beckett does not partition *Godot's* two acts into scenes), the most outward expression of EIT application to identity in the play. This scene is comprised of Estragon, Vladimir, and the secondary character, Lucky, exchanging and trying on each other's hats:

VLADIMIR. Hold that. [*Estragon takes Vladimir's hat. Vladimir adjusts Lucky's hat on his head. Estragon puts on Vladimir's hat in place of his own which he hands to Vladimir. Vladimir takes Estragon's hat. Estragon adjusts Vladimir's hat on his head. Vladimir puts on Estragon's hat in place of Lucky's which he hands to Estragon . . .*] (62)

This is written in the stage directions, but these are not stage directions that the audience will miss out on. Everything denoted in the stage directions happens and is visible on stage, in contrast to Estragon gesturing to the universe, and the poetics are the movement of the characters. This scene is a popular text for existentialists and is often cited as support for the existentialist tenet that "existence precedes essence." This means, using the hats as examples, that a hat is a hat before it has whatever connotation we associate with it. This would mean that the exchange of hats between characters is simply an exchange of hats, and that there is no deeper meaning. However, through the lens of EIT, one sees how this existentialist reading of the hat scene falls apart. Since identity is a social construct that tends toward disorder, then the exchange of hats can be an allegory for exchange of identities: the trio is actually trying on each other's identities which are wrapped up in their hats. This is because an EIT perspective on existentialism (another social construct) reverses its core value into "essence precedes existence." A hat *cannot* only be a hat once people interacting with one another have applied more meaning to it, like the socially constructed identities of Estragon, Vladimir, and Lucky.

Another example of the disintegration of identity in the poetics of *Waiting for Godot* is the reduction of objective first person pronoun use between the two

acts. First person pronouns are troublesome, even without the disintegration and disorder that is occurring in *Godot*, because they have relative definitions, meaning their definitions change based on the speaker or situation. The pronoun “me” means something different to every person that uses it; it refers to the speaker themselves. The pronoun “you” changes based on the addressee; when someone addresses you as “you” they mean you, but they can just as easily refer to someone else as “you,” meaning them. In Act 1, the second piece of dialogue in the whole play is delivered by Vladimir, is riddled with first and second person pronouns, and demonstrates a firm grasp on their typical use:

VLADIMIR. I'm beginning to come round to that opinion. All my life I've tried to put it from me, saying, Vladimir, be reasonable, you haven't yet tried everything. And I resumed the struggle . . . So there you are again. (Beckett 1)

But in the beginning of Act 2, the pronoun usage becomes more difficult to follow and the characters do not seem to have a concrete grasp on them:

VLADIMIR. Now? . . . [*Joyous.*] There you are again . . . [*Indifferent.*] There we are again . . . [*Gloomy.*] There I am again. (49)

In the final pages of the play, the most commonly used pronoun is “we.” EIT holds that this is because of the disintegration of identity occurring throughout the play. Characters suffering from identity crises would find it easier to define themselves as “we” than to distinguish themselves from each other with “you” and “me.” This change in pronoun use is prominent through an EIT reading of *Waiting for Godot* and is additionally supported by the fact that Estragon and Vladimir never deliver dialogue without each other. As their identities disintegrate, they blur together into a “we.”

EIT in the Fiction of Godot

As the characters experience this timelessness and blurring of identity, we as readers are made aware of a distinct condition that allows entropy: the play itself is an isolated system. The stage is like a room—the characters cannot leave or exit the stage, they do not have any temporal processing ability, and as such, there is no past or future for them to escape to and they do not even

have their own self-identity to anchor themselves to. Once EIT is applied to the play, we know that Beckett has written Estragon and Vladimir into an isolated system on the verge of equilibrium.

Beckett clues us in to the play's focus on entropy very early in the play with a symbol: Estragon's boot. Often considered to be a symbol of existentialist struggle or of capitalism's proletariat (Bennett), even of Nietzsche's eternal recurrence, Estragon's boot carries a different meaning through EIT. Consider that the play is in fact a closed system on the verge of equilibrium (maximum disorder, like our universe's heat death). The second law of thermodynamics explains that, upon reaching equilibrium, there is no longer energy left that is capable of doing work. Extending the capitalist reading of the boot as a symbol of labor, EIT explains that the boot is a symbol of the work done by energy. Estragon's inability to take off his boot and his repeated efforts to remove it support that the play is in fact a system approaching maximum disorder and there is no energy available to do work.

Waiting for Godot also illustrates that the fiction genre is the best fit for EIT subjects because of how we use language. This form of literature, coupled with the structure of a play, frees the language of its typical, "correct" syntax. In an EIT reading of *Godot*, a reader can see the disintegration of time and identity through the language Beckett uses. Fiction grants him the freedom to extend meditation on this subject beyond the norms of grammar and allow his readers distance from the scientific truths embedded in it. However, the reason that Beckett is not included in most literary critics' lists of "entropy writers" is because he distances the reader from the subject further than others: he let the entire work comprise his own social construction and allowed it to disintegrate along with those of his characters. EIT is not only applicable to the play, it encompasses it. The play serves as more than just an illustration of the theory—*Waiting for Godot* could be the very definition of it.

4. Conclusion

*I am a sleepless
Slowfaring eater,
Maker of rust and rot
In your bastioned fastenings,
Caissons deep.*

*I am the Law
Older than you
And your builders proud.*

*I am deaf
In all days
Whether you
Say "Yes" or "No."*

*I am the crumbler:
To-morrow.*

— Carl Sandburg, "Under"

Entropy is what creates the propensity for creativity in humans. At some level, before the concept of "entropy" was ever developed and understood, it influenced us and still does. It is considered human nature to search for meaning in all things and to create meaning when meaning does not exist. This is why we create social constructs to establish meaning where there is no basis for them, and why we analyze *Godot*, the play with no plot. This is why we are creative—to establish meaning, no matter how inane. We know that the heat death of the universe is inevitable, in fact, we speed up the process every time we breathe, and this creates the innate need for us to write stories and build monuments. Some say that is the defining characteristic of humanity: to look the inescapable in the face and create meaning in the interim, dooming it all to disintegration alongside us. Entropy affects much more than measurable energy in the universe, it also affects the imagination that energy is capable of, and EIT asserts that what matters is how we manage our energy—the work we do with it.

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