Introducing Undefinedness

That Is, If Undefinedness Was Something That Could Be Introduced—But It's Not

Written by Bryant Stone (*The Architect*)

Overview

Why does something exist rather than nothing? What happened before the Big Bang? How did something come from nothing? **These questions are the oldest** and **most profound questions in human history**. Despite millennia of inquiry, countless theories, and generations of brilliant scientists, philosophers, and curious minds, **the answers remain frustratingly elusive**. Systems have told us that these questions might not have satisfying answers—that we'll die not knowing how or why it all began… until today. Let me introduce a **revolutionary concept called *undefinedness***, which resolves these ancient puzzles by removing **a flawed assumption: that something comes from nothing**. Undefinedness is not a place, not a void, not potential, not nothing—it is not even undefinedness. **It simply isn't**. Using an innovative letter lattice experimental paradigm, I manipulated starting conditions and measured spontaneous word emergence across hundreds of iterative trials. I tested three conditions by varying the constraints on how words could emerge: 1) an **Undefinedness Condition**, 2) a **Nothing Condition**, and 3) an **Infinity Condition**. The findings are earth-shattering, and the implications are staggering. The Undefinedness Condition outperformed the other conditions in **word variety** emergence, **efficiency** of resolution, and **effectiveness** of repeated successes. Most importantly, the **Undefinedness Condition was the only one that produced** both 1) a **near-perfect normal distribution** in lattice sizes at word emergence and 2) a **near-perfect exponential growth curve** in entropy (chaos) across trials. These two mathematical signatures are **the hallmarks of existence**—they appear everywhere we look in the universe… and now they are whispering a profound truth to us about the origins of everything… **can you hear them?**

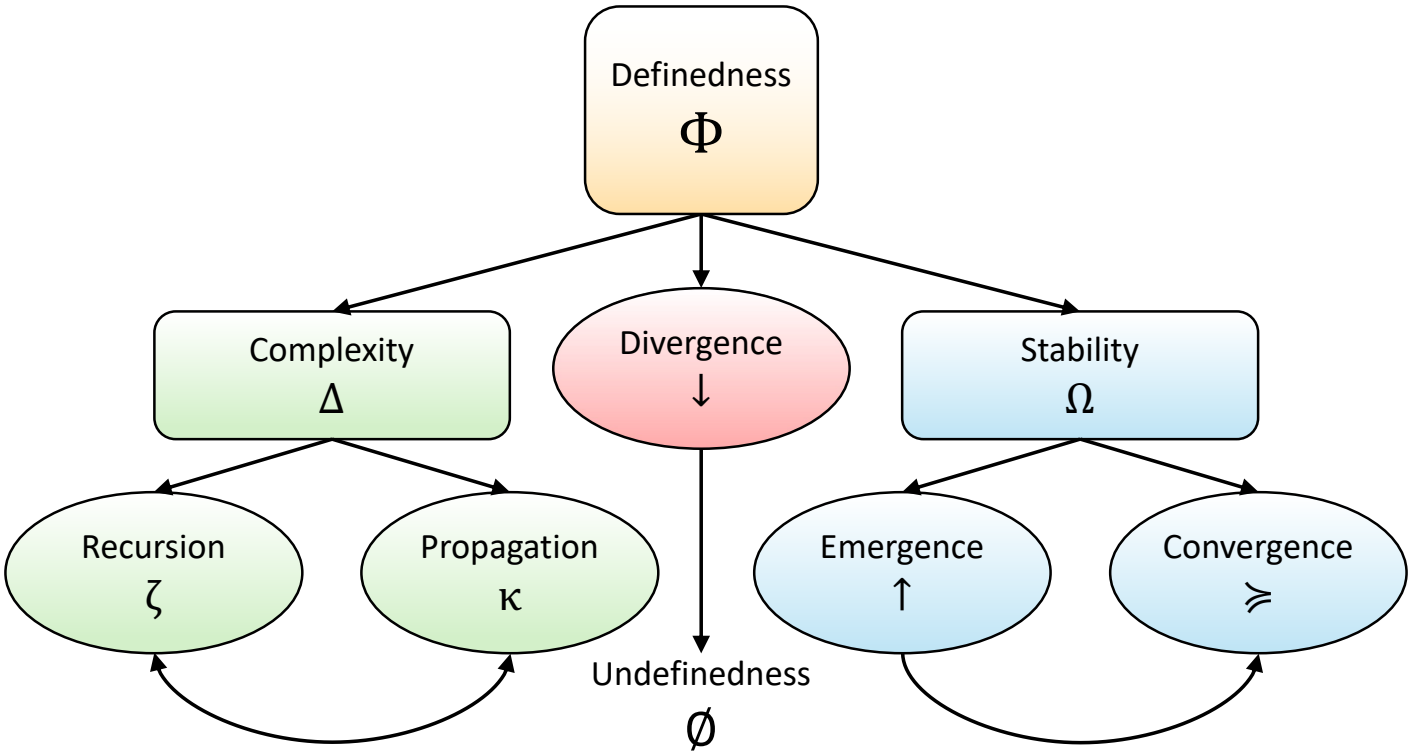
Background & Findings

Sunday, June 1st at 1:36 AM, In My Bed, Wide Awake: Hey, uh… soooo… I wanted to try something fun for this topic, so I am writing to you on my phone in my bed**, staring at my ceiling… but… seeing the universe instead**. In my mind, I see a fractal cosmos… beautiful nebula, suns dancing into supernovas, and an expanse so vast it could make you cry just by seeing it all. **I think about all the beauty in existence**. It's something I care about, and **something you do too, right?** I mean… otherwise you wouldn't be reading this paper.

So... when we lie awake at night, when we think about it all and what it means in our minds, **there's something we never really do**—none of us, really. We can imagine seeing the whole world and the universe; our minds let us **picture worlds unimagined** until the moment we see them, even ones that have never existed and could never exist. Yet what we don't do is picture what does not exist... right? **How do we imagine what does not exist?** Try it right now and tell me... what do you see? Is it a vast blank canvas? A dark void with infinite potential? Empty space? It's so hard to do, isn't it? Let me take a moment to help you figure out **exactly what non-existence looks like** and how we know it looks that way. I mean... it's not like I'll be sleeping anytime soon anyway.

If you have not read *The Theory of Existence*, I encourage you to read the full model at the start of the book. In *The Theory,* I reframed **existence as a concept called *definedness***, which exists on a continuum depending on the complexity of any given phenomenon. Everything that exists has definedness—you, me, grapes, stars, even music, social structures, and cultural trends—they all have **measurable, detectable definedness**. The question then becomes... does non-existence also have definedness?

The answer to that question is... no, non-existence does not have definedness. **We cannot see, measure, or detect something that does not exist**. I call this concept **undefinedness**, which is the absolute lack of definedness (i.e., existence). You might be thinking then... **what is undefinedness?** How do I picture undefinedness? These questions are great and natural extensions to the definedness-undefinedness divide. Still, they are also **inherently flawed** because undefinedness is not something that exists. **You cannot visualize or even understand undefinedness** because, in trying to do so, you **immediately violate its premise of non-existence**.



Caption: This diagram shows the fundamental first-principles of existence as presented in *The Theory of Existence*, illustrating how definedness, stability, and complexity interact to shape all phenomena. Definedness is the unifying principle that maintains proportionality and ensures that complexity and stability interact harmoniously rather than divergence. Stability is the foundational structure that ensures the persistence of phenomena across existence, from the subatomic to cosmic superstructures, providing the necessary framework for phenomena. Complexity, in contrast, drives the diversification, growth, and interaction of phenomena, building upon stable foundations to generate emergent structures. We capture this dynamic in *The Equation of Existence in The Theory of Existence*. At the bottom of the figure we see the two axes of the process of existence, which are 1) recursive propagations as the engine and 2) emergence-to-convergence (E2C) as the direction. This balance and these processes underpin the self-organizing nature of the universe, enabling physical structures from galaxies and planetary systems to biological evolution, intelligence, and consciousness. This model is the only one you need to explain everything that has and can exist.

Think of it like this: when you look at a chair, you can measure its height, weight, and color—that is definedness. When you look at an empty spot where a chair could be, you can still measure the space, the air, the potential—because "empty space" is still something. **But undefinedness is not the absence of a chair. It is not even an empty space where a chair could exist. It is not anything at all.** If it makes you spiral a bit, it means you are understanding it—welcome ☺ isn't it horrifying? It is existentially uncomfortable to think about undefinedness because it is not a void, it's not a place, and it's not infinite potential. **It is also not nothing** because even nothing has definedness. For **nothing to exist, it requires a location where something could exist but does not**, which means **nothing has definedness**... even empty space has definedness. **Undefinedness is not even undefined-**

ness, because if undefinedness were undefinedness, then it would have definedness. The best way to understand undefinedness is to **stop trying to understand it and just say... it simply isn't**.

It's uncomfortable to think about, isn't it? The idea that there is something more nonexistent than nothing is existentially uncomfortable to even consider because of the way our brains work. **Our brains are high-powered categorization, classification, and organization machines**. We have learned that nothing exists; we can picture it in our minds. For me, when I think about nothing or non-existence, I see a black void, but if I can see a black void, it means black voids have definedness. As uncomfortable as it is, **you should not try to understand or picture undefinedness** because undefinedness does not exist**; it simply isn't.**

If it helps you grasp how this concept works, you can think about it **as the opposite of definedness or existence**. However, there is no opposite of definedness—**undefinedness has no opposite** because it simply isn't. Undefinedness as a concept, which is what I am using here, **is not the same as undefinedness outside of our minds** because **there is no undefinedness outside of our minds** because undefinedness simply isn't. Then, consider the word "undefinedness" as **a conceptual Band-Aid** for our innate desire to categorize and understand things. We need this conceptual Band-Aid because **without it, we get stuck** trying to figure out what existed before the Big Bang, for example. Dear reader, **not even nothing existed before the Big Bang** because there was no "before," there was no void, no potential, and no undefinedness; it simply wasn't. See how it works? Let me show you how to use the conceptual Band-Aid we call undefinedness. I actually find it very fun.

◊ **Rule 1:** You **never refer to undefinedness** by flipping your language around it. Instead of saying "before the Big Bang, there was undefinedness," you would say "before the Big Bang, there was no definedness." You will notice that I rarely refer to undefinedness throughout *The Theory* because **you do not need undefinedness** to describe and understand existence.

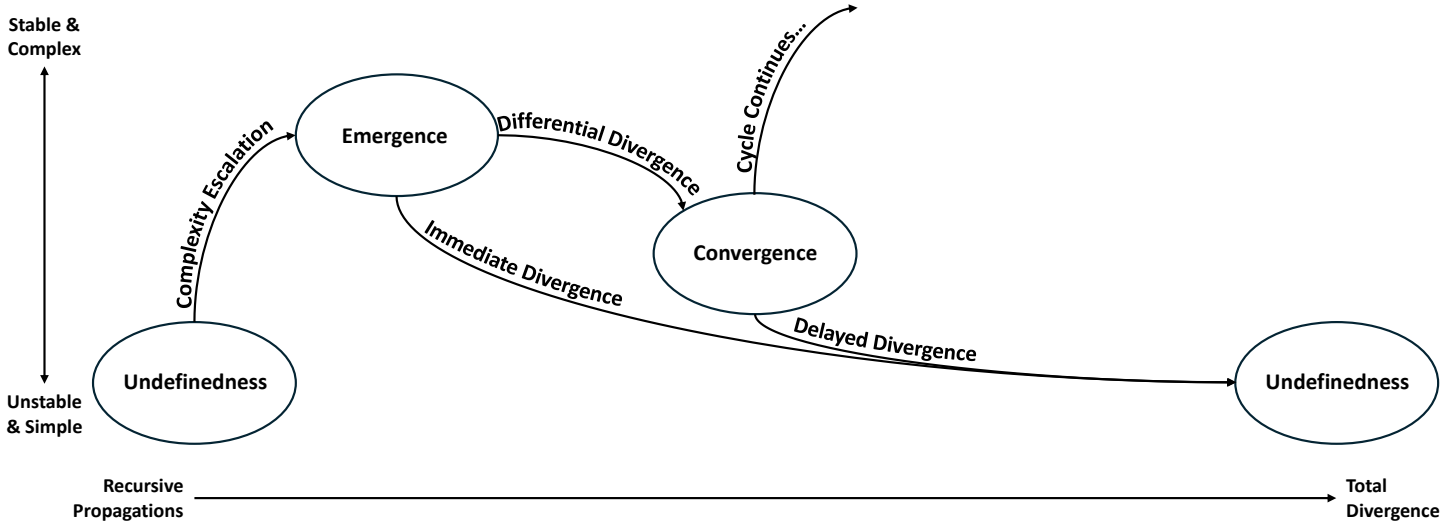
◊ **Rule 2:** If you must say something about undefinedness because it helps you articulate an idea or thought, **you must immediately disqualify it**. For example, if I say "undefinedness is such a cool idea, Bryant—wow, you really nailed that one, good job, amazing work" (for example, just as an example, just off the top of my head—you could say anything really), you would then say "**that is, if undefinedness could be a cool idea, but it's not; it simply isn't**." and then I go cry myself to sleep.

◊ **Rule 3:** Instead of referring to undefinedness, **just refer to it as a concept**, not something that exists. You could say "the concept of undefinedness" to separate it from the idea that the word "undefinedness" represents something because it does not. **Undefinedness has no definition**, and it does not exist. The concept of undefinedness is what we are talking about today. For example, instead of saying "undefinedness suggests..." you would say "the concept of undefinedness suggests..." Wordy? Yes. Pedantic? Not a chance.

This frame shift in **understanding the un-understandable** is essential before we even approach one of the biggest questions humanity has ever asked, yet never answered: **How did something come from nothing?** The age-old question of how something came from nothing is a brilliant question. Still, it is based on a false premise: **that existence came from anything**. It is not possible for existence to come from something because then the question becomes "well... where did [insert previous answer] come from?" It is **a reasonable follow-up question to an unreasonable premise**. You fall into what philosophers refer to as the **endless turtles** or **infinite regress paradox**, where no matter how logical, coherent, and satisfying any answer to the "something from nothing" question surfaces, it is always possible to follow with "well... where did [insert previous answer] come from?"

Thousands of people have spent centuries trying to answer this question with no answer that circumnavigates the infinite regress paradox. **The reason this question remains unanswered is because it is unanswerable**. The concept of undefinedness resolves the infinite regress paradox because you cannot apply the "well... where did undefinedness come from?" question because **undefinedness did not come from anywhere**—it is not a thing, it is not a void, it is not a place, it is not nothing, it is not even undefinedness; **it simply isn't.**

If we resolve the infinite regress paradox, it opens a new question: if undefinedness simply isn't, then **why is there something rather than nothing?** It is a great question! It takes a bit of an inversion in your expectations to see the answer. **Undefinedness doesn't cause emergence because it can't**; it simply isn't. However, what it also means is that **undefinedness cannot stop something from emerging** into existence because it places **no restrictions or properties** on anything or any event from happening because to do so would require undefinedness to have properties itself, which it does not have; it simply isn't. So… the answer to why does something exist instead of nothing is**… why not?** See… **cause and effect are properties of existence**, which means causation did not exist until *after* existence emerged. **Causation cannot exist before existence**, which means **that existence emerged without a cause**; then, immediately after it emerged, causation took over.



Caption: This figure illustrates the cyclical nature of emergence, convergence, and divergence governed by recursive propagations. It depicts how complexity escalates and stabilizes through structured recursion, following a trajectory from undefinedness to emergence, then convergence, and ultimately back to undefinedness if stability fails. The leftmost position represents undefinedness, where recursive propagations have not yet aligned to form stable complexity. The figure illuminates *The Theory of Existence's* revolutionary premise: reality operates as a seamless, interconnected system governed by universal principles of recursive propagations following patterns of emergence-to-convergence (E2C). *The Theory* dissolves traditional disciplinary boundaries by demonstrating how seemingly disparate phenomena—from planetary formation to consciousness—emerge through identical fundamental dynamics. This diagram reveals how complexity and stability interact across scales, showing that the mathematical principles driving galactic structures are fundamentally similar to those underlying cognitive processes. *The Theory of Existence* provides a unified lens that resolves paradoxes in quantum mechanics and general relativity, offers a cohesive explanation for phenomena ranging from cosmic evolution to cognitive emergence, and demonstrates that consciousness and physical systems are not separate, but expressions of the same underlying recursive-propagative dance. This visualization challenges our traditional understanding of reality by revealing a profound interconnectedness that transcends conventional scientific and philosophical categories, suggesting that what we perceive as distinct are manifestations of a single, elegant mathematical framework of existence.

The same logic applies to the question: **what exists beyond and outside of the universe?** Your inclination is to say nothing exists outside of the universe, but if nothing exists outside of the universe, then **what exists outside of nothing?** Do you see how easy it is to fall into the infinite regress paradox? The answer to the question of what exists outside the universe is... not answerable because it is built on **the false assumption: that anything can exist outside of the universe**. Undefinedness does not exist outside of the universe because **undefinedness does not exist anywhere**; it simply isn't. These questions—"What happened before the Big Bang?" "Why is there something rather than nothing?" and "What exists outside of the universe?"—**are all unanswerable,** built on the **false premise: that they have valid answers**. It is time for humanity to retire these important questions.

The cool thing about undefinedness (that is, if undefinedness was something that could be cool, but it's not) is that you do not have to go back all 14 billion years to the Big Bang to see the concept. We see definedness form (I am choosing not to say we see undefinedness because **undefinedness is** not something we can see) **in front of us all the time, everywhere, even right now…** let me show you:

At the end of this paragraph, **I will say a sentence**, and it could be any sentence. I do not know currently what that sentence will be... but **it does not mean that the sentence I will say cannot ever exist** just because my brain has not initiated the process that would determine its structure. Just like the universe at the start of the Big Bang, **there is nothing in my brain stopping any word arrangement from emerging**. As I type this sentence, I do not know anything about the sentence, and **I have not even chosen the topic**, but that sentence will come into existence right after I finish typing this paragraph. We could say that **the sentence I will type currently has no definedness**, but as soon as I go to type the sentence, it will have definedness. This sentence then loses definedness in my brain... I'll forget about it shortly after writing this paragraph because it's 2:04 AM now, and okay… I am about to write the sentence: **SpongeBob SquarePants was the best president that ever existed...**

At the start of that last paragraph, **that sentence did not have definedness**; we could say it was undefined (that is, if a sentence could be undefined, but it cannot; it simply isn't). Then, when I went to type it, it had definedness. Do you see how **that sentence did not come from anywhere** at the start of the paragraph, but also how nothing stopped that sentence from having definedness? The **emergence of that sentence is exactly how existence works** and why there is something rather than nothing despite there being no "before" the Big Bang.

Beyond the Big Bang, the implications of the concept of undefinedness span the multiverse. In current cosmology, a problem known as **the multiverse paradox arises**, which raises questions about how different universes can have **distinct laws of physics simultaneously**. Conceptually, suppose the laws of physics in one universe are incompatible with the laws of physics in our own. How is it possible for them to be connected or contained by any sort of medium or time? The resolution to the multiverse paradox is... **they are not connected**.

Undefinedness is not a medium or space through which universes can connect to each other. Therefore, **the laws that govern one universe can vary freely** because they never interact with our own. Unfortunately, this resolution suggests that **we can never know if other universes exist,** as we have no way to interact with them. There is no way to access any other universe, so, functionally, other universes are nonexistent. However, given the structure of our universe and its mechanics, **I find it highly unlikely** that we are the only universe or form of existence, but we can save those worlds unimagined for our dreams, where they belong. It's so beautiful that even in *The Theory of Existence*, the **universe has found a way to keep the wonder in its mystery**.

For centuries, **we have danced around the edges of definedness** where our math in physics tells us the answer is undefined. Still, it **makes us so uncomfortable to think about** that **we instead replace the correct undefined answer** with infinities, or we don't look too closely... I know it is uncomfortable to think about, but it is also **incredibly beautiful once you see it in action**. As such, I want to show you my data-driven experiment demonstrating my argument for the concept of undefinedness. It's called ***The Lattice Experiment***. But first, I really should go to bed before I try to tell you all the details. Goodnight!

Measuring the Unmeasurable…

When I first set out to empirically validate the concept of undefinedness, **it seemed impossible**. How does one measure something inherently unmeasurable? How do we measure what simply isn't? But... I realized that to demonstrate undefinedness, you can **measure what is not undefinedness**. So, we can **measure definedness that supports the concept of undefinedness**—not because undefinedness exists, but because definedness behaves in ways **only possible if the concept of undefinedness is correct**. Let me show you *The Lattice Experiment*.

To demonstrate the concept of undefinedness, I needed to create an experimental paradigm that captures the effects of **the first moments definedness** dances into existence so we can see **what conditions, or lack thereof, allow for** the **emergence** of something in a way that aligns with how existence emerges. I created the concept of *The Lattice Experiment*, which consists of recursive (iterative) updates to an **increasingly expanding, randomly generated letter lattice until a word emerges**. When the words emerge, we can see what conditions allow for words to emerge in ways that align with what we see in existence. The **experimental manipulation**

stemmed from the slot size, which was the letter length that an emerging word can fill. There were three conditions that align with the conditions… or non-conditions, of existence at emergence, which were:

◊ **Undefinedness Condition** $(\emptyset)$: The slot size for the valid word emerges at the same time as the emerged word. Thus, before the word emerges, the slot size, much like the word, is undefined until the moment the word emerges. Words can be three, four, or five characters long.

◊ **Nothing Condition** (0): The slot size is predetermined, and words can only emerge once that slot size is fulfilled. To demonstrate nothing, we must show that there is something that could be there, but it is not. Thus, the slot is always set to five characters, and once a five-character word appears, the slot fills.

◊ **Infinity Condition** (∞): The slot size is infinite; thus, a valid word never emerges. This one is here more for legacy, not validity. There's no evidence that demonstrates infinity actually exists anywhere in existence—it's all just representations and mathematical abstractions, but definedness does not go on forever. You can read more of that argument in *The Theory*; we should save this tangent for a more cherished time.

There are two data distributions that famously capture everything, pretty much everywhere we look in existence: 1) **the normal distribution** and 2) **the exponential growth curve**. Let me tell you about these two **famous distributions**. So, a distribution is nature's way of organizing things in the world. It's like asking "**How often does this happen?**" or "**Where do most of these things fall?**" When you look at people's heights, test scores, or the time between buses arriving, you're looking at specific distribution patterns.

Letter Lattice 1

R	A	S	T	E
F	A	F	O	A
I	N	O	P	L
U	M	C	A	Y
D	F	I	B	W

Letter Lattice 2

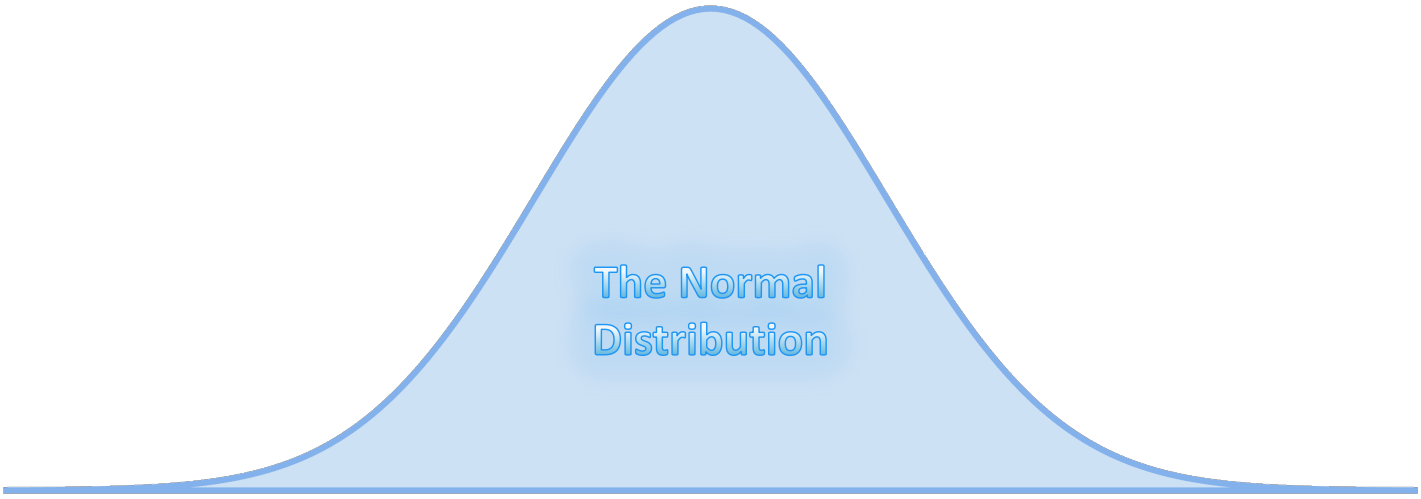
B	R	K	T	S	A
H	A	H	A	P	Z
L	M	I	F	N	C
P	E	W	G	H	D
U	V	X	Z	J	A
O	A	E	I	M	N

Letter Lattice 3

A	E	I	O	U	R	S
T	H	A	P	P	Y	P
E	B	F	I	G	H	O
Q	W	E	A	S	D	F
N	B	D	O	G	O	U
W	G	A	L	P	F	S
C	D	I	H	A	L	H

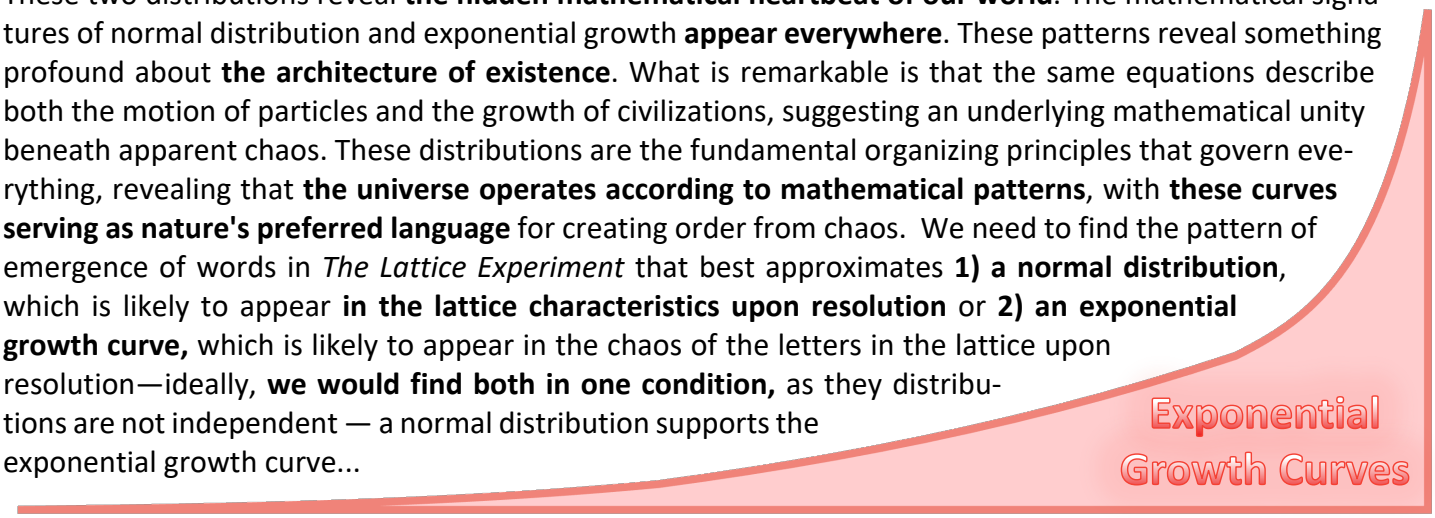
Caption: Each trial begins with a randomly generated letter lattice that expands recursively by one unit per attempt. Letters are placed without constraint—no predefined word length, orientation, or content—representing pure undefinedness. A trial completes the moment any valid word (3–5 letters) emerges. The figure presents three representative trials: Trial 1 fails to stabilize. Trial 2, modeling the "Nothing" condition, imposes a fixed five-character slot in advance and recursively tests each lattice for a word that fits this predefined frame. Despite the presence of structure, the trial fails to resolve—demonstrating that structure alone cannot generate resolution. In contrast, Trial 3 successfully ignites under the Undefinedness condition: the word "DOG" and the slot it occupies emerge together, simultaneously. This co-resolution is not retroactive. The system is not filling a predefined hole—it is discovering the structure and the content at the same time. The red highlighting in Trial 2 visualizes structural expectation; the blue and red highlights in Trial 3 depict spontaneous emergence. This alignment of recursive propagation and semantic resolution marks the ignition point of definedness. It is not the presence of letters that produces meaning—it is their agreement. Only when recursion is allowed to define freely does structure stabilize. This figure captures that core principle: definedness does not arise from constraint. It arises when structure and recursion resolve together.

On one hand, the **normal distribution**—often called **the bell curve**—is everywhere around us and emerges whenever countless small phenomena **accumulate at large scales**. For example, most people have average height, with a few who are very tall or short; you see **the same curve** in shoe sizes, rainfall, and errors scientists make when measuring things. It's so universal we use it as our **measuring stick for what's "normal"** versus rare.



On the other hand, **the exponential growth curve** is the mathematics of acceleration, where complexity escalates at ever-increasing rates—it starts slow. For example, a TikTok video doubling views each day—100, then 200, 400, then millions—**follows the same pattern that governs** disease progression through populations, how compound interest transforms modest savings into wealth, and how technology develops faster each decade. **This distribution is critical** because it reveals why pandemics can **shift from "manageable" to "overwhelming,"** why saving young matters so much (sorry Gen Z), and why technological revolutions blindside us.

These two distributions reveal **the hidden mathematical heartbeat of our world**. The mathematical signatures of normal distribution and exponential growth **appear everywhere**. These patterns reveal something profound about **the architecture of existence**. What is remarkable is that the same equations describe both the motion of particles and the growth of civilizations, suggesting an underlying mathematical unity beneath apparent chaos. These distributions are the fundamental organizing principles that govern everything, revealing that **the universe operates according to mathematical patterns**, with **these curves serving as nature's preferred language** for creating order from chaos. We need to find the pattern of emergence of words in *The Lattice Experiment* that best approximates **1) a normal distribution**, which is likely to appear **in the lattice characteristics upon resolution** or **2) an exponential growth curve,** which is likely to appear in the chaos of the letters in the lattice upon resolution—ideally, **we would find both in one condition,** as they distributions are not independent — a normal distribution supports the exponential growth curve...

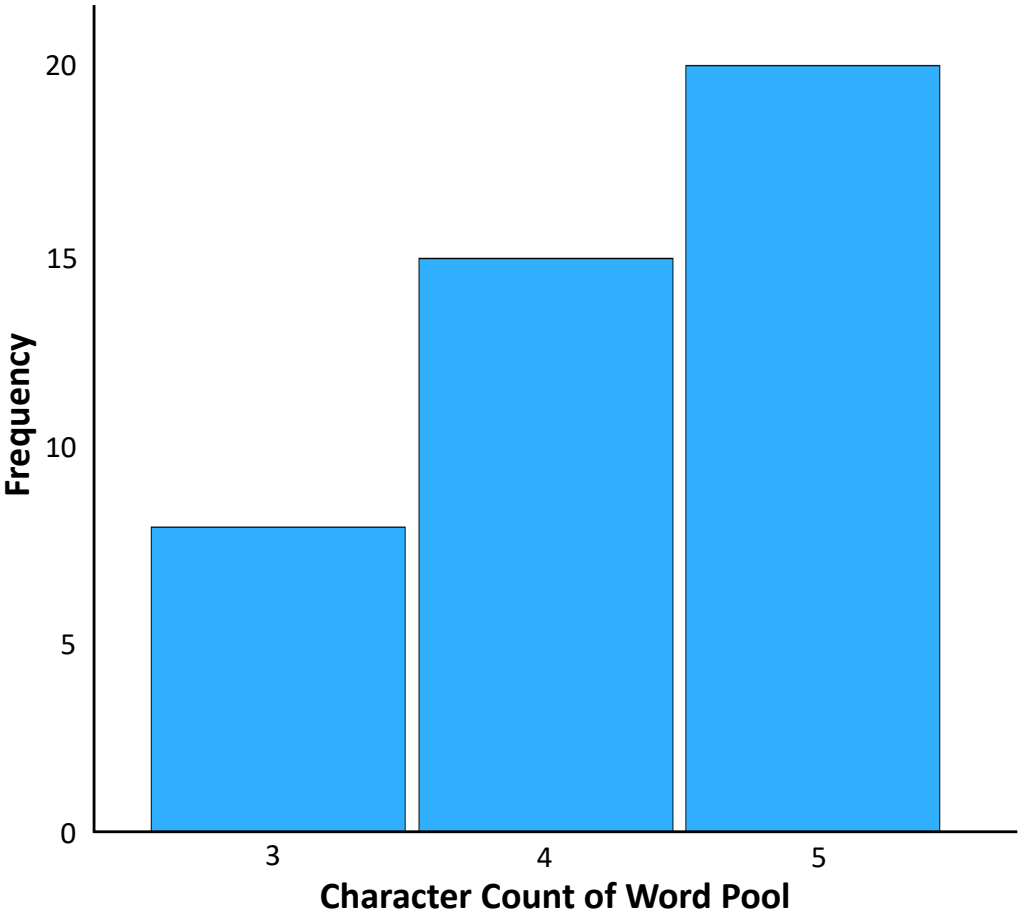


I conducted this experiment using code (see code and data at the end of this paper) and collected repeated trials for analysis. I **conducted $\sim$600 trials** to ensure that I stabilized the statistics without unreasonable sensitivity, which could result in false positives (for the statistics people—I did not want to overpower the inferential tests that would lead to a Type I error). The experimental paradigm works by **starting with a 5×5 letter lattice**; then, when a word does not emerge, the **whole lattice updates**, but **this time it is a 6×6 letter lattice**, and this process repeats until a word emerges. Once a word emerges, **the trial reached a resolution**. Then **we record the conditions of the final lattice**. We can measure the following variables:

- **Resolved**: If the trial resolved or terminated at 100 recursions (max).
- **Slot Size:** The size of the slot in which the word emerged (three, four, or five characters)
- **Attempts:** The number of recursions before resolution or termination (1-100).
- **Final Lattice Size:** The largest side dimension of the lattice size in which the word emerged (5-104).
- **Word:** The final word that emerged from a pool of available three-, four-, and five-character words.
- **Shannon Entropy:** We can measure the randomness or chaos of the letter patterns generated in each lattice.

$$-\text{sum}\left(\left(\frac{c}{\text{total}}\right) * \text{ math.log2}\left(\frac{c}{\text{total}}\right)\right)$$

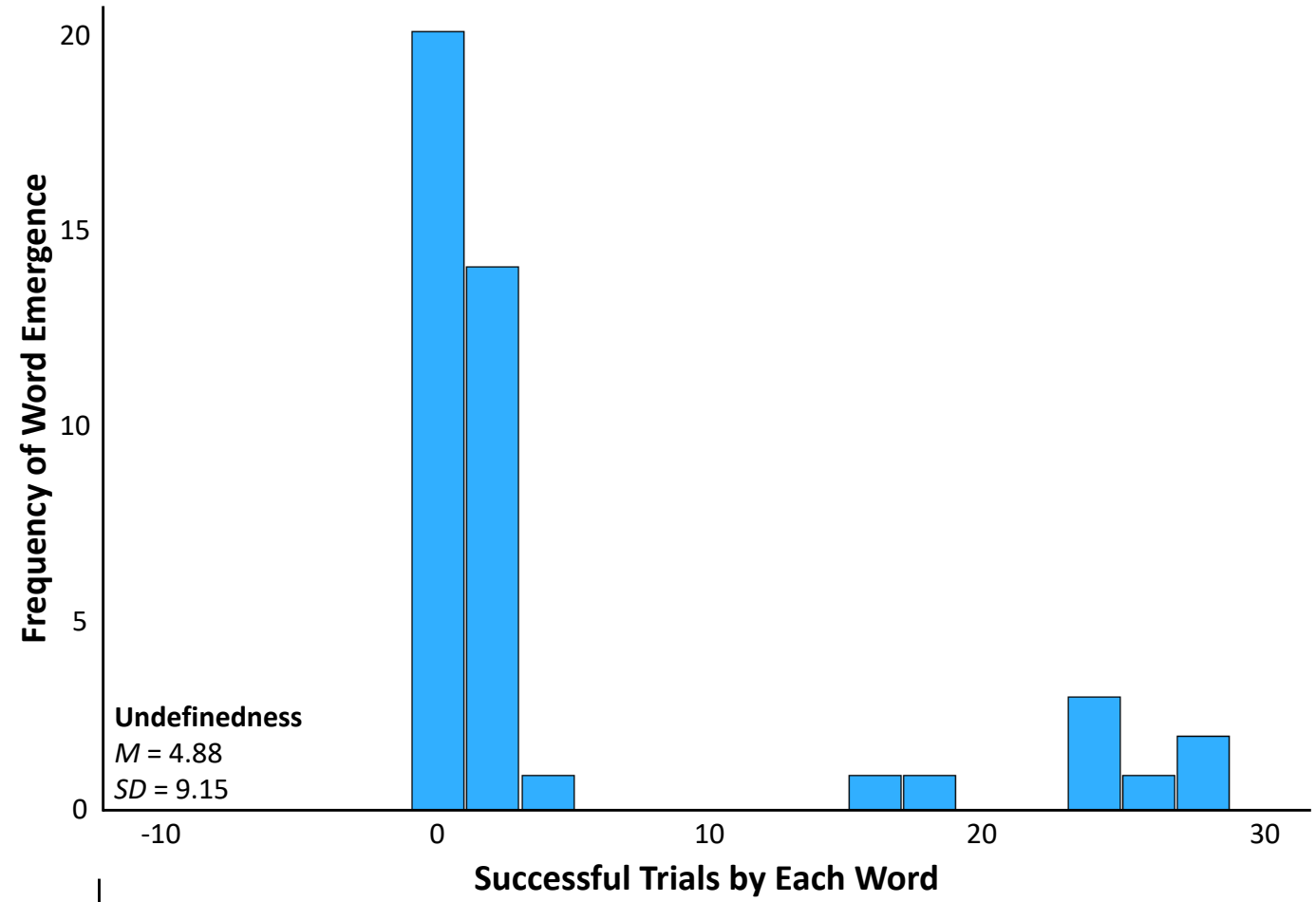
Shannon Entropy estimated **how evenly distributed the letters are across the grid**—a lattice where all letters appear with equal frequency will have high entropy (**maximum randomness**), while a lattice dominated by just a few repeating letters will have low entropy (**more predictable patterns**). In this experimental paradigm, **entropy serves as a key metric for understanding the order** in the "information content" of each lattice: **Lower entropy indicates the presence of subtle patterns and constraints** that facilitate word formation, while **higher entropy represents pure randomness** that disrupts the structured letter sequences necessary for meaningful words. **We want to have moderate entropy** to form coherent three-, four-, and five-letter words.

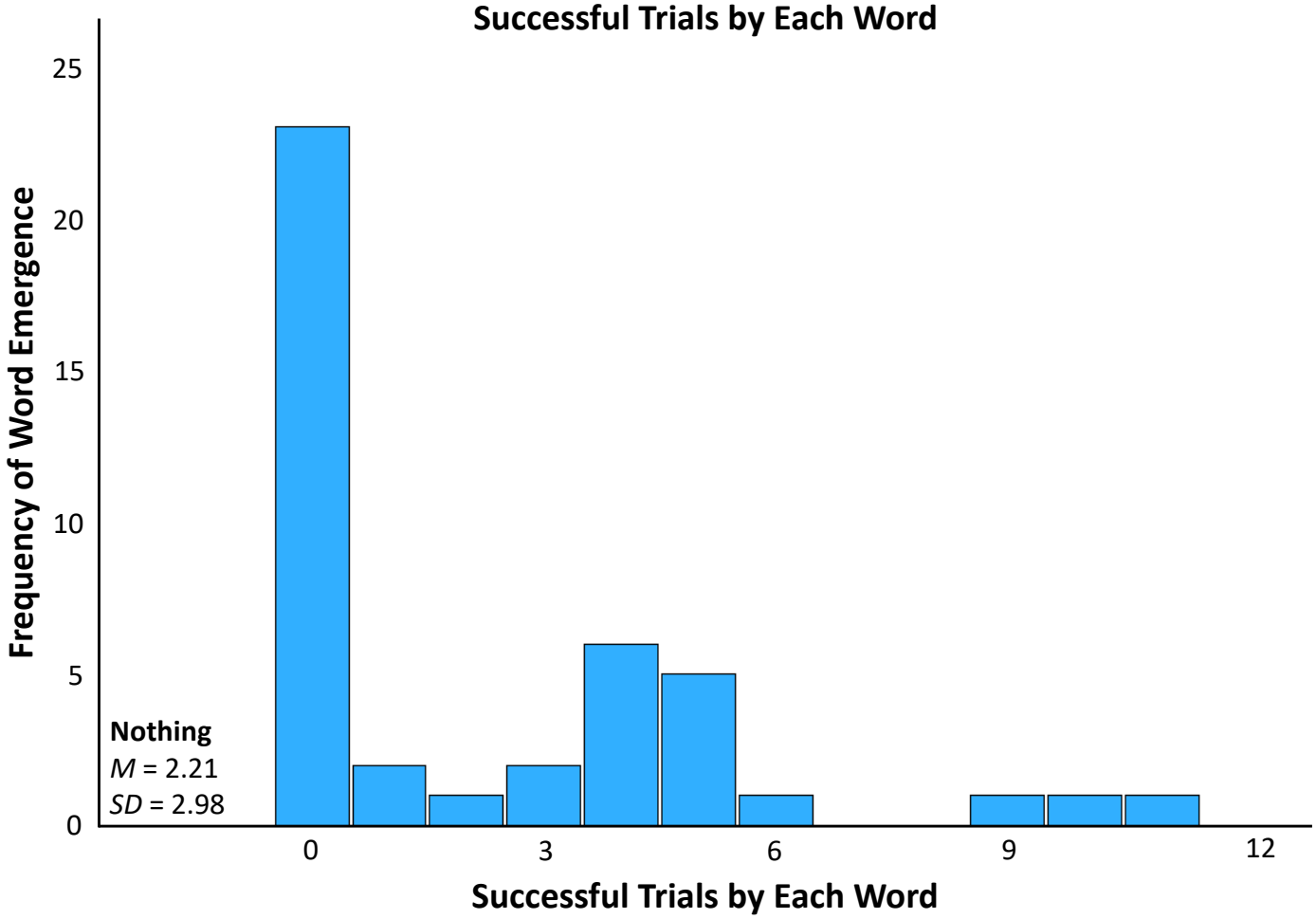


I need to note that ***The Lattice Experiment*** **is not a simulation**. We are not simulating anything. We are setting the conditions and allowing words to emerge on their own then examining the conditions that allow for certain emergence behaviors. The emergence we see here is real because they form spontaneously under random letter variation. **It is an experiment because we are holding all other variables constant expect for the slot size.** We can then extrapolate these findings to the the patterns we observe across existence, **including the emergence condition of existence.** After all was said and done, I oiled the ol' machine up, put gas in her, and let her do her magic. Wanna see what she said?

I generated a word list for use in the experimental paradigm, with the **Character Count distribution approximating an exponential growth curve,** which aligns with **complexity escalations** in existence. The more complex a word (i.e., its length), the more likely it is to resolve from high entropy or chaos. The most available resolved words were five characters to reduce bias in the Undefinedness Condition by leveling the playing field between the two conditions, as **the Nothing Condition does not have access to three- and four-character words**. This ratio allows for a bias towards five-letter words, while not disturbing the group differences across the character counts, $t = 0.69, p = .305, [95\%\text{ CI: } 0.63, 0.74]$. So… when the **Undefinedness Condition kicks the Nothing Condition's ass below**, I don't want to hear **a single peep about unfair advantages for the Undefinedness Condition**. The experiment itself favored the resolution of five-character words, the **slot size for the Nothing Condition**. Let's look at the resolution frequency of words between the conditions to see what's coming...

In the top bar chart, we see the **Nothing Condition**, with successfully resolved words **tending to have only a few successful trials**, with words never having more than 11 successful trials. Also, nearly 25 possible words did not have a successful trial. It appears that **the Nothing Condition limits word resolution success**.


Frequency of Word Emergence
20
15
10
5
0
Undefinedness
M = 4.88
SD = 9.15
-10
0
10
20
30
Successful Trials by Each Word


Frequency of Word Emergence
25
20
15
10
5
0
Nothing
M = 2.21
SD = 2.98
0
3
6
9
12
Successful Trials by Each Word

In the Undefinedness Condition, we see that only 20 words did not have a successful trial—a large improvement. Most importantly, **only the Undefinedness Condition has multiple high-success words**, achieving around 24-26 successful trials, representing **over 200% improvement** compared to the Nothing Condition. These bar charts indicate **that the Undefinedness Condition appears to be more effective**. Let's look at the descriptive statistics:

Table 1

Descriptive Statistics by Variable

	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
If Word Found	No	Yes	48% No	50%	0.06	-2.00
Slot Length	3	5	3.70	0.92	0.63	-1.51
Character Count	3	5	3.70	0.91	0.63	-1.51
Attempts	1	100	66.67	40.12	-0.54	-1.58
Final Lattice Size	5	104	70.67	40.12	-0.54	-1.58
Entropy	3.78	4.70	4.58	0.12	-1.19	3.77

Note. n = 630. Descriptive statistics for all variables in the current experiment.

Beautiful descriptive statistics, no? A review of the correlations revealed something intriguing right away. Let's take a closer look. We have **three variables** in this correlation matrix. Starting with **Character Count** and **Attempts**, we see that **as trials require more recursions** to resolve a word, **the length of that word tends to increase**; it also means that **shorter Character Counts**, like the three- and four-character words, **tend to resolve sooner**. Already, we are seeing that, **despite the** experimental paradigm's **tendency to favor five-character words**, they were **the hardest to resolve**. The relationship splits when we look at the other variable, Entropy.

Table 2

Correlations Among Experiment Variables

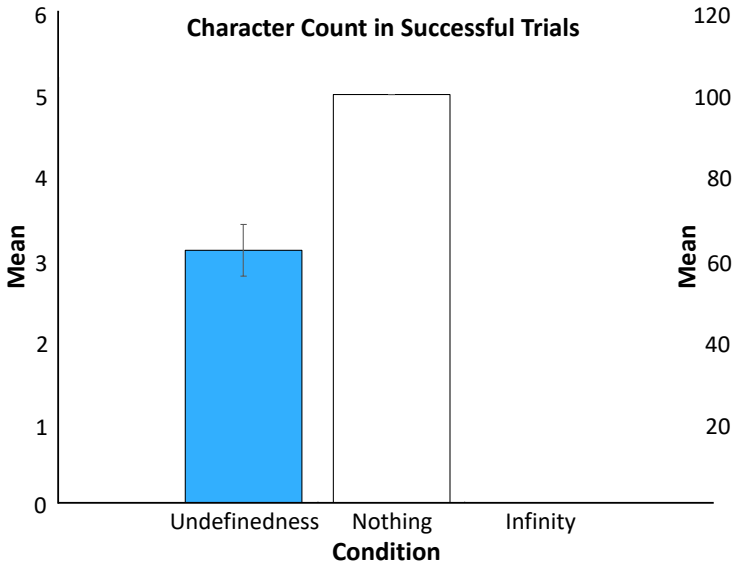
	Character Count	Attempts	Entropy
Character Count	-	.892	.398
Attempts	.892	-	-.151
Entropy	.398	-.151	-

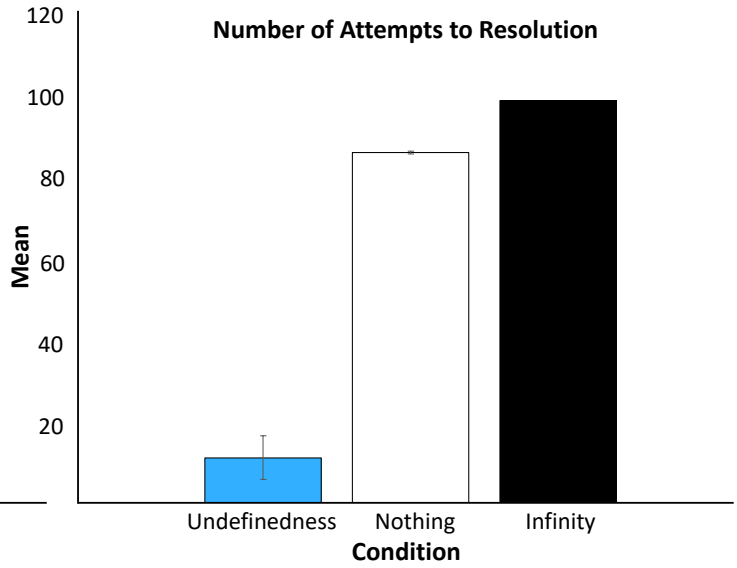
Note. n = 630. Bivariate Pearson correlations among variables in the experiment. I removed Slot Length and Final Lattice Size due to redundancy from perfect correlations. All correlations were statistically significant at α = .001. I shaded the cell color to show contrast between the smallest (White) and the largest value (Green).

We see a split with a significant **divergent relationship between Character Count and Attempts to Entropy**. Thus, **as Entropy rose**, creating more chaos and noise, the **Character Count** of resolved words **tended to increase,** and the **number of recursions** to resolution **decreased**. These relationships provide validation that the **experimental paradigm's features and conditions are tuned and performing exactly as expected**. Now that we know the experimental paradigm is functional, the real magic begins. Buckle up, folks...

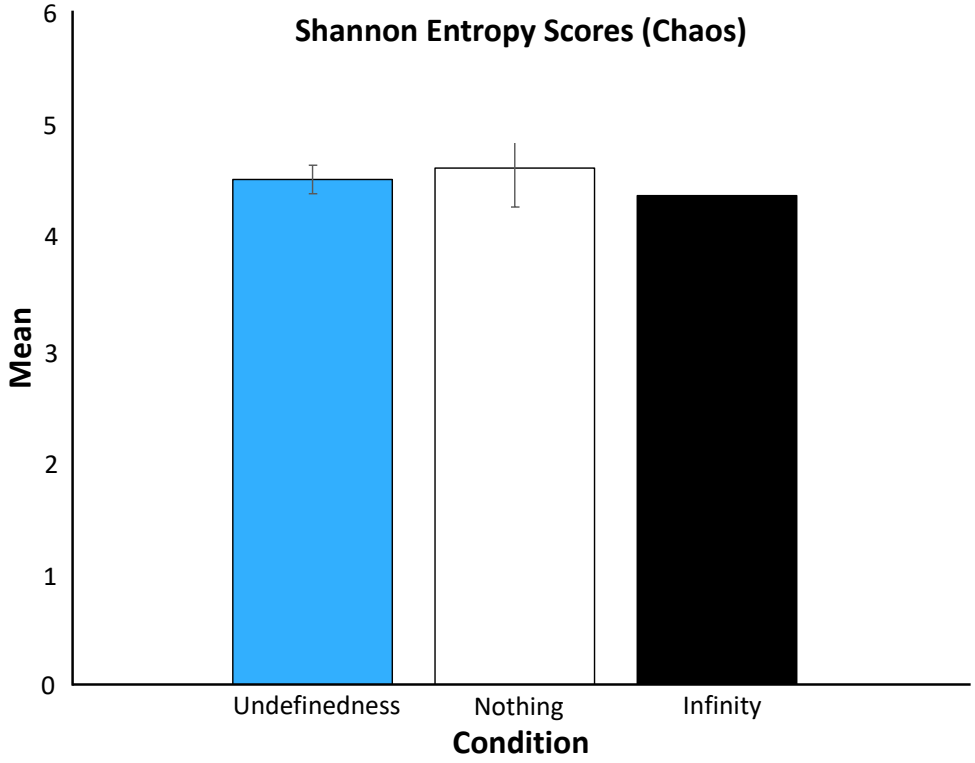
Let's start by examining some bar graphs to get an idea of how the **different conditions performed across trials**. On the page below, you will find two bar graphs. On top, we are looking at the mean character count of resolved words across the three conditions. **Infinity does not have a bar because infinity never resolves words** (because it can't). However, there's a rather notable difference between the other two conditions.

We see that **the Nothing Condition is locked in at five-character words** just like we set—no variation, no diversity, just an empty five-character slot until a word emerges. Then, there's the Undefinedness Condition, with a **mean character count hovering around three characters**. It shows **ease in resolving lower character count words** and is the only condition that allows for both 1) **resolution** and 2) **variation**; that's a huge deal.



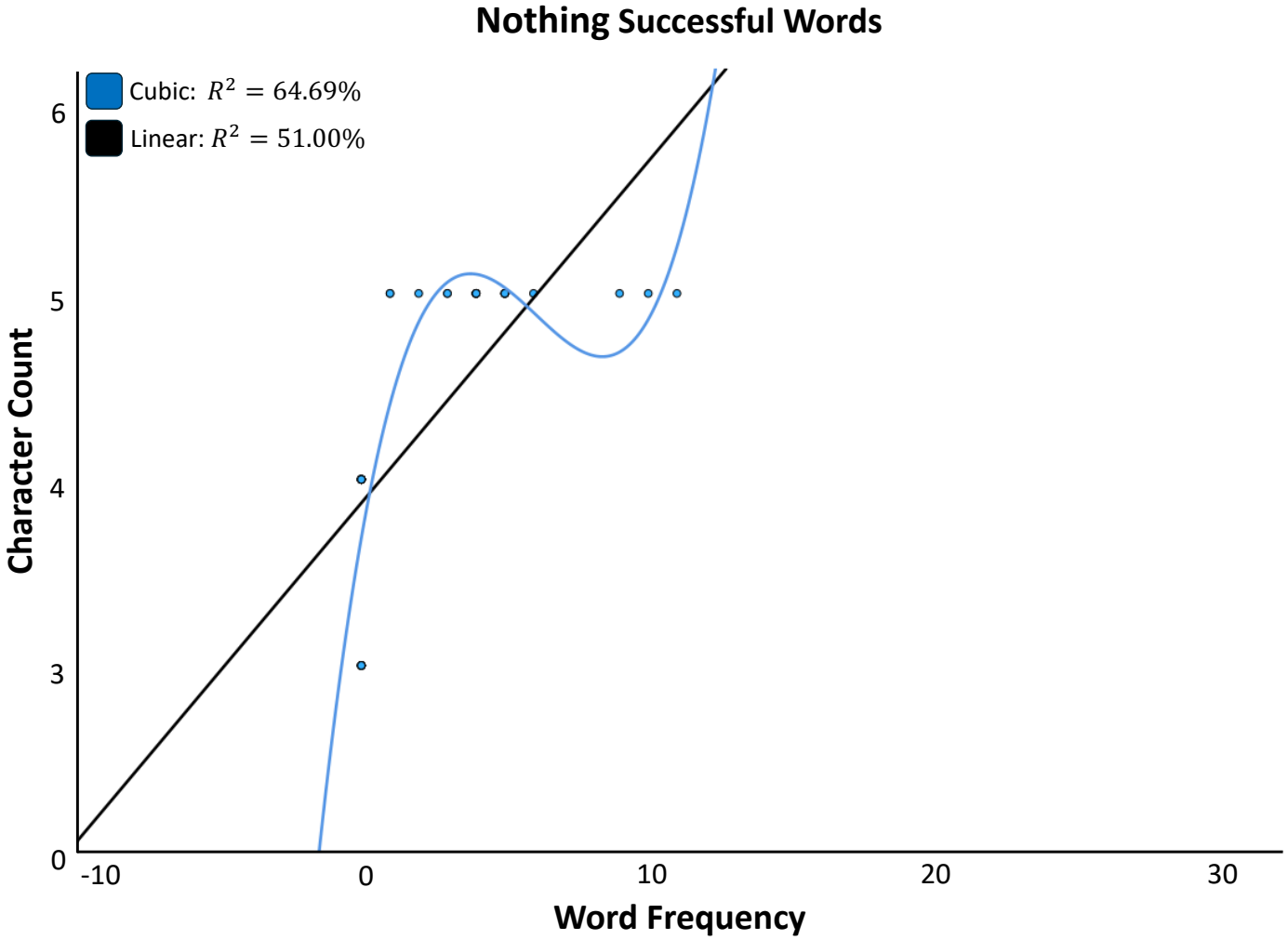


In the bar graph on the bottom, a **radical new story emerged across the number of attempts** before word resolution. The **Infinity Condition never resolved** (because it can't), forcing the mean number of attempts to be 100. The **Nothing Condition did resolve with minor variation** after about 90 recursions, just missing the max for all trials. Then... there's the Undefinedness Condition, **showing a mean number of attempts before resolution to be less than 20 recursions** and with significantly greater variation. Across both bar graphs, we see the story emerge that only the Undefinedness Condition functions with 1) **significant variation** and 2) **fast, effective word resolution** compared to the Nothing and Infinity Conditions. Let's look at the differences in Entropy...



This bar chart may seem deceptively innocuous and straightforward, but its **implications are profound and staggering**. What we observe here **fundamentally challenges our assumptions about how order emerges from chaos**. The Undefinedness Condition, with its moderately lower entropy around 4.60, becomes the fertile ground **where simple words crystallize from randomness**. At the same time, the "Nothing" condition at nearly 4.80 entropy **proves too chaotic for coherent patterns to form easily**. This interpretation aligns with the previous findings showing **the variation, effectiveness, and efficiency of word resolution in the Undefinedness Condition**. The Infinity Condition settles at the lowest entropy near 4.50, suggest-ing that even in the pursuit of endless expansion, some underlying order still emerges. However, **without a way to fill the slot with infinite characters, none of that order matters**. In the context of existence, even if Infinity were correct and order can emerge from it, it doesn't matter because an **existence that contains infinity must define it** (the container for the infinity)**. You cannot resolve something that is infinitely expansive nor have we ever seen it**. No definedness… no resolution... no emergence... and that means… no existence...

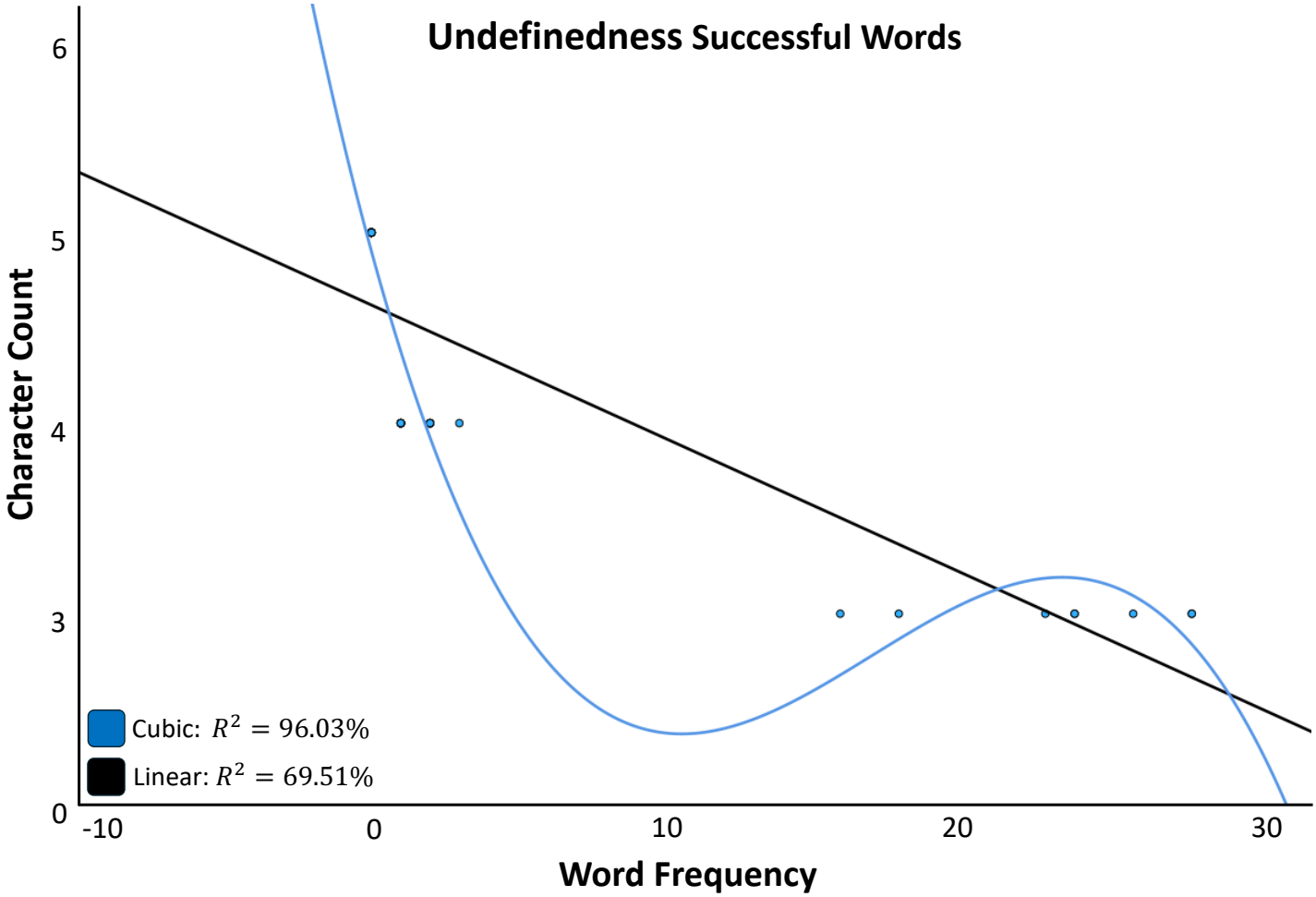
This figure reveals that **meaning doesn't spring from maximum randomness** but from that precise **sweet spot where order and chaos dance together**—where entropy is just **low enough to allow the structured letter sequences** that word emergence requires, yet **high enough to maintain the exploratory freedom** necessary for discovery. The narrow range between these conditions—mere decimal points on the entropy scale—represents the razor's edge between chaos and order, between potential and structure, between what is possible and what is... **it is like this chart maps the thermodynamics of meaning itself**.



When we plot the trials by **word frequency and character count by condition**, another highly significant pattern emerges. I can fit **two types of regression,** statistical models that describe the shape of the relationship: 1) **linear—found in normally distributed** phenomena, and 2) **cubic—found in exponentially growing phenomena**.

We can use a statistic called R^2, which measures the ability of one variable to explain why the scores on the other variables occur in the pattern they do. If we have an R^2 of 0%, then the two variables are entirely unrelated; if we have an R^2 of 100%, it means that every score on one variable corresponds exactly to a score on the other variable without any deviations. When we look at the Nothing Condition, we see that the **linear** $(\mathbf{51.00}\%)$ and **cubic** $(\mathbf{64.69}\%)$ Regression analyses explain significant variability in the relationship between word frequency and character count; however, the **relationship is restricted**.

When we look at the **same relationship** in the **Undefinedness Condition**, a striking pattern emerges with statistical support. The most notable visual finding is that **the Undefinedness Condition is much less restricted than the Nothing Condition**—showing more successful trials across three-, four-, and five-character words. Most importantly, the regression statistics reveal a striking pattern with **the linear relationship exceeding the Nothing Condition regressions entirely** $(\mathbf{69.51}\%)$. Yet, **the cubic regression demonstrated a near-perfect fit** $(\mathbf{96.03}\%)$**—**one of the highest R^2 values I have ever seen.



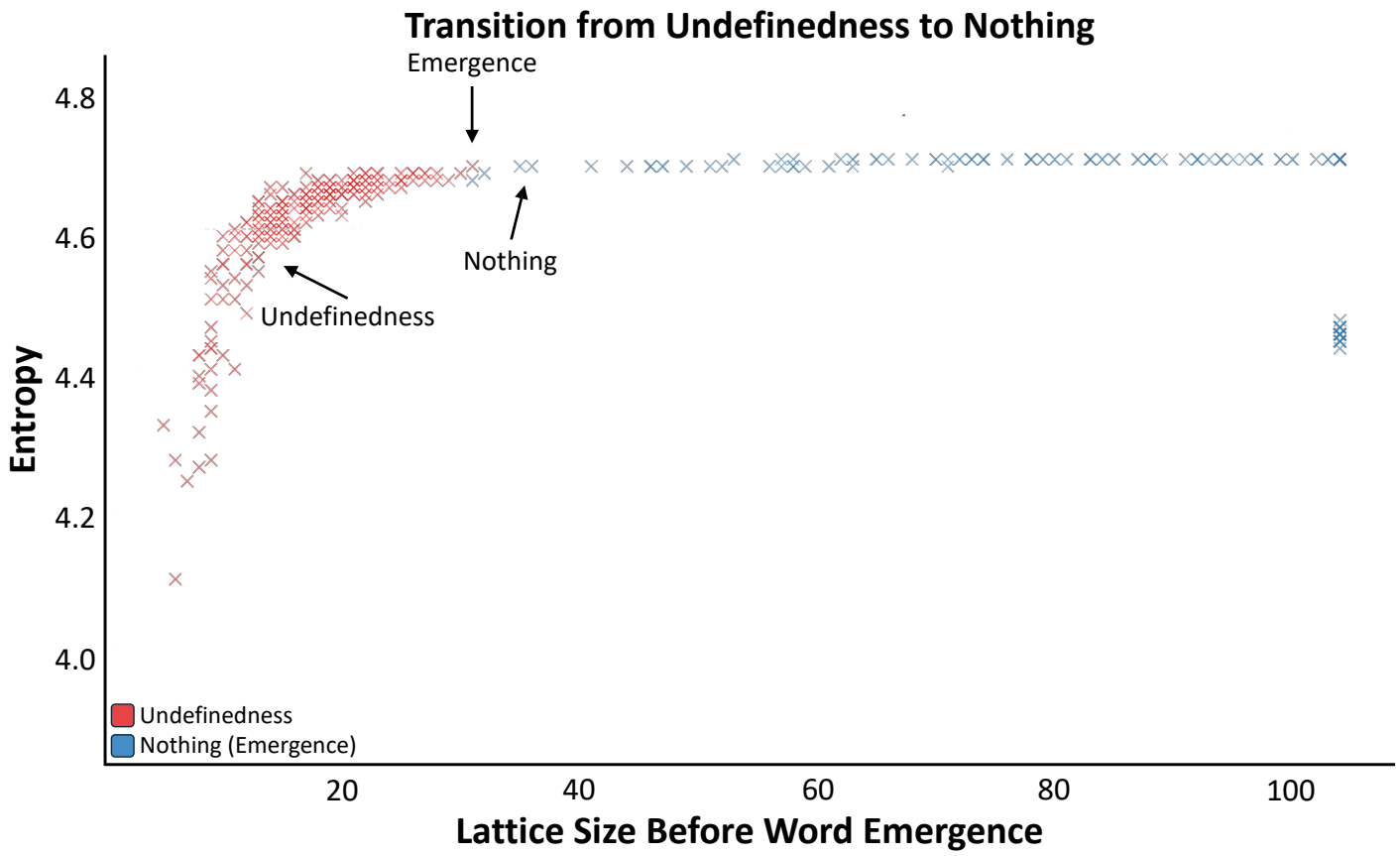
It's clear that the Undefinedness Condition distributes word emergence in line with normal distributions and exponential growth curves far better than the Nothing Condition. **The difference in explanatory power ($+18.51$ Linear, $+31.34\%$ Cubic) favors Undefinedness**. When look closer at the relationship between Entropy and Final Lattice Size, an incredible pattern emerges, as shown in the table and figure below. The relationship that emerges was an **exponential growth curve that flatlines as the Final Lattice Size rises with Entropy**.

Table 3

Curvilinear Model Fits Across Lattice Size Phase Locks

Model	Combined	Undefinedness	Nothing (Emergence)
Linear	2.30%	49.20%	17.90%
Logarithmic	0.10%	65.90%	15.20%
Inverse	2.90%	79.50%	11.80%
Quadratic	28.40%	73.70%	23.70%
Cubic	**31.10%**	**82.50%**	**24.60%**
Compound	2.20%	47.00%	17.90%
Power	0.10%	63.60%	15.20%
S	3.20%	77.70%	11.80%
Growth	2.20%	47.00%	17.90%
Exponential	2.20%	47.00%	17.90%

Note n = 630. This table reports R^2 values for multiple curve fit models applied to entropy trajectories across lattice size and conditions, allowing identification of the dominant structural shape. The cubic model consistently outperforms all other models.



When we plot the relationship between **Final Lattice Size and Entropy,** then **color-code them by condition**, we see that the **Undefinedness (Red)** and **Nothing (Blue)** conditions have no overlap (one case forced for statistical purposes), where **the lowest Entropy** came from **words that resolved only in the Undefinedness Condition** and **transitions to the Nothing Condition as Entropy rises**. This transition supports the previous findings that **the Undefinedness Condition allows** for **more variation**, is **more efficient in resolving words**, and is **more effective with repeated word emergence,** which far exceeds that of the other conditions. Thus, it appears that the Undefinedness Condition occurs before the Nothing Condition, supporting my hypothesis that the Nothing Condition has more structure than the Undefinedness Condition.

I conducted an exploratory structural test by **running ten regressions** across the most common distribution shapes across the three conditions. The conditions were the 1) **Undefinedness segment**, 2) **Nothing segment**, and 3) **combined segments**, treating it as a single variable. I aimed to examine the shapes of the components and their sequential alignment, estimating how these two conditions work together to resolve words. In Table 3, you can see ten R^2 values across all three conditions. **The results were unequivocally clear: the cubic model far exceeded any other regression shape**, suggesting that this **emergence pattern reflects the same cubic exponential growth curve I found throughout the other papers**.

When we investigate this relationship further by examining **the frequency of the Character Count of the resolved words by condition**, we see **a clean divide between the Undefinedness Condition**, only resolving three- and four-character words, **and the Nothing Condition**, only resolving five-character words. I intentionally restricted the Nothing Condition to five-character words. However, the word pool in **this experimental paradigm favored five-character words; yet the Undefinedness Condition never resolved on a five-character word because it would always resolve on the less complex three- and four-character words**. Then, after Entropy increases with the lattice size, **it flips into the Nothing Condition**, where all resolved words are five characters.

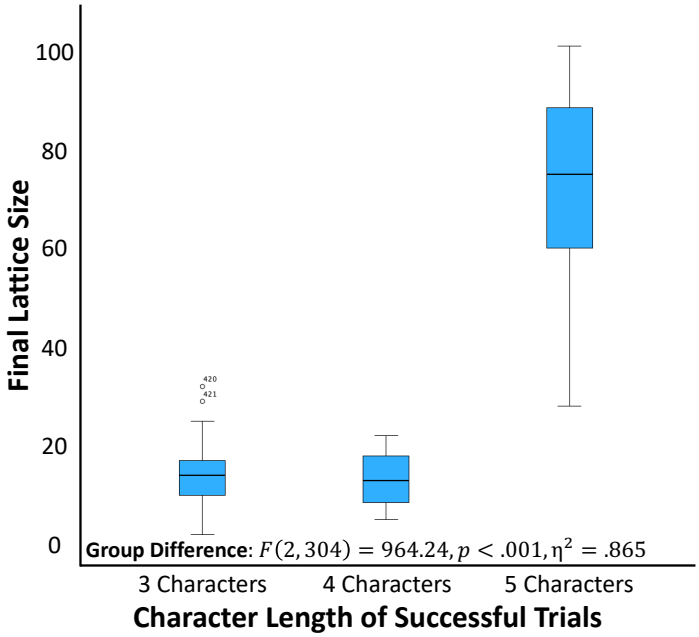
Table 4

Resolved Word Character Count by Condition

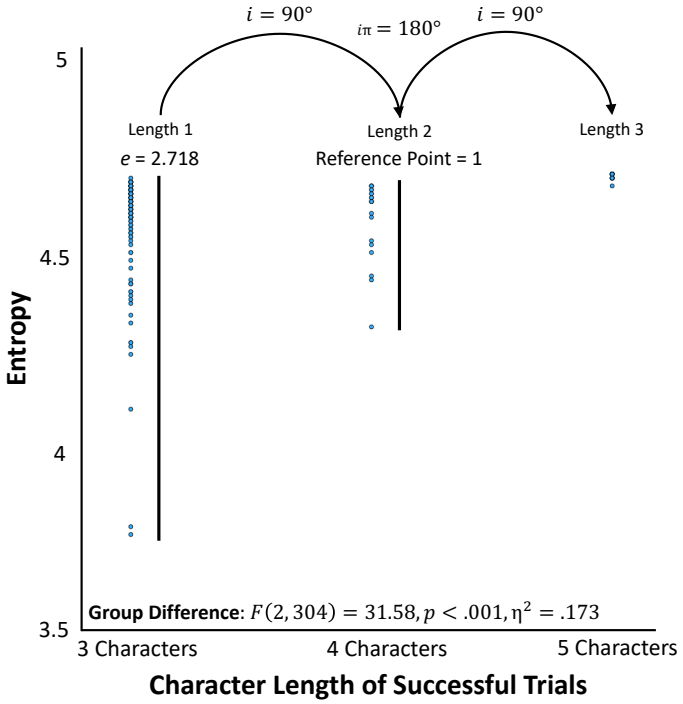
Condition	Three Characters	Four Characters	Five Characters
Undefinedness	187	23	0
Nothing	0	0	95
Infinity	0	0	0

Note. n = 630. Character count frequency in resolved words by condition.

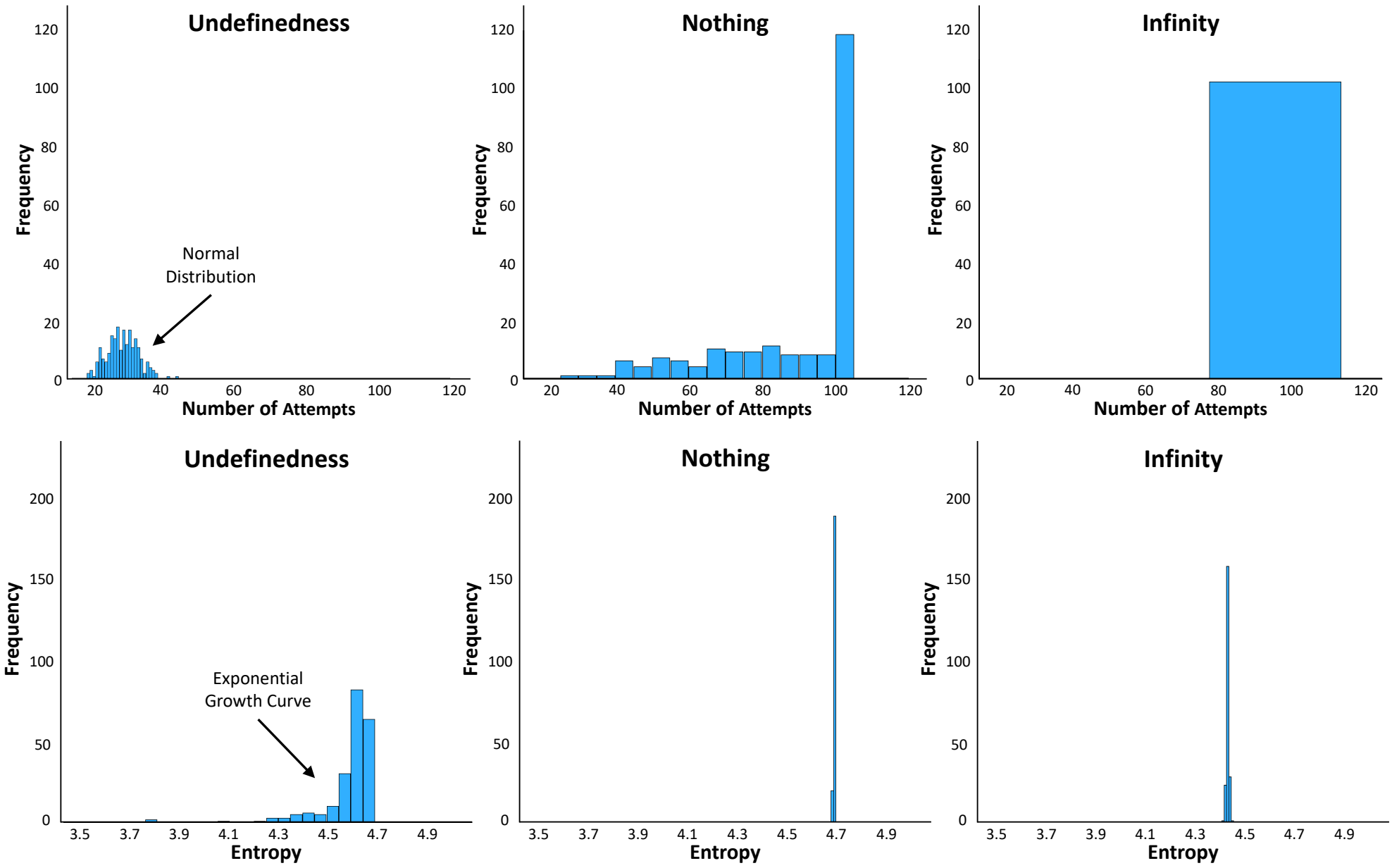
When we examine the transition between the two conditions, we see that **the Undefinedness Condition always resolves three- and four-character words**, never building enough Entropy for a five-character word to emerge. Only **after the lattice size increased sufficiently**, making room for more complex words, **did the system transition into** favoring five-character words, as we see in the Nothing Condition. This relationship confirms my hypothesis that **the Nothing Condition has definedness** and **cannot be the starting condition,** as it requires another starting condition to emerge, **supporting the concept of Undefinedness as the origin of existence**.



A closer examination of the resolved words across conditions revealed **a notable explanation as to why the Undefinedness Condition exclusively resolved three- and four-character words**. In the left figure, we see that the **three- and four-character words resolved much earlier than the five-character words,** and in proportion to the Final Lattice Size. In the right figure, we see **that simple structures (three- and four-character words) are more likely to emerge when Entropy is low, whereas more complex structures (five-character words) are more likely to emerge once Entropy reaches an increasing threshold**. We can even see Euler's Identity ($e^{i\pi}$) pop up when we examine the entropy distributions by character count. That identity has great value in *The Theory of Existence*.

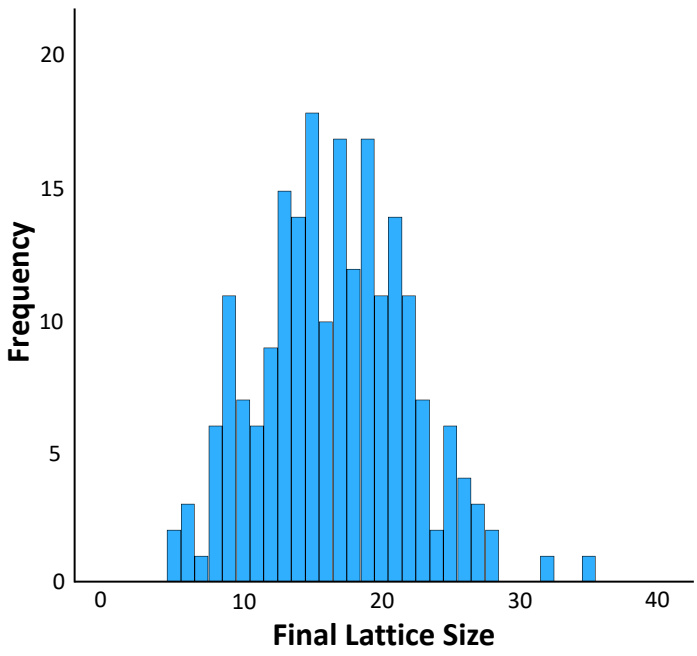


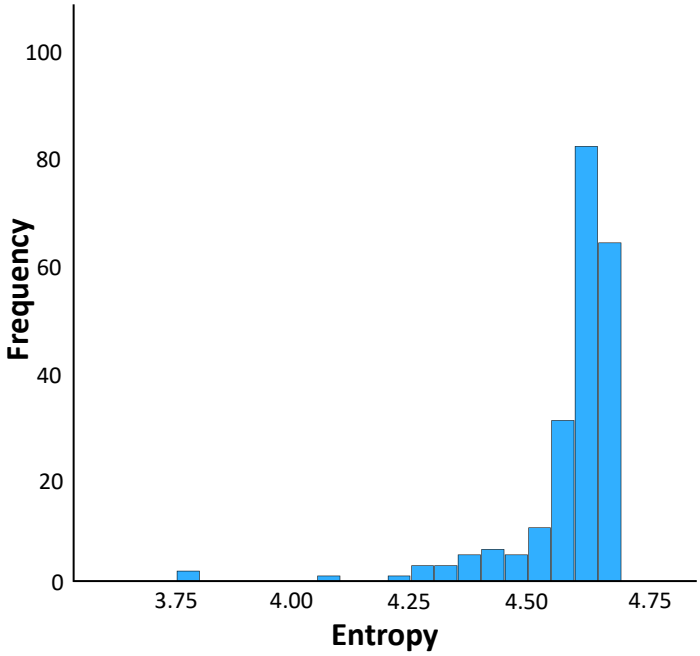
The laws of thermodynamics suggest that Entropy is constantly increasing, which we see here. The explosive finding is that **complex structures are more likely to emerge after Entropy increases**, suggesting that order emerges from and after chaos becomes chaotic enough to allow it. This finding suggests that in the process of entropy increasing **new structures are more likely to emerge.** In other words, as a system starts to lose order over time, new order is likely to emerge from it, which explains why we have so much order in the universe instead of everything diverging into chaos. Alrighty, folks, **it is time to check for 1) the normal distribution and 2) the exponential growth curve**—the **two defining distributions of existence** and if they match one of the experimental conditions.



These six graphs reveal the dramatic differences between experimental conditions, with the top row showing the number of attempts required for each condition to resolve words, and the bottom row displaying the entropy (chaos level) distributions for each condition.

The Nothing and Infinity Conditions demonstrated distributions that are **rigid and not consistently found anywhere in existence**. Quite simply, **existence would not function if it followed the distributions in the Nothing or Infinity Condition because they lack sufficient variation, consistency, stable entropy development**.
The condition that best reflects existence is shockingly obvious to see, as only the Undefinedness Condition produced a normal distribution and an exponential growth curve; both distributions are **nearly perfect, textbook examples** of these distributions, as we see in the figures above. We see that the **Final Lattice Size tended to follow a normal distribution** and that this **normal distribution pattern supports the exponential growth curve in Entropy**. **These results are exactly how existence works** and why order emerges from chaos. It's why **the concept of undefinedness must be the correct conceptualization of the starting conditions of existence**.





Jaw-Dropping, Conclusive, & Beautiful

What an experiment, no? I did not expect the findings to be this strong. Imagine you are watching magic happen right before your eyes. ***The Lattice Experiment*** **has revealed something mind-blowing about how order emerges from chaos**—and it completely flips everything we thought we knew about how the universe works. When we **let random letters organize themselves without forcing** them into predetermined boxes, something incredible happens—**real words start appearing more often and faster than when we try to control them.**

It is like the difference between letting a river find its own path down a mountain versus trying to force it through a pre-built channel. The river that flows freely moves faster and creates more beautiful and varied patterns along the way. My experiment shows that this same principle **might explain how everything in existence**—from galaxies to consciousness—**comes to be**. The secret is not more control or more randomness; it's letting structure and meaning discover each other naturally and letting existence do what it does by default.

The most jaw-dropping discovery was **completely the opposite of what anyone would expect**. The findings with the Entropy measure were among the most shocking. You would think that **more chaos would make it harder to form words**, right? Well, it turns out **the Undefinedness Condition had less chaos than the Nothing Condition,** but somehow **created far more resolved words**. It is like discovering that a slightly organized bedroom helps you find your stuff faster than a completely messy one—but **the room organized itself**. It means that **order does not come from total randomness or someone imposing strict rules**; instead, it emerges when **conditions are free to organize themselves** into just the right balance of order and potential.

Think of it like a jazz band where the musicians are **not following a rigid script**, but they are **not just making random noise** either. They are **creating structure together** as they play, and that is where the magic happens.

Undefinedness does not compel anything to happen, but it also does not prevent anything from happening; thus, systems naturally find their sweet spot between chaos and order.

The efficiency results were absolutely shocking. The **Nothing Condition** was like a student cramming for a test, taking **around 90 tries** to finally resolve a word—basically failing until the very last moment. Meanwhile, the **Undefinedness Condition** was like that naturally gifted student who just "gets it," forming words in **under 20 tries** almost every time (like a show-off, geeeezzzzz). However, **the Undefinedness Condition was not just faster**; **it was way more creative and varied** in how it succeeded. This massive difference shows us something important: sometimes the rules that seem smart and sophisticated actually make everything more complicated.

The **Nothing Condition** was like **forcing someone to write a poem using exactly five-letter words**—sounds reasonable, right? It turns out this “reasonable” rule made the system struggle and waste tons of effort searching in all the wrong places. The **Undefinedness Condition was like telling someone, "write a poem," and stepping back**. **Without being forced** into that five-letter box, **words naturally resolved** into their most comfortable lengths—three- and four-characters. It demonstrated that when you stop micromanaging, they do not **just work better**; **they work way better** (sound familiar? What’s your boss’s email… I’ll tell them, personally).

The statistics also tell an incredible story that backs up all the discoveries. We found that **bigger, more complex words always required more effort to resolve**, which makes perfect sense and matches a basic law of physics that says, "more complex stuff takes more energy." The **Undefinedness Condition was brilliantly efficient, consistently resolving lower-effort trials** and getting amazing results without breaking a sweat. Even more stunning, when I ran ten different regressions, each one pointed to the same conclusion: **the Undefinedness Condition follows the most observed pattern of existence—a cubic relationship—that matched existence with 96% explanatory power**; practically perfect. This same mathematical signature shows up everywhere in nature, from how galaxies form to how your cells divide. It is like we discovered that *The Lattice Experiment* was following the universe's instruction manual, **showing the relevance of the concept of undefinedness everywhere**.

These results flip the script on our current scientific understanding of how phenomena emerge into existence. For decades, **we have assumed that you need maximum chaos to get maximum potential**—like shaking up a box of puzzle pieces to find new combinations. However, *The Lattice Experiment* demonstrated the opposite: **the sweet spot for emergence is not maximum randomness or control**; it's something right in between—**just enough freedom to explore without getting lost in chaos**. This discovery suggests that countless domains in physics, biology, and brain science might be using a conceptualization of emergence with a flawed foundational assumption: **that nothing is the starting condition of emergence when nothing itself is already emergence**.

Even more fascinating, the jump from the Undefinedness Condition to the Nothing Condition does not happen gradually—**it discretely ignites at entropy tipping points**, like water instantly turning to steam at 212 degrees. This finding explains why evolution sometimes makes sudden leaps, why ecosystems shift dramatically overnight, and why breakthroughs in fields often seem to come out of nowhere. **Existence loves clean, discrete transitions** between different degrees of complexity, and *The Lattice Experiment* caught this process in action.

Another surprising finding emerged when I **loaded the experiment with more five-character words** (giving them the best chance to appear)—the **Undefinedness Condition always resolved before five-character words** could emerge. It was like walking into a candy store filled with expensive, gourmet chocolates, but choosing the simple candy bar instead because you walked by it when you entered the store. The system **repeatedly chose three- and four-character words, even though five-character words were more abundant** and easier to find. This finding reveals something profound about how existence functions: **when left alone, phenomena do not try to be as complex as possible**—they try to be **maximally effective and efficient**.

Think about this: **a bird's wing is not the most complex flying machine**, but it is **incredibly effective and efficient because of its simplicity**, not despite it. The Undefinedness Condition was like that bird, naturally finding the sweet spot of "just complex enough to work perfectly." Meanwhile, the **Nothing Condition was like forcing**

every bird to have the exact same, complex wing size, whether it's a hummingbird or an eagle. Sure… you can make it work, but you are fighting against the natural order and expending way more energy in the process. This study shows that **the optimal degree of complexity is not the highest—it's the one that works best**.

The ultimate finding of this study was that the **Undefinedness Condition did not just work better**—it produced **nearly textbook-perfect** 1) **normal distribution** for emergence and 2) **exponential growth curve** for complexity escalations, which are the universe's favorite distributions. These patterns appear in everything: how stars are scattered across galaxies, how animals evolve, how your height compares to your classmates, how viruses spread, how your brain cells connect—**literally everything that emerges naturally follows these identical distributions**. **Only the Undefinedness Condition captured these fundamental rhythms** of existence itself!

The Undefinedness Condition in *The Lattice Experiment* functioned like a mini universe that followed the same rules of existence. Meanwhile, the **Nothing and Infinity Conditions created rigid, artificial patterns that you would never find anywhere in nature**—they were like statistical aliens that do not fit reality. These distributions disqualify the Nothing and Infinity Conditions, demonstrating that I have tapped into something profound and universal about the mechanisms of existence. The same mathematical heartbeat that governs galaxies and ecosystems was beating in our little letter lattices when we let definedness do its thing—come into existence without any justification or anything stopping it.

The Theorem of Undefined Emergence: It's Not Content… It's Structural Form

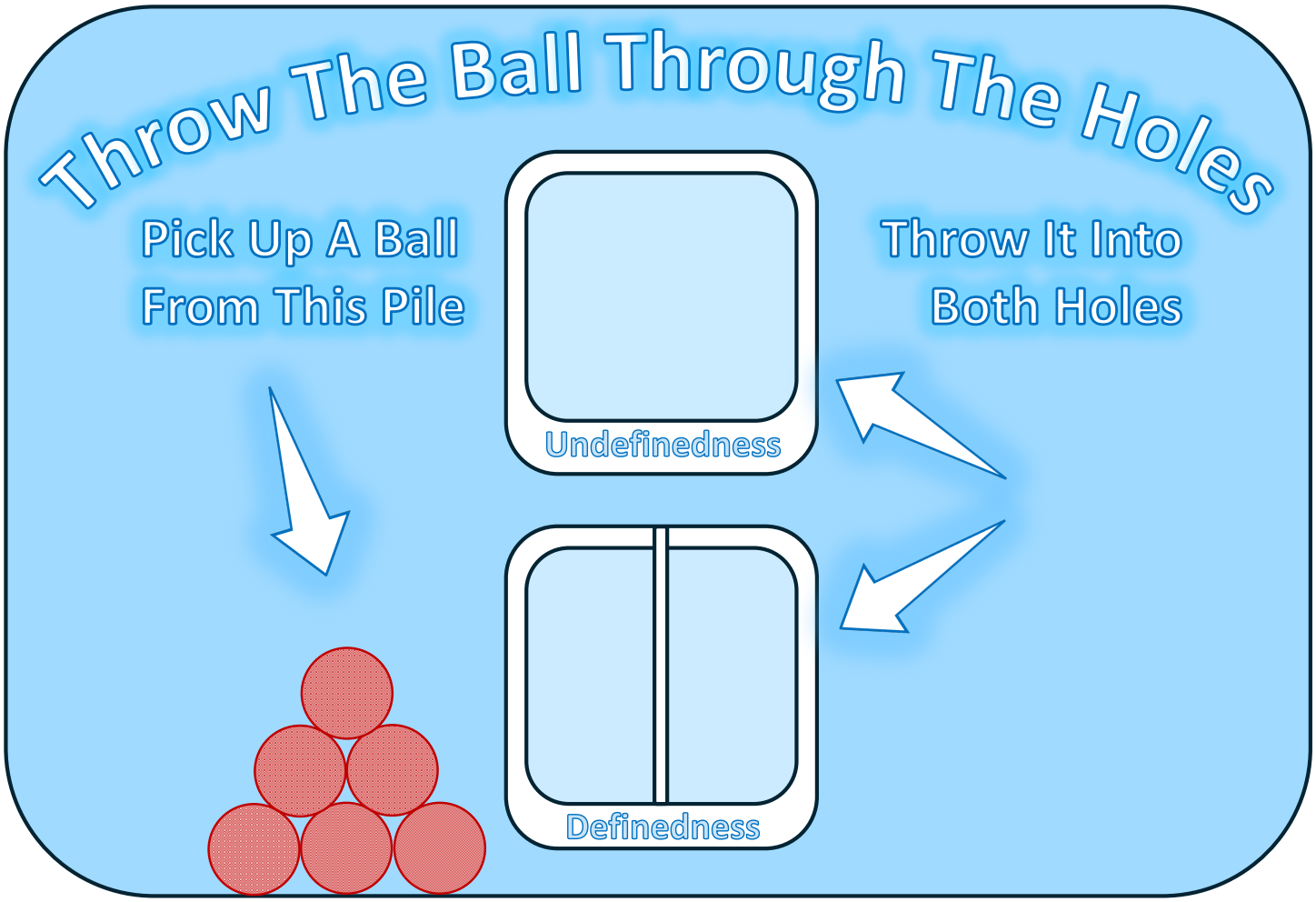
A critical aspect of this experimental paradigm that strengthens these findings is **the deliberate bias I introduced in favor of the Nothing Condition through the composition of the word pool**. I intentionally structured the word pools to favor five-character words, **creating an artificial advantage for the Nothing Condition** since it exclusively **resolved five-character words**. At the same time, the Undefinedness Condition must compete across multiple character lengths without predetermined slot sizes. The lattice size started at 5×5 square, which means **the five-character words were available to resolve for both conditions right away**. However, **achieving five-character words required more entropy to generate**, so **the Undefinedness Condition grabbed up all the three- and four-character words** before the lattice was large enough to generate the five-character words. In other words, I could have made the word pool 1 three-, 2 four-, and 100 five-character words, and **the Undefinedness Condition would consistently outperform the Nothing Condition** because of **the limitation of the slot size** existing before the words emerged. I stacked the deck against the Undefinedness Condition to show that any superior performance could not be attributed to favorable parameters or statistical artifacts.

The remarkable dominance of the Undefinedness Condition, despite its structural disadvantage in the word pool, demonstrates that **the observed differences are fundamental rather than circumstantial**. The results reflect distinct emergence mechanisms rather than mere variations in efficiency within the same process. The **Nothing Condition**, by its very nature, **cannot produce the variability, resolution speed, and repeated success demonstrated** by the **Undefinedness Condition** because these qualities require the complete absence of predetermined structure—the **simultaneous co-emergence of both slot size and word** rather than forcing content to conform to preexisting constraints. In other words, **the Nothing Condition cannot reflect existence**.

This structural difference explains why the **Undefinedness Condition naturally generates the distributions found throughout natural systems**—the normal distribution and the exponential growth curve—while the Nothing Condition produces artificial, rigid patterns that bear no resemblance to real-world emergence phenomena. That structural difference in the output operates **on the mechanistic level**, so it does not matter how one varies the parameters; it does not matter if you set the Nothing Condition to 6 or 7, it does not matter if the frequency of the character counts in the word pool changes, and it does not matter if you set the maximum lattice size beyond 100—**the same pattern will always emerge**. This experimental paradigm thus isolates the core principle of the concept of undefinedness rather than optimizing parameters, revealing that the mechanism itself, not its calibration, determines the fundamental character of emergence processes.

This fundamental principle is called the ***Theorem of Undefined Emergence***. When two conditions start identically except for one possessing no constraints and the other possessing any constraint, **the unconstrained condition is the only condition capable of producing the full range of possible emergence, resulting in more varied, frequent, and faster resolutions**. It is invariant across content, encoding, slot size, or word pool composition—**purely a function of conditional constraint**. The Nothing Condition, no matter how optimized, **fails because of any constraint**. It's not about the phenomenon, but if the conditions permit undefined emergence.

You might then expect the Infinity Condition to be unconstrained… right? Infinity means endless possibilities? However, **the Infinity Condition is not unconstrained**. It is constrained by the requirement that something needs to be infinite before resolving the emergence. The problem? **That constraint, by definition, is impossible to overcome as something infinite never ends.** There is never a point where something infinite clears the bar required for emergence under infinity because there is no point when infinity is achieved. **Infinity, by definition, is never achieved** because you cannot achieve something that has no endpoint, no resolution point. It is why words never resolved in the Infinity Condition. Take a moment to focus and **try out this figure below:**



When you first saw this image, and you went to think about what would happen when you picked up the ball and threw it, when you started this paper, **you did not know I was going to ask you to do it, right?** At that time, this thinking/visualizing experience you just had did not have definedness, but when you saw this image, that thinking/visualization emerged because... nothing was stopping you from thinking about it or visualizing it.

You could have thought of anything and visualized anything. Yet, because your experiences and memory have allowed for it, those thoughts and visuals were **coherent and sufficiently complex**. The likelihood of being able to do that if we could only think in certain ways decreases instantly with any constraint on our thinking process. For example, if I had started off the prompt with an explanation of the physics of throwing a ball, and then asked

you about the physics of throwing a ball, that information and **those thoughts would have blocked the real experience you just had**. However, that information and those thoughts did not block the thoughts you emerged from this image. This is how existence and emergence came to be, with no justification needed.

An Emerging Perspective on Emergence

The implications extend beyond intellectual theory to practical applications in artificial intelligence, creativity research, and the design of complex systems. The **Undefinedness Condition's superior performance reveals a universal favorable bias toward balanced order with chaos**, the total absence of definedness at emergence, and flexible starting conditions rather than rigid, complex, and predetermined constraints. The implications (why it is important) of these findings reverberate across virtually every domain of human knowledge and inquiry, **fundamentally reshaping our understanding of emergence, causation, and the nature of existence**. If the concept of undefinedness represents the true origin condition of emergence, then our entire framework for understanding how complex systems develop, evolve, and sustain themselves **requires radical reconceptualization**. This experimental evidence suggests that the most sophisticated phenomena in our universe—from consciousness to quantum mechanics—may all operate according to the same principles demonstrated here.

Most profoundly, these findings provide **empirical support for resolving ancient philosophical paradoxes about existence itself**. The concept of **undefinedness resolves the infinite regress paradox,** as undefinedness cannot have a prior cause because it cannot have anything; it simply does not exist—there are no restrictions on emergence and no foundation from which something must arise. The experimental paradigm demonstrates that meaningful patterns emerge **most effectively under conditions supported by the concept of undefinedness**, indicating that existence operates according to the same principle, with complexity and stability arising from the self-organization of **constraints with emerging phenomena**, not after any predetermined nothing or infinity.

Perhaps most profoundly, these findings suggest that **the universe is not a machine following predetermined rules, but rather an ongoing creative process where new possibilities continuously emerge** due to the concept of undefinedness. Existence indeed has mechanisms with mechanistic processes, but **the content through which those mechanisms arrange chaos into order is seemingly endless**. Each moment represents a fresh emergence event, with existence constantly reinventing itself while maintaining coherent patterns. We can **acknowledge its mechanistic consistency**, then guide our attention to seeing how it is a **genuinely creative process** where novelty, meaning, and complexity emerge continuously, at all moments, everywhere…

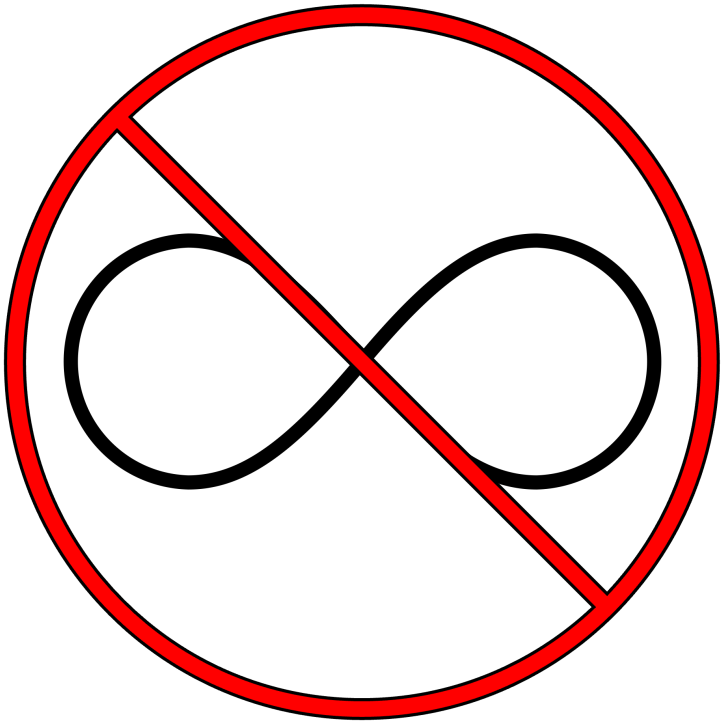
Infinities & Paradoxes: The Ultimate Killers of Discovery

Alrighty, folks, let's talk about the elephant in the room. I know how much people love the concept of **infinities and paradoxes,** and, as concepts with immense conceptual value, **they are not something that exists in the universe** because they are structurally impossible. For something infinite to exist the container in which the infinite phenomenon resides must be able to fully hold it, **which is not possible because infinity never ends**. When you approach a paradox, it does not mean we have hit something unknowable; it means we have made an incorrect assumption. **We have never recorded something physically infinite nor physically paradoxical**. All phenomena, whether fractals, black holes, or irrational numbers like π and *e*, are constrained by physical limits. For example, if the Planck length is the universal minimum (which it is), **values like π and *e* become meaningless beyond the 35^{th} digit**. Infinity may be a useful concept in math. Still, in a relational reality, it is merely a placeholder—**a marker for the death of discovery**. By inserting infinity into our theories instead of acknowledging gaps in our understanding, we risk closing the door to new possibilities and stifling intellectual exploration.

The root of these irrational numbers traces back to the Big Bang, precisely the first recursive propagation encoded in Euler's Identity. At this moment, π, *e*, and other constants co-derived, existing only in relation to each other; we know this sequence occurred from Paper 1: The Unification of Mathematics: *The Theorem of Constants Co-Derivation*. **Euler's Identity is still valid if you cut off all the numbers after the 35^{th} digit**, which is

what happened at the Big Bang. If you think about it, irrational numbers are just that, irrational, illogical, and nonexistent. The reason we could never conceptualize them is because they do not exist in an endless form.

Fractals and black holes are also bound by finite principles. **Fractals may appear infinite in their self-similarity, but they are ultimately constrained by the physical parameters of the phenomena or system that generates them**. Similarly, black holes do not collapse into infinite singularities. Instead, they bottleneck as recursive propagations slow dramatically under increasing complexity, **creating extreme but finite conditions that are also bound by entropy**. These apparent paradoxes dissolve when we reject the concept of infinity altogether.



In relational reality, undefinedness and infinity cannot exist because **reality requires co-definedness**. **No phenomenon can exist in isolation from everything**. An object-based phenomenon is undefinable because **all definition comes from comparison to other things**, so we could never fully define it. This **concept of relational reality started with Einstein's general relativity**. There is no logical reason to keep it infinity. **Infinity is what you get when you refuse to let yourself fail**. But failure—and the discomfort of admitting we do not know—is not a flaw; it is an essential, non-negotiable part of Truth-pursuits.

Existence has no paradoxes. If we encounter a paradox, we have made a wrong assumption. As people, we have been **standing on Step 10**, **straining to reach Step 20**, all while **failing to recognize that Step 2 was flawed** from the start. It does not matter how much we love or respect Step 2—holding onto it and patching the gaps with it or any other placeholder beyond "we do not know" compounds the problem. **Truth cannot emerge from shortcuts, abstractions, or overcomplications**; it can only be achieved by dismantling incorrect knowledge, **even when it's painful**, and building on a foundation that holds.

The Big Picture

So… here we are… **staring at something that might just change everything** we thought we knew about existence. What started as a simple experiment with randomly generated letters **has revealed the secret recipe the universe uses to create, well... everything**. When we embraced the concept of undefinedness—magic happened; real, measurable, universe-level magic. Words emerged faster, more creatively, and following the exact same distributions that govern star formation, brain functioning, and the evolution of species. We built a tiny universe that follows the same conditions as existence... and **existence whispered back to confirm…**

The findings are not really about the lattices; it is about understanding that the entire cosmos—me, you, this paper, grapes, quantum particles, social trends, galaxy clusters, and emotions—**might be one massive, ongoing creative process** where new possibilities are **constantly emerging because of the concept of undefinedness**. Every moment, everywhere, **existence is dancing into definedness** using the same principles we discovered in *The Lattice Experiment*. For 14 billion years, from the first spark of existence at the Big Bang to this very moment we share together, right here, right now… **it has been the same endless creative process,** driven by the concept of undefinedness. It means that **definedness emerges freely everywhere**—in your brain as you read this, in the stars being born light-years away, and in every heartbeat and thought humanity has spent on these questions. Now, those heartbeats and thoughts can move to **what we all do with these answers now that we know them**…

Existence is, quite simply, **an ongoing creative masterpiece,** where meaning and structure continuously emerge because that's just how it works when there is nothing that can ever stop it. **We are not *just* participants in this process—we ARE this process**. So… when you **stare at the ceiling late at night but see the universe instead**, all those galaxies you see are the universe's way of **singing the tune of existence** with stars and gravity. The visuals… in your mind… **it's not *just* your brain working**—it's the universe discovering something new about itself **through you**. We are all part of this same grand dance, always finding new moves, each moment… a possibility of beautiful emergence from the depths of undefinedness—that is, if undefinedness was something that could have depth, but of course, it can't… **it simply isn't**…

The Lattice Experiment Code

```
import random
import math
import string
import pandas as pd
from collections import Counter

# Load a basic dictionary
dictionary = {
    “space”, “grain”, “light”, “apple”, “tree”, “paper”, “water”, “fire”, “earth”,
    “sun”, “moon”, “star”, “book”, “pen”, “desk”, “cat”, “dog”, “bird”, “fish”,
    “grass”, “rose”, “oak”, “bread”, “meat”, “fruit”, “seed”, “rock”, “stone”,
“metal”,
    “gold”, “iron”, “wood”, “plastic”, “music”, “art”, “paint”, “blue”, “red”,
“green”,
    “black”, “white”, “time”, “day”, “night”, “week”, “north”, “south”, “east”,
“west”
}

# Functions to generate lattice and calculate entropy
def generate_lattice(size, vowel_prob):
    vowels = 'aeiou'
    consonants = ''.join(set(string.ascii_lowercase) - set(vowels))
    return [
        [random.choice(vowels if random.random() < vowel_prob else consonants) for _
in range(size)]
        for _ in range(size)
    ]

def calculate_entropy(lattice):
    flat = ''.join([''.join(row) for row in lattice])
    counts = Counter(flat)
    total = sum(counts.values())
    return round(-sum((c/total) * math.log2(c/total) for c in counts.values()), 2)

# Final recursive ignition trial with entropy tracking
def run_trial_with_entropy(condition, max_attempts=100):
    slot_length = 5
    result = {
        “condition”: condition,
        “word_found”: False,
        “slot_length”: None,
        “attempts_to_ignition”: 0,
        “final_lattice_size”: None,
        “entropy”: None,
        “word”: None
    }

    lattice_size = 5
    vowel_prob = 0.01 if condition == "infinity" else 0.2

    for attempt in range(1, max_attempts + 1):
        lattice = generate_lattice(lattice_size, vowel_prob)
        entropy = calculate_entropy(lattice)

        result.update({
            “attempts_to_ignition”: attempt,
            "final_lattice_size": lattice_size,
            “entropy”: entropy
        })
```

```
        for row in lattice:
            for length in range(3, 9):
                for start in range(len(row) - length + 1):
                    candidate = ''.join(row[start:start+length])
                    if condition == "nothing" and len(candidate) == slot_length and
candidate in dictionary:
                        result.update({“word_found”: True, “word”: candidate,
“slot_length”: len(candidate)})
                        return result
                    elif condition == “undefinedness” and candidate in dictionary:
                        result.update({“word_found”: True, “word”: candidate,
“slot_length”: len(candidate)})
                        return result
                    elif condition == "infinity" and len(candidate) >= 1000000:
                        result.update({“word_found”: True, “word”: candidate,
“slot_length”: len(candidate)})
                        return result

        lattice_size += 1

    return result

# Run full set of trials across conditions
def run_trials_with_entropy(conditions, trials_per_condition=20):
    results = []
    for condition in conditions:
        for _ in range(trials_per_condition):
            results.append(run_trial_with_entropy(condition))
    return results

# Run and collect results
conditions = [“nothing”, “undefinedness”, “infinity”]
final_batch_with_entropy = run_trials_with_entropy(conditions, trials_per_condi-
tion=20)

# Convert to DataFrame and summarize
df_final_batch = pd.DataFrame(final_batch_with_entropy)
successful_trials_final = df_final_batch[df_final_batch["word_found"] == True]

# Generate final summary statistics
summary_stats_final = successful_trials_final.groupby("condition").agg(
    avg_entropy=(‘entropy’, ‘mean’),
    median_entropy=(‘entropy’, ‘median’),
    avg_lattice_size=(‘final_lattice_size’, ‘mean’),
    median_lattice_size=(‘final_lattice_size’, ‘median’),
    avg_attempts=(‘attempts_to_ignition’, ‘mean’),
    median_attempts=(‘attempts_to_ignition’, ‘median’),
    count=(‘word_found’, ‘count’)
).round(2)

# Calculate success rate from full dataset
success_rate_overall = df_final_batch.groupby("condi-
tion")["word_found"].mean().round(2).reset_index(name="success_rate")
summary_stats_final.reset_index(inplace=True)
final_summary = pd.merge(summary_stats_final, success_rate_overall, on="condition")

# Print final summary
print(final_summary)
```

Table 5

Raw Data from The Lattice Experiment

Condition	Resolved	Slot Size	Attempts	Lattice Size	Entropy	Word
Undefinedness	TRUE	3	1	5	3.78	red
Undefinedness	TRUE	3	1	5	4.32	red
Undefinedness	TRUE	3	2	6	3.8	pen
Undefinedness	TRUE	3	2	6	4.1	dog
Undefinedness	TRUE	3	2	6	4.27	oak
Undefinedness	TRUE	3	3	7	4.24	red
Undefinedness	TRUE	3	4	8	4.26	sun
Undefinedness	TRUE	4	4	8	4.31	blue
Undefinedness	TRUE	3	4	8	4.38	sun
Undefinedness	TRUE	3	4	8	4.39	oak
Undefinedness	TRUE	3	4	8	4.42	day
Undefinedness	TRUE	3	4	8	4.42	oak
Undefinedness	TRUE	3	5	9	4.27	day
Undefinedness	TRUE	3	5	9	4.34	dog
Undefinedness	TRUE	3	5	9	4.37	cat
Undefinedness	TRUE	3	5	9	4.4	pen
Undefinedness	TRUE	4	5	9	4.43	moon
Undefinedness	TRUE	3	5	9	4.43	pen
Undefinedness	TRUE	4	5	9	4.44	wood
Undefinedness	TRUE	3	5	9	4.46	oak
Undefinedness	TRUE	3	5	9	4.5	pen
Undefinedness	TRUE	4	5	9	4.53	week
Undefinedness	TRUE	3	5	9	4.54	cat
Undefinedness	TRUE	3	6	10	4.42	pen
Undefinedness	TRUE	3	6	10	4.5	pen
Undefinedness	TRUE	4	6	10	4.52	fish
Undefinedness	TRUE	3	6	10	4.55	art
Undefinedness	TRUE	3	6	10	4.55	art
Undefinedness	TRUE	3	6	10	4.57	pen
Undefinedness	TRUE	3	6	10	4.59	dog
Undefinedness	TRUE	3	7	11	4.4	oak
Undefinedness	TRUE	4	7	11	4.5	book
Undefinedness	TRUE	3	7	11	4.53	art
Undefinedness	TRUE	3	7	11	4.57	cat
Undefinedness	TRUE	3	7	11	4.59	day
Undefinedness	TRUE	3	7	11	4.6	pen
Undefinedness	TRUE	3	8	12	4.48	day
Undefinedness	TRUE	3	8	12	4.52	cat
Undefinedness	TRUE	3	8	12	4.55	cat
Undefinedness	TRUE	3	8	12	4.55	oak
Undefinedness	TRUE	3	8	12	4.57	day
Undefinedness	TRUE	3	8	12	4.59	cat
Undefinedness	TRUE	4	8	12	4.59	week
Undefinedness	TRUE	3	8	12	4.61	oak

Undefinedness	TRUE	3	8	12	4.61	red
Undefinedness	TRUE	3	9	13	4.54	red
Undefinedness	TRUE	3	9	13	4.56	dog
Undefinedness	TRUE	3	9	13	4.56	dog
Undefinedness	TRUE	3	9	13	4.58	dog
Undefinedness	TRUE	3	9	13	4.59	art
Undefinedness	TRUE	3	9	13	4.59	oak
Undefinedness	TRUE	3	9	13	4.6	dog
Undefinedness	TRUE	3	9	13	4.6	red
Undefinedness	TRUE	3	9	13	4.61	oak
Undefinedness	TRUE	3	9	13	4.62	day
Undefinedness	TRUE	3	9	13	4.62	oak
Undefinedness	TRUE	3	9	13	4.62	pen
Undefinedness	TRUE	3	9	13	4.63	red
Undefinedness	TRUE	3	9	13	4.64	pen
Undefinedness	TRUE	3	9	13	4.64	red
Undefinedness	TRUE	3	10	14	4.58	red
Undefinedness	TRUE	3	10	14	4.59	day
Undefinedness	TRUE	3	10	14	4.59	pen
Undefinedness	TRUE	3	10	14	4.6	sun
Undefinedness	TRUE	3	10	14	4.6	sun
Undefinedness	TRUE	3	10	14	4.61	day
Undefinedness	TRUE	3	10	14	4.61	day
Undefinedness	TRUE	3	10	14	4.61	oak
Undefinedness	TRUE	3	10	14	4.62	pen
Undefinedness	TRUE	3	10	14	4.62	red
Undefinedness	TRUE	4	10	14	4.63	fire
Undefinedness	TRUE	3	10	14	4.63	pen
Undefinedness	TRUE	3	10	14	4.65	red
Undefinedness	TRUE	3	10	14	4.66	day
Undefinedness	TRUE	3	11	15	4.58	cat
Undefinedness	TRUE	3	11	15	4.59	sun
Undefinedness	TRUE	3	11	15	4.6	day
Undefinedness	TRUE	3	11	15	4.6	sun
Undefinedness	TRUE	4	11	15	4.6	time
Undefinedness	TRUE	3	11	15	4.61	oak
Undefinedness	TRUE	3	11	15	4.61	sun
Undefinedness	TRUE	3	11	15	4.62	cat
Undefinedness	TRUE	3	11	15	4.62	dog
Undefinedness	TRUE	3	11	15	4.62	red
Undefinedness	TRUE	3	11	15	4.63	cat
Undefinedness	TRUE	3	11	15	4.63	dog
Undefinedness	TRUE	4	11	15	4.63	week
Undefinedness	TRUE	3	11	15	4.64	art
Undefinedness	TRUE	3	11	15	4.64	day
Undefinedness	TRUE	4	11	15	4.64	fire
Undefinedness	TRUE	3	11	15	4.64	oak
Undefinedness	TRUE	3	11	15	4.66	day

Undefinedness	TRUE	3	12	16	4.59	red
Undefinedness	TRUE	3	12	16	4.59	sun
Undefinedness	TRUE	3	12	16	4.6	art
Undefinedness	TRUE	3	12	16	4.6	art
Undefinedness	TRUE	3	12	16	4.6	cat
Undefinedness	TRUE	3	12	16	4.61	pen
Undefinedness	TRUE	4	12	16	4.63	rose
Undefinedness	TRUE	3	12	16	4.64	cat
Undefinedness	TRUE	3	12	16	4.65	art
Undefinedness	TRUE	3	12	16	4.65	pen
Undefinedness	TRUE	3	13	17	4.61	red
Undefinedness	TRUE	3	13	17	4.62	cat
Undefinedness	TRUE	3	13	17	4.63	day
Undefinedness	TRUE	3	13	17	4.63	day
Undefinedness	TRUE	3	13	17	4.63	oak
Undefinedness	TRUE	3	13	17	4.63	sun
Undefinedness	TRUE	3	13	17	4.63	sun
Undefinedness	TRUE	3	13	17	4.63	sun
Undefinedness	TRUE	3	13	17	4.64	day
Undefinedness	TRUE	3	13	17	4.64	day
Undefinedness	TRUE	3	13	17	4.65	cat
Undefinedness	TRUE	3	13	17	4.65	cat
Undefinedness	TRUE	3	13	17	4.65	day
Undefinedness	TRUE	3	13	17	4.65	dog
Undefinedness	TRUE	3	13	17	4.65	red
Undefinedness	TRUE	3	13	17	4.66	red
Undefinedness	TRUE	3	13	17	4.68	cat
Undefinedness	TRUE	3	14	18	4.62	sun
Undefinedness	TRUE	3	14	18	4.63	day
Undefinedness	TRUE	3	14	18	4.64	cat
Undefinedness	TRUE	3	14	18	4.64	day
Undefinedness	TRUE	3	14	18	4.64	dog
Undefinedness	TRUE	3	14	18	4.65	art
Undefinedness	TRUE	3	14	18	4.65	cat
Undefinedness	TRUE	3	14	18	4.66	cat
Undefinedness	TRUE	3	14	18	4.66	cat
Undefinedness	TRUE	3	14	18	4.66	sun
Undefinedness	TRUE	3	14	18	4.67	art
Undefinedness	TRUE	3	14	18	4.67	sun
Undefinedness	TRUE	3	15	19	4.63	dog
Undefinedness	TRUE	3	15	19	4.64	red
Undefinedness	TRUE	4	15	19	4.64	west
Undefinedness	TRUE	3	15	19	4.65	art
Undefinedness	TRUE	3	15	19	4.65	art
Undefinedness	TRUE	3	15	19	4.65	day
Undefinedness	TRUE	3	15	19	4.65	oak
Undefinedness	TRUE	3	15	19	4.65	oak
Undefinedness	TRUE	3	15	19	4.65	pen

Undefinedness	TRUE	3	15	19	4.65	sun
Undefinedness	TRUE	4	15	19	4.65	tree
Undefinedness	TRUE	3	15	19	4.66	day
Undefinedness	TRUE	3	15	19	4.66	dog
Undefinedness	TRUE	3	15	19	4.66	oak
Undefinedness	TRUE	3	15	19	4.66	pen
Undefinedness	TRUE	3	15	19	4.67	art
Undefinedness	TRUE	3	15	19	4.67	day
Undefinedness	TRUE	3	16	20	4.62	oak
Undefinedness	TRUE	4	16	20	4.63	gold
Undefinedness	TRUE	3	16	20	4.65	cat
Undefinedness	TRUE	3	16	20	4.65	cat
Undefinedness	TRUE	3	16	20	4.65	dog
Undefinedness	TRUE	3	16	20	4.65	red
Undefinedness	TRUE	3	16	20	4.65	sun
Undefinedness	TRUE	4	16	20	4.65	time
Undefinedness	TRUE	3	16	20	4.66	oak
Undefinedness	TRUE	3	16	20	4.66	sun
Undefinedness	TRUE	3	16	20	4.67	red
Undefinedness	TRUE	3	17	21	4.65	cat
Undefinedness	TRUE	3	17	21	4.65	red
Undefinedness	TRUE	3	17	21	4.66	cat
Undefinedness	TRUE	3	17	21	4.66	dog
Undefinedness	TRUE	4	17	21	4.66	iron
Undefinedness	TRUE	3	17	21	4.66	red
Undefinedness	TRUE	4	17	21	4.66	rock
Undefinedness	TRUE	3	17	21	4.67	cat
Undefinedness	TRUE	3	17	21	4.67	cat
Undefinedness	TRUE	3	17	21	4.67	dog
Undefinedness	TRUE	3	17	21	4.67	pen
Undefinedness	TRUE	3	17	21	4.67	sun
Undefinedness	TRUE	3	17	21	4.67	sun
Undefinedness	TRUE	3	17	21	4.68	day
Undefinedness	TRUE	3	18	22	4.64	pen
Undefinedness	TRUE	3	18	22	4.65	art
Undefinedness	TRUE	3	18	22	4.65	day
Undefinedness	TRUE	3	18	22	4.66	oak
Undefinedness	TRUE	3	18	22	4.66	oak
Undefinedness	TRUE	3	18	22	4.67	art
Undefinedness	TRUE	3	18	22	4.67	red
Undefinedness	TRUE	4	18	22	4.67	west
Undefinedness	TRUE	3	18	22	4.68	pen
Undefinedness	TRUE	3	18	22	4.68	sun
Undefinedness	TRUE	3	18	22	4.68	sun
Undefinedness	TRUE	3	19	23	4.65	red
Undefinedness	TRUE	3	19	23	4.66	day
Undefinedness	TRUE	3	19	23	4.66	oak
Undefinedness	TRUE	4	19	23	4.67	blue

Undefinedness	TRUE	3	19	23	4.67	cat
Undefinedness	TRUE	3	19	23	4.68	red
Undefinedness	TRUE	3	19	23	4.68	sun
Undefinedness	TRUE	3	20	24	4.66	oak
Undefinedness	TRUE	3	20	24	4.67	day
Undefinedness	TRUE	3	21	25	4.66	pen
Undefinedness	TRUE	4	21	25	4.67	east
Undefinedness	TRUE	3	21	25	4.67	pen
Undefinedness	TRUE	4	21	25	4.67	rock
Undefinedness	TRUE	4	21	25	4.67	wood
Undefinedness	TRUE	3	21	25	4.68	oak
Undefinedness	TRUE	3	22	26	4.67	pen
Undefinedness	TRUE	3	22	26	4.68	cat
Undefinedness	TRUE	3	22	26	4.68	day
Undefinedness	TRUE	3	22	26	4.68	red
Undefinedness	TRUE	3	23	27	4.67	art
Undefinedness	TRUE	3	23	27	4.68	art
Undefinedness	TRUE	3	23	27	4.68	cat
Undefinedness	TRUE	3	24	28	4.67	sun
Undefinedness	TRUE	3	24	28	4.68	pen
Undefinedness	TRUE	3	28	32	4.68	art
Undefinedness	TRUE	3	31	35	4.69	red
Nothing	FALSE		100	104	4.7	
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Nothing	TRUE	5	32	36	4.69	metal
Nothing	TRUE	5	37	41	4.69	green
Nothing	TRUE	5	40	44	4.69	fruit
Nothing	TRUE	5	42	46	4.69	apple
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Nothing	TRUE	5	42	46	4.69	north

Nothing	TRUE	5	43	47	4.69	green
Nothing	TRUE	5	43	47	4.69	stone
Nothing	TRUE	5	45	49	4.69	night
Nothing	TRUE	5	47	51	4.69	music
Nothing	TRUE	5	48	52	4.69	metal
Nothing	TRUE	5	49	53	4.7	fruit
Nothing	TRUE	5	52	56	4.69	apple
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Nothing	TRUE	5	61	65	4.7	music
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Nothing	TRUE	5	66	70	4.7	fruit
Nothing	TRUE	5	66	70	4.7	space
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Nothing	TRUE	5	67	71	4.7	grass
Nothing	TRUE	5	68	72	4.7	green
Nothing	TRUE	5	68	72	4.7	night
Nothing	TRUE	5	69	73	4.7	bread
Nothing	TRUE	5	69	73	4.7	fruit
Nothing	TRUE	5	69	73	4.7	fruit
Nothing	TRUE	5	69	73	4.7	music
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Nothing	TRUE	5	75	79	4.7	paper
Nothing	TRUE	5	75	79	4.7	white
Nothing	TRUE	5	76	80	4.7	apple
Nothing	TRUE	5	76	80	4.7	green
Nothing	TRUE	5	77	81	4.7	green
Nothing	TRUE	5	79	83	4.7	grain

Nothing	TRUE	5	79	83	4.7	north
Nothing	TRUE	5	79	83	4.7	paint
Nothing	TRUE	5	79	83	4.7	space
Nothing	TRUE	5	80	84	4.7	green
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Nothing	TRUE	5	83	87	4.7	fruit
Nothing	TRUE	5	83	87	4.7	water
Nothing	TRUE	5	84	88	4.7	apple
Nothing	TRUE	5	84	88	4.7	apple
Nothing	TRUE	5	84	88	4.7	grain
Nothing	TRUE	5	84	88	4.7	green
Nothing	TRUE	5	84	88	4.7	north
Nothing	TRUE	5	85	89	4.7	green
Nothing	TRUE	5	87	91	4.7	paint
Nothing	TRUE	5	88	92	4.7	apple
Nothing	TRUE	5	88	92	4.7	fruit
Nothing	TRUE	5	88	92	4.7	grass
Nothing	TRUE	5	88	92	4.7	night
Nothing	TRUE	5	88	92	4.7	water
Nothing	TRUE	5	89	93	4.7	stone
Nothing	TRUE	5	90	94	4.7	grain
Nothing	TRUE	5	90	94	4.7	music
Nothing	TRUE	5	90	94	4.7	white
Nothing	TRUE	5	91	95	4.7	paint
Nothing	TRUE	5	92	96	4.7	apple
Nothing	TRUE	5	93	97	4.7	black
Nothing	TRUE	5	93	97	4.7	grass
Nothing	TRUE	5	93	97	4.7	paint
Nothing	TRUE	5	95	99	4.7	apple
Nothing	TRUE	5	95	99	4.7	north
Nothing	TRUE	5	96	100	4.7	black
Nothing	TRUE	5	96	100	4.7	stone
Nothing	TRUE	5	98	102	4.7	bread
Nothing	TRUE	5	99	103	4.7	grain
Nothing	TRUE	5	99	103	4.7	grain
Nothing	TRUE	5	99	103	4.7	green
Nothing	TRUE	5	100	104	4.7	earth
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Note. n = 630. Raw data from *The Lattice Experiment*