Constructing Consciousness: Reverse Engineering the Architecture of the Mind

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Constructing Consciousness: Reverse Engineering the Architecture of the Mind

by

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Abstract/Foreword

Before introducing the material of this thesis, I must warn the reader of its incompleteness. It is a work-in-progress, the beginnings of a manuscript detailing ideas still not fully worked out in my own understanding. It seems that in taking on this project, I stumbled across a book’s worth of ideas and tried to record them all in the span of two semesters. Unraveling the mysteries of my mind at this pace made for exciting discovery, but just as mysterious and often inscrutable writing.

Many of my descriptions take as given the theories of consciousness laid out by the Yale and Princeton psychological researcher Julian Jaynes in his 1976 book *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. It was this fantastical 500-page book that made me so thoroughly question the substrate of my thought. In it, Jaynes tells a compelling yet almost ridiculous story of how consciousness may have originated as late as the second millennium BCE in Ancient Greece. Whether or not this wild historical interpretation is fact or fiction, the important implications of his theory, I believe, lie elsewhere. That consciousness as we know it is not required for complex cognitive thought, and that through metaphor we create ourselves in consciousness as analog, narratized beings—these arguments are what I find profound and what I wish to explore.

I begin by addressing the problem of consciousness, and quickly veer off to explain what consciousness is not, namely, experience. Before returning to define consciousness in its prominent features and functions, I explain the metaphorical methods we use to understand the world and by which we create consciousness. Finally, I extend Jaynes’s theory of consciousness and explore some of its prominent implications, such as the ultimatum that arises between the acceptance of either a metaphysical conception of self or a denial of the self beyond simulation.
Over the course of my introspective investigations thus far (which began well before this thesis was conceived), I have come to subscribe (rather optimistically) to the latter view.

Many of my ideas I expound in still undeveloped essays, the writing of which is very rough. Take them with a grain of salt; they are merely the ramblings of my thought and tumblings of my mind as I tried to wrap it around the idea of our absolute construction of consciousness. In trying to think of consciousness in this way, I found myself continually slipping back into the narratives of identity I tell myself I am, which made for difficult writing, but also comforted in the freedom of the limitless and arbitrariness of conscious construction.
I. Introduction

“O, what a world of unseen visions and heard silences, this insubstantial country of the mind! What ineffable essences, these touchless rememberings and unshowable reveries! And the privacy of it all! A secret theater of speechless monologue and prevenient counsel, an invisible mansion of all moods, musings, and mysteries, and infinite resort of disappointments and discoveries. A whole kingdom where each of us reigns reclusively alone, questioning what we will, commanding what we can. A hidden hermitage where we may study out the troubled book of what we have done and yet may do. An introcosm that is more myself than anything I can find in a mirror. This consciousness that is myself of selves, that is everything, and yet nothing at all — what is it?

And where did it come from?

And why?” (Jaynes 1)

The Problem of Consciousness

“When asked the question, what is consciousness? we become conscious of consciousness. And most of us take this consciousness of consciousness to be what consciousness is. This is not true” (Jaynes 21).

Consciousness is not all that we make it out to be. Thinking, planning, wanting, hoping—these functions, among others, form the basis of human cognition and are often seen as the pinnacle of what it means to be human. However, many of these processes do not require consciousness and are, in fact, often hindered by its presence.
II. The Experience of Being

We as human beings, like other living creatures, have an experience of what it is like to exist and to perceive the world around us. As we consciously experience the world through our perceptions and introspect upon our experiences, we must face the inevitable question of what it means to be conscious. I shall soon elaborate Jaynes’s model of consciousness as a cognitive operation whereby we create a metaphorical internal mind-space in which an analog self manipulates spatialized thoughts. On the way, I shall extend his theoretical conceptions of consciousness by overlaying my own. But before we can understand the uniqueness of human consciousness, we must briefly examine another conception, phenomenal consciousness, which defines consciousness as simply a mode of experience.

Phenomenal Consciousness

“There is ‘something-it-is-like’ for bats to perceive the world just as there is ‘something-it-is-like’ for dolphins, cats, and humans to perceive the world. Unfortunately, there is no consensus on how to understand or define this mysterious concept of ‘what-it-is-likeness,’ otherwise known as ‘phenomenal consciousness.’ Moreover, to equate phenomenal consciousness with this ‘what-it-is-likeness’ is practically synonymous with saying that phenomenal consciousness is simply experience itself” (Williams 217–18).

By this account, consciousness is not much at all. Indeed, it is simply experience itself. This definition of consciousness as “what-it-is-like” to experience the world is not the one I seek, as it does not account for the unique creative power of human consciousness, but it does serve useful in describing our consciousness of consciousness. Everything that I experience is an object of my phenomenal consciousness. However, I know that this is not the same as my consciousness
in the strict sense, for in experiencing consciousness I am phenomenally conscious of consciousness. If this were all consciousness was, it would be infinitely regressive, an endlessly recursive awareness of awareness and experience of experience. There must be something more to the phenomenal experience of our subjective consciousness.

If the idea of phenomenal consciousness alone does not let us make sense of the richness of our internal, subjective experience, then perhaps we must probe at this experience to unpack “what-it-is-like” to be human.

The Creative Power of Human Consciousness

In consciousness, we think, and then we think up new ways to think. We perceive the world, and then we perceive our perceptions of the world. Consciousness grants us the power to invent worlds of imagination within our own minds. As our understandings of the natural world and of ourselves grow in complexity, so, too, do our imagined conscious worlds. As we devise new sciences to model natural phenomena at increasingly large and small scales, we find ourselves inventing new strategies to understand our behaviors and coming up with new words to communicate our thoughts and feelings.

However unique and powerful the human creative ability to construct new understandings and new ways of experiencing the world, its infinitude is neither arbitrary nor chaotic. Although I am conscious of how I perceive the world and can make decisions about how I act in it, the control I exert over my conscious experience is greatly limited.

My consciousness is a tool I can use to think and to modify how I think, but a tool I inherit in a particular form. The power I have to effect changes in my perceptions is subject to the relatively fixed physiological restrictions imposed by the human brain and body, and to the permanence of the events of my past experience. I cannot easily modify the foundations of my
mind as laid by the public consciousness of the society in which I grew up. Some aspects seem fixed, already set by events of the past and thus no more changeable than my height or eye color, while others are plastic and can be gradually reshaped. I can think in new ways by picking up a new language or skill, for example, but I can’t suddenly change how my phenomenal experience feels by swapping my perceptions of red for blue and low pitches for high ones.

I am, in a sense, stuck with my personal history and the ways of thinking made available to me by those who taught me how. In general, humans are always relatively stuck with the ways of thinking that immediately surround them and that are dominant in society at their present moment in history. And we, along with all humans since long before the beginnings of civilization and recorded history, are stuck with the physiological capabilities and limitations of the anatomically modern species Homo sapiens. Just as we continually poke at our physical limits by inventing technology to overcome scientific domains previously thought unconquerable, however, so, too, we as individuals and as societies gradually transcend our mental limits by creating and adopting new organizations of thought.

Though my brain’s physical form and mind’s primary organization are already set, I can choose to exercise them however I wish. Despite what I cannot change about my consciousness, its power is marvelous in that the ideas I can imagine within it are still infinite. But how? How is subjective consciousness organized such that it allows us to understand ideas more and more abstract and complex? Jaynes offers an elegant solution in the form of the linguistic mechanism by which we endlessly build up frameworks of understanding: metaphor.
III. Features of Consciousness

Jaynes claims that it is by metaphor in language that we build up complexities of understanding, unto even our own consciousness of this process. He conceives of consciousness as an operation whereby an internal world is created, built up out of language and metaphor, on the basis of a history of experiences strung together into the narrative of an experiencing self.

If this is the case, that language is a prerequisite for consciousness, then, on the geological timescale, consciousness must be brand new; it can only have existed as long as language! It is quite profound to think that in just a few thousand years, we have learned so effectively to mimic nature’s abilities to organize and to create so as to seemingly transcend its laws that have constrained the human-animal species for millions of years. As such, this claim requires grand evidence to back it up. In *The Origins of Consciousness in the Breakdown of the Bicameral Mind*, Jaynes makes it his mission to prove this claim, by examining the origins of language, religion, culture, writing, etc. I shall leave him with the burden of proof of his theory of the metaphorical generation of consciousness, and instead bring to light its far-reaching implications for what it means to exist as a conscious being, some of which I believe even he didn’t see.

Metaphor as a Mechanism for Understanding

Humans understand ideas by studying and organizing them, by breaking them down into their constituent parts and figuring out the relationships between these, and these behaviors take place in consciousness. Consciousness is thus an organizing operation, a space in which the human drive for order may be exercised. A person may come to understand a complex object or process by recognizing the various parts of it, conceiving of the relationships between these parts, and identifying the overall structure or behaviors that arise from the rules of their interactions.
Understanding an idea means learning to identify its aspects more precisely, becoming conscious of it at higher and deeper levels of organization. To be conscious of an idea, we must first take our perceptions of it and situate them within a context where their meaning is understandable. That we can “take” my perceptions and “situate” them “within” a space in order to understand them shows that the very process of understanding is metaphorical. It is coming up with a metaphor to relate unfamiliar ideas to familiar ones. Consciousness, then, must allow these metaphorical models of understanding to be manipulated within the mind.

Jaynes uses metaphor in the sense of “the use of a term for one thing to describe another because of some kind of similarity between them or between their relation to other things” (Jaynes 48). When we are asked to describe an unfamiliar object, for example, we grasp for ways to explain it so it may be understood. We rely on metaphor to draw connections between aspects of the unfamiliar object and our existing understandings of familiar ones. Metaphor is “not a mere extra trick of language,” but “the very constitutive ground” on which its foundations lie; “it is by metaphor that language grows” (48–49). The terms we use to describe and understand the world, the very ways in which we label the objects of our conscious thought, are metaphorical.

Jaynes formalizes the operation of metaphor by introducing terms for its operands, akin to mathematical multiplication: the *metaphrand* is “the thing to be described,” and the *metaphier* is “the thing or relation used to elucidate it” (Jaynes 48). Thus “a metaphor is always a known metaphier operating on a less known metaphrand” (48). Connotations associated with the metaphier he calls *paraphiers*, and connotations associated with the metaphrand *paraphrands*. In metaphor, a metaphier is used to generate or elucidate a metaphrand and thereby project similar connoted qualities onto it as paraphrands corresponding to the paraphiers of the metaphier.
“All of these concrete metaphors increase enormously our powers of perception of the world about us and our understanding of it, and literally create new objects. Indeed, language is an organ of perception, not simply a means of communication” (Jaynes 50).

“The lexicon of language, then, is a finite set of terms that by metaphor is able to stretch out over an infinite set of circumstances, even to creating new circumstances thereby. (Could consciousness be such a new creation?)” (Jaynes 52).

“Consciousness is being thought of as a thing, and so like other things must have a location” (Jaynes 54).

“[C]onsciousness is the work of lexical metaphor. It is spun out of the concrete metaphiers of expression and their paraphiers, projecting paraphrands that exist only in the functional sense. Moreover, it goes on generating itself, each new paraphrand capable of being a metaphrand on its own, resulting in new metaphiers with their paraphiers, and so on.

“Of course this process is not and cannot be as haphazard as I am making it sound. The world is organized, highly organized, and the concrete metaphiers that are generating consciousness thus generate consciousness in an organized way. Hence the similarity of consciousness and the physical-behavioral world is echoed — though with certain differences — in the structure of consciousness” (Jaynes 58–59).

“A cardinal property of an analog is that the way it is generated is not the way it is used — obviously. The map-maker and map-user are doing two different things. For the map-maker, the metaphrand is the blank piece of paper on which he operates with the metaphier of the land he knows and has surveyed. But for the map-user, it is just the other way around.
The land is unknown; it is the land that is the metaphrand, while the metaphier is the map which he is using, by which he understands the land.

“And so with consciousness. Consciousness is the metaphrand when it is generated by the paraphrands of our verbal expressions. But the functioning of consciousness is, as it were, the return journey. Consciousness becomes the metaphier full of our past experience, constantly and selectively operating on such unknowns as future actions, decisions, and partly remembered pasts, on what we are yet may be. And it is by the generated structure of consciousness that we then understand the world” (Jaynes 59).

Modeling Behaviors in Consciousness

When we consciously solve problems, we program our minds to perform mental operations by inventing metaphorical problems to solve in consciousness that are analogous to problems that can first be solved in behavior. Take, for example, the following simple problem that shows up frequently in sorting algorithms and other areas of programming. Let \( x \) and \( y \) each be a variable that holds an integer value, such as two elements in an array of integers. As part of a sorting algorithm, the values of the two variables must be swapped. A naïve approach might be to perform two assignment statements: \( a = b; \) and \( b = a; \) (\( a \) takes the value of \( b \), then \( b \) takes the value of \( a \)). An astute observer will notice, however, that \( b \) takes the value of \( a \), \( a \) has already taken the value of \( b \); its original value has been lost. The problem is this: how should we swap the variable’s values?

Most everyone has surely solved some equivalent problem before in behavior, but they may not have noticed (been conscious of) the ways they came upon or implemented their solutions. Rather than relay the problem’s solution in the domain of programming, I shall demonstrate how we use metaphors of behavior to understand and perform operations in consciousness. Here is one
equivalent problem in behavior: imagine you are holding an object in your left hand and another
in your right, say, a coffee mug and a glass of water. Just as before, you must swap them between
your hands (perhaps so you can hand the mug to someone on your right). If each one takes up a
whole hand, i.e., you cannot hold both in your left or in your right, how do you swap them?

Whether the objects to be swapped are two integers stored in registers inside a computer,
or a mug in one hand and a glass in the other, the solution is the same: one must use a third location
to temporarily hold one object (a temporary register or a countertop to set down one cup), then
swap the spot of the still-held object, and finally have the first object take its place.

The process by which I have modeled this problem illustrates and use an operation of
consciousness that Jaynes calls *spatialization*. In consciousness, he says, we create spatial analogs
of objects or behaviors that we have experienced physically. We conceptualize these objects and
behaviors by constructing and manipulating abstract models of them in the conscious mind. The
substrate of these spatial analogs is language; they exist only as the words we use to describe them
and in the perceptions that we experience as a result of thinking those words. We describe a concept
and thus hold it in consciousness, and through metaphor, by linking it to other, already-understood
concepts, we come to understand it.

In solving this simple yet puzzling problem, another ability appears within consciousness,
that of a person to achieve through their behavior certain objectives while operating under certain
restricting rules. A set of rules combined with the intentional decision to follow them forms a game
or challenge of sorts. Similar situations arise in human behavior all the time: we identify (or
evolution selects for) a goal to reach, develop somewhat arbitrary but logical rule sets whose
application fulfills it, and either consciously choose to operate under these restrictions or otherwise
follow them naturally. These sets of arbitrary rules make it possible to encode and decipher meanings from arbitrary strings of syntactic constructions, to understand language at all.

**Subjective and Objective Analog Self**

Jaynes’s idea of the “analog I” and “metaphor me” (62–63). Picturing myself autoscopically is moving my analog mind in consciousness outside of my analog body, now using a combination of bodily sensations. My spatialized body, or metaphor me or analog objective self, is generated as a metaphrand in consciousness by the metaphier of my bodily sensations, including seeing reflections of my body. Like a map generated by surveying the land, my analog body can then be used as the metaphier to generate the metaphrand of experiencing my body. I can be conscious of my perceptions by labeling how they relate to my spatialized model of myself.

Just as one cannot be conscious of a mountain while standing atop it but by relating it to the scenery down below, I cannot be conscious of myself from within but by relating myself to my world outside. In consciousness, however, I can be conscious of an analog of myself by relocating my simulated subjective consciousness. Imagining what I would see if I looked at myself from outside, this function of searching the world for a perception that does not exist, is what allows me to become conscious of the perceptions that do. In placing my analog I outside my body and imagining looking in, I “search” for perceptions of myself, then I analogize them back to my experience and thus become conscious of the things I could not have been before. It is this act of searching, of probing the world from an imagined location of experience, imagining what I would experience from there by simulating spatialized or imagined perceptions and by metaphor, as like a map, the translation of those perceptions to the ones felt by my body that lets me know what I am conscious of. In essence, I am only conscious of what I seek to be conscious of. What I experience is a simulation created by myself.
Thinking on objects in consciousness necessitates the manipulation, understanding, combining of them, the recalling of memories of past actions having to do with them, the simulation of potential consequences of each option, and so on. Performing these functions firstly necessitates some sort of location (physical or metaphysical) where all the options can be gathered and where these operations can take place. Jaynes’s spatialized headspe (in which consciousness operates via metaphor) is one such model of a metaphorical form of this location. Now, within this location, by introspecting into a so-called “mind-space,” one’s consciousized self can “interact with” the materials on which these functions will operate, the results which these functions produce, and can even step through or modify the functions themselves.

**Consciousness of Time**

Consciousness allows us to represent time in spatialized thought. Jaynes’s idea of narratization is the linking of various conscious excerpts in time (63–66). Spatialization where this occurs is thus a mental simulation that allows more control over the dimension of time. This means that a conscious mind is no longer stuck simulating behaviors that will immediately follow the present time, but is free to explore alternate actions and their potential consequences for both the past and future. Since we spatialize analogs to all our senses, it only makes sense that we also spatialize time, thereby gaining control over a simulated sense of time. In the same way we can move around objects in our mind using our spatialized sight and touch, we can examine things in different timeframes.

**Consciousness as an Analog of the Real World**

“Subjective conscious mind is an analog of what is called the real world. It is built up with a vocabulary or lexical field whose terms are all metaphors or analogs of behavior in the physical
world” (Jaynes 55). As we experience the world, we come up with thoughts about our experiences and encode them into words so that they may be remembered, recalled, and shared. Our thoughts generate consciousness like a map, with a correspondence between the features of the outside world (our perceptions) and the features of our internal world. And then, using our map of consciousness, “full of our past experience, constantly and selectively operating on such unknowns as future actions, decisions, and partly remembered pasts,” we come to understand the world.

By this, not only does he mean that consciousness is “generated by and accessed by language,” but that its literal substrate is thoughts composed of language. Thus, consciousness could never be an internal process capable of being localized and studied in the brain (any further than the language centers at least, since the concretized form of its functioning is simply the understanding and generation of language). That is, since consciousness is made of language—and thus is inherently abstract and artificial—it can only be understood through language! And, in fact, since he says understanding is the process of familiarizing oneself with an unfamiliar concept via metaphor, ‘understanding’ itself is only possible through language! (However, it may be useful to extrapolate “language” further than its simple lexical sense, including other mutually-understood forms of communication and systems of logical thought, such as mathematics, musical notations, “body language,” etc.)

There is No “Most Natural” Mentality

Just because my consciousness was shaped into a particular form through interactions with the world and other people (whose consciousneses were, in turn, shaped by their interactions with the world, and so on), this does not mean that the form of conscious mind that I, or any one of us, experiences is the optimal, or most natural, or only possible, form to exist or have existed. There is no most natural mentality, or architecture of mind. Indeed, by the end of this paper, I hope to
convince the reader that consciousness is merely one of many possible organizations of mind; to make plausible the idea that past and present humans have already operated under very different mentalities; and, if nothing else, to argue that we shape consciousness just as it shapes us.

There is no one standard by which to judge a perception as correct. A deer does not conceive of a car as a human does, but nevertheless recognizes it as dangerous. Whatever a deer understand about a car—that it is dangerous, that it moves quickly and in straight lines and near other cars—must be understood in terms of what the deer knows in behavior—namely, these concepts of “danger,” “move,” “quick,” “line,” “near,” etc. Thus a deer also must have a system for modeling the things it encounters. The difference between a deer and a human is that the human’s models extend infinitely whereas the deer’s do not. Even animals can form conceptions and classify them according to conceptual schema, so the human quality must lie elsewhere. It is in human spatialization, in particular, that new concepts can be generated by endlessly through abstraction and analogy. Language facilitates this, as it allows the creation of references to uniquely identify conceptions. The human ability to remember language means humans have memory space in which mental computations such as modeling conceptions can take place and state can be saved. The ability to share language means that conceptions can be copied, stored in networked external memories. And the later ability to record language meant that the human computer was no longer limited to a finite memory, but could be extended infinitely to temporary or permanent storage outside the mind altogether; all that had to be remembered were the rules for interpretation. The ability of humans to construct these abstract sets of rules to follow is a direct application of their ability to create new conceptions, which again stems from abstraction and analogy in spatialization. Spatialization is simply a larger sandbox version of understanding the world, one in which the rules for modeling conceptions are influenced by a directing, volitional
force. Although the decisions of non-conscious animals are directed by a similar force, which is the “program” of their behaviors, this program cannot modify itself, as it does not know it exists. It seems that conceiving of a force that directs our behaviors creates the possibility for this directing program to modify itself, to evolve. Conceiving the possibility for actions to be chosen consciously makes this possibility so, for it brings the process of understanding into its own light and allows understanding to build off itself.

The patterns of my thoughts, behaviors, and actions form the structure of my experience. Of course, there are unstructured aspects of experience, happenings that I have no control over or knowledge of, but of experiences I am guaranteed, there are none other than those provided by my thoughts or initiated by my actions.

**Spatialization and Constructed Perceptions**

How can it be that something so abstract as language can create something so intimately sense-able as the thoughts I think and the world I see when I close my eyes? I say that I experience my thoughts in consciousness as spatialized objects, because it is the clearest way I can convey how it feels for me to think. My own thoughts and feelings are the only sources of experience I have, and so I can only understand new experiences in relation to them. I must, for any experience apart from the most basic of sensations, make sense of it by understanding it in terms of past ones. For this reason, Jaynes believes it was the invention of metaphor that allowed humans to start building complex frameworks for understanding the world.

Conscious experience and understanding through spatialized metaphor seemingly developed as a beneficial adaptation for early humans, not only for its cognitive advantage in letting them grasp and organize their thoughts more tangibly, but also for its social advantage in greatly expanding their ability to communicate.
To share my private, inner perceptions with an audience, I must externalize them by appealing to common perceptions among us, such as those found in human physiology and behavior. In fact, the only way I can even understand my own perceptions is to communicate them to myself. Namely, in order to recall memories of events I once experienced consciously, I must encode and store my perceptions of them for later retrieval and re-experience.

Phenomenal experience entails perceiving the world, and conscious experience means noticing this process as it occurs or afterwards. But noticing a perception requires me to identify it, to label it or otherwise fit it into a familiar category. For what would it mean to be conscious of a perception if I could not describe it or even conceptualize it in a way understandable to myself? Thus, spatialization appears as a mechanism to achieve this conceptualization, and metaphor as the method by which spatialized objects and behaviors may be modeled after familiar ones.

As one builds up an array of models and metaphors for understanding the world, one finds that new experiences are filtered through them, and thereby new perceptions arise. For example, if I see a tree, whether I consciously take note of all the tiny bits that make it up—its height, the thickness of its trunk, the shape of its leaves, the color of its flowers—I can’t help perceiving it as a whole. I immediately recognize it as such, and so one could say that I have a constructed sense of what a tree is.

(Of course, mental models are subject to change; the rules that define membership to conceptual categories or schema are not infallible. As one encounters unfamiliar objects, one must either modify one’s perceptions of them to fit into existing models (assimilation) or alternately restructure the models to accommodate the new objects.)

All but the most basic perceptions are constructed; that is, they are not intrinsically understood, but rather must be interpreted through experience and relation to other perceptions.
Constructed perceptions allow us to experience abstract sensations (e.g., “tree-ness”) in a similar manner to how we experience physical ones (e.g., size, color). And perceptions build on each other. For example, we perceive color through the sensation of reflected light frequencies, but we sense the category of a plant in part based on its color. In fact, one could argue that all senses are constructed, in that they all convert detectable properties of matter into qualia of phenomenal experience, but some are hard-wired into our physiology while others are pieced together through learning.

**Recording & Excerption of Experience**

When we reminisce on a memory, we reconstruct the circumstances of the memory and play them back in our minds. Thus, to reminisce is to phenomenally experience a simulated reconstruction of a memory. We may note, however, that the state of consciousness doing the experiencing while reminiscing is not identical to the one that experienced the original circumstance, as they are separated in time. The particular state of consciousness that experienced the moment originally is distinct from the state of consciousness presently experiencing its reconstruction. This distinction parallels Jaynes’s between “the analog I” and “the mental me,” the former representing the subjective consciousness of the present and the latter the objective consciousness of the past.

Although the present consciousness may know some objective facts about the experience based on reasoning and other accounts, of the subjective experience of the past consciousness it knows only what was recorded at the time. In a sense, the past consciousness is communicating information about its private experience to the present consciousness via memory. Like leaving messages in a bottle to be later opened and read by whoever finds them, the original experiencer
records moments of consciousness in a way that they may hopefully be understood by whoever later finds them.

Language is one such medium to facilitate this communication. Words can act as pointers to conceptions and thus remembering a word can bring to mind details about the memory that give the present consciousness hints, clues, insights into the thoughts of the past consciousness. This function of bringing to mind details about the memory is what Jaynes calls *excerption*, and it is one of the features of his conception of consciousness (61–62). In recording a memory, a consciousness compresses some crucial aspects of its phenomenal experience into a form that it believes will be mutually understandable by itself and by those states of consciousness that succeed it. After storing them in memory, these units of compressed phenomenal experience can be accessed later. We can model the function of creating these units of understandable experience as a sort of ‘encoding meaning,’ the function of committing them to memory ‘recording’ or ‘storing,’ the function of accessing them from memory ‘excerpting,’ and the units themselves ‘excerpts’ or ‘excerptions.’

This model suggests that phenomenal experience is compressed into understandable units and recorded for later excerption, but this is really somewhat simplified. Now what I suggest is that a compressed unit of understandable experience is not enough to reconstruct any excerpt of an event on its own. Rather, it is used to inform and revise one’s set of conceptual schema which are used to classify a particular object of phenomenal experience as belonging to a particular conception. These schema can be imagined as a web of conceptions that is built up over time. Thus, this event is classified by the existing set of conceptual schema and then reinforces or revises these schema to inform future classifications. that as phenomenal experience goes on, the objects
of phenomenal experience are classified based on some set of key features particular to the circumstance.

This classification happens to some degree with or without conscious intent. When seeing a chair, for example, an individual automatically judges it as belonging or not to a particular conception of ‘chair.’ If there is uncertainty (i.e. an immediate judgment is not produced), then the classification can be completed by consciously stepping through a reasoning process about the particular rules that are typically taken to define the conception. An individual’s perceptions of an event might also be represented as a vector of distinct features. This vector can then be classified as belonging to a certain conception, which is defined as a particular region of this featured vector-space.

**Axioms of Belief**

The cognitive function that carries out this classification is very important, as it decides the boundaries between concepts, and is intimately tied to belief. Unfortunately I have not the time to discuss this in depth, but can provide the following introduction to this idea: Belief is sufficient to classify some types of concepts. Take the idea of the soul, for example. For some, the soul is said to begin at the conception of a child. This is not an observed, but rather an imbued characteristic. By assuming that the fetus will grow to be conscious in the future and conflating those future conscious identities with that of the present, the identity of the fetus and the potential future identities of the child/adolescent/adult they may grow into are treated if they were one stable conception. Aspects of the future conception are imbued into the present conception since the two are “known” to be continuous and identical by an axiom of belief. Thus the conception of the soul is created only out of a presupposed belief in its future existence and belief in its continuity over
time. The same can be said for consciousness: that our personal identification with our generated analog self is merely an assumption of enduring continuity of conscious states.

**How Consciousness Arises**

Consider the following argument for the plausibility of imbuing consciousness in someone else before oneself. It starts from the base point of myself as a non-conscious being and makes a few assumptions about the requirements for the ability to “imbue consciousness” in another being, i.e., understand their actions as being performed by some conception of self. I shall examine these assumptions afterwards.

Assume that I am not conscious, and that consciousness is not required for imbuing another being with consciousness. Understanding someone else’s actions as conscious means lumping them together as actions caused by a directing, volitional force, i.e., a conception of someone else’s ‘self.’ In understanding this directing force, I mentally model it as I do other concepts, forming a group of associated behaviors and attributing their happening to a causal force exerted by an object. Thus I assume the location of this directing force within another person. By analogy, I assume my behaviors are caused by a directing force, as well. That is, in spatializing an analog to their behaviors, metaphor carried out via linguistic thinking, I create my conscious experience as a metaphrand.

Consciousness must have arisen from non-consciousness, or else have always existed. With respect to biological evolution, it appears the former must be true, as consciousness, in any of the senses discussed thus far, is an experience of living beings, who have not always existed. Consciously can only have always existed if conscious beings have always existed, and this can only be said to be true by one who believes in the existence of eternal metaphysical beings, such as gods. If I wish to avoid taking on such metaphysical assumptions, then I must believe
consciousness is something that came into existence, something that was created, either by humans or as some synergistic emergence out of human behavior. The question I wish to explore is, how was it possible for consciousness to be constructed by non-conscious beings in this way? Jaynes argues that non-conscious humans must first “invent” or assume the existence of consciousness in others before they can create it in themselves (Jaynes 45).

**Non-Conscious Understanding of Consciousness**

To assume the existence of consciousness in another being, one must understand what this consciousness is. How can a being who is not conscious understand what consciousness is? To answer this, we must first prove that the relationship between consciousness and understanding consciousness is not circular, that one can come before the other. The theory of recognizing consciousness in others and then analogizing it to the self rests on the assumption that is possible to understand consciousness before being conscious. Consider the following argument by contradiction:

Assume understanding consciousness requires being conscious. But being conscious requires understanding consciousness. For being conscious means recognizing oneself as conscious; recognizing oneself as conscious means interpreting one’s perceptions of oneself as conscious; interpreting one’s behaviors as conscious means having an idea of consciousness; and this idea of consciousness is represented as and understood using a mental model. Thus, consciousness and an understanding of consciousness are synonymous, inseparable from each other.

Humans are conscious, but up until some point, our evolutionary ancestors were not. At this point, either humans must have been able to understand consciousness in order to be conscious or would have had to have been conscious in order to understand consciousness. Each condition
is required for the other to arise. So, this contradiction indicates that the starting assumption must be false, that understanding consciousness does not, in fact, require being conscious. Either it is possible for a non-conscious being to invent or understand the idea of consciousness, or both consciousness and the understanding of consciousness must simultaneously arise via another process. In any case, the origin of consciousness must have been in the non-conscious understanding of consciousness. I interpret Jaynes’s fantastical realization of this fact as saying that non-conscious humans invented consciousness in the gods, spirits, and souls of their own creation.
IV. Conscious & Non-Conscious Mentalities

Other Organizations of Mind

Consciousness is merely one mentality or way of thinking in general, and Jaynes explains a potential precursor to it in the mentality of the bicameral mind. Rather than two specific mentalities, this is really a broad classification of many distinct sub-mentalities into two categories, with consciousness as the separating feature.

Under a conscious mentality, humans construct spatialized and narratized understandings of themselves, etc. However, this brings up one of my main points: I think this choice of feature, consciousness, at least as it is usually described, is too narrow a view. It is consciousness of individuals, limited to singular, unified identities. (And even when ideas of consciousness include plural, disunified selves, they still are usually limited to human individuals, so multiple consciousnesses in one mind/body.) Limiting consciousness in this way disregards the idea of bicamerality as a conscious mentality, but one that is socially distributed and unified through cultural systems of logic rather than individualized and unified through narratization and internal systems of logic.

The idea that humans have operated under various mentalities and that these mentalities have evolved with cultures and languages is made evidently plausible by Jaynes. I agree with the social constructionist point that our consciousnesses are shaped by our ideas and theories of consciousness. But in explaining our ways of thinking using a functional model (and using bicamerality as an example “other” mentality), in addition to explaining identities using a classification function that fits into this model, shows how our identities are really a fiction imposed on our thought processes and justified by our individual and social belief. (Personally, I
then see this in an optimistically nihilist light, I guess, in that the meaninglessness of identity affords us the freedom in constructing our identities as we see fit.)

First, any program of thought in a sense thinks. It combines basic units of understanding in novel ways so as to build up new understandings. When a thought process comes up with a thought, it has excerpted from previous understandings, combined these excerpts together using some set of logical operations, and produced a new understanding. A basic unit of understanding in general is a conceptual model that can be manipulated by a thought process. For example, under Jaynes's conscious paradigm, a thought process (my consciousness) can operate on understandings that have been spatialized—concepts that I am able to mentally represent in some way. Jaynes's theory of metaphor provides a plausible mechanism for how these mental representations are built up using language.

Thought processes operate hierarchically. When a high-level thought process “performs an operation,” it really calls on, or “delegates execution to,” a lower-level process that implements this operation, instructing it to return a result. If I decide to journal about my day, for example, the operation of reminiscence is not (cannot be) performed by consciousness. Instead, my highest-level thought process (what I feel is me) instructs some lower-level mental faculty to performexcerption on the day’s memories, to abstract them into discrete events, to narratize them into a story of my day, etc. In fact, it makes no sense to say that something is “performed by consciousness,” because consciousness is just another mental operation whereby a spatialized analog representation of myself is created.

A program of behavior uses a set of logical rules for applying certain mental operations to certain excerptive materials. This “system of logic” underlying a thought process is important: if a thought process is a mental program in interpretative execution (that is, in a sense, being
translated to understanding as it runs), then its system of logic is essentially the ruleset by which it conditionally determines, based on the results of prior operations, what to do next. When the act of stepping through the performance of mental operations by a thought process is itself recorded by that thought process and feeds back into its exerptive materials, then this is when consciousness arises. Consciousness is merely incidental here, an emergence in a particular category of thought processes whose allowable operations include self-awareness. It is not a necessary feature of thought processes, nor of thinking or making decisions in general.

**The Bicameral Mentality: Human Automata**

Bicameral humans “do not sit down and think out what to do. They have no conscious minds such as we say we have, and certainly no introspections. It is impossible for us with our subjectivity to appreciate what it was like” (Jaynes 72).

“In fact, the gods take the place of consciousness” (72).

“They were noble automatons who knew not what they did” (75).

“Iliadic man did not have subjectivity as do we; he had no awareness of his awareness of the world, no internal mind-space to introspect upon. In distinction to our own subjective conscious minds, we can call the mentality of the Myceneans a *bicameral mind*. Volition, planning, initiative is organized with no consciousness whatever and then ‘told’ to the individual in his familiar language […] The individual obeyed these hallucinated voices because he could not ‘see’ what to do by himself” (75).

“Since we know that Greek culture very quickly became a literature of consciousness, we may regard the Iliad as standing at the great turning of the times, and a window back into those unsubjective times when every kingdom was in essence a theocracy and every man the slave of voices heard whenever novel situations occurred” (82).
Bicameral men heard commands from thought processes they learned in real experience. If those commands were always known to have originated from someone else, say, the leader of a tribe, then, when they are experienced while apart from the leader, then they must be attributed to someone, and this someone is the analog of the leader. Thus a person now experiences hearing from the king’s spirit. And once the king has died, they are still commanded by the dead king’s spirit, now from beyond the grave as a god-king. The thought exists on its own, created out of habits of thinking, unconscious predictions of how certain thought processes would respond to certain stimuli, but may be attributed to an analog person. The final step of the metaphor, performed only through belief, is taking what is known only as an analog and projecting it out as something that can be known in the real world. This is the power of consciousness: the creation of abstract concepts, even unto the creation of gods and ourselves.

The experience of humans prior to consciousness, then, was simply a succession of actions, commanded and obeyed. All deliberations, all decisions were made by the gods, which were simply the labels that humans, with their early models of understanding, gave to the non-conscious cognitive processes that commanded them. The gods were socially constructed programs that made decisions in response to novel stimuli, all through no experience of their own.

The Power of The Gods in Consciousness

“that the presence of voices which had to be obeyed were the absolute prerequisite to the conscious stage of mind in which it is the self that is responsible and can debate within itself, can order and direct, and that the creation of such a self is the product of culture. In a sense, we have become our own gods” (Jaynes 79).

Jaynes devised this brilliant and exciting model for what consciousness is, what exactly it is that we are experiencing when we consciously experience the world and introspect on our
thoughts. And it is all very interesting from the perspectives of anthropology, physiology, psychology, history, mythology, and biology, but it seems to be missing a certain element of philosophy. What does it mean that we create our consciousness?

The leap that Jaynes does not make clear is that bicameral man’s non-conscious, slavish obedience to the commands of the gods is like an animal consciousness of merely these commands. That the automaton that listens to the commands of the gods, is just as our bodies are to ourselves in consciousness! I do not feel that I am my body, except when I place my consciousness in it. So it does not have a consciousness of its own, or either I cannot know that it does, for whatever is performed by my body outside my own consciousness appears to me as nonconscious behavior. There is no sense in which my body “feels” that it is a slave to my mind; it simply exists with its perceptions. Jaynes imagines the left, human hemisphere of the bicameral mind to be a slave to the right hemisphere of the gods. Its status as a “slave” is equivalent to it having no consciousness at all.

The gods are simply names given to certain ways of thinking, programs for deciding what action to take when faced with unfamiliar situations. In consciousness, the deliberations of these thought processes is made experienceable by making the objects of these thoughts perceivable (spatialization), which is made possible by linguistic metaphor (tracing abstract thoughts → abstract → eventually concrete), and narratizing the phenomenal experience of them into a subjective analog self. The thinking of the nonconscious mind as a computer, previously translated into language only for communication, is no longer a black box. Human phenomenal experience is no longer a perception of the results of nonconscious thinking, but of the thinking process itself.

The experiences of bicameral man were to obey the commands given them by a god. The ostensible experience of the gods was in taking in stimuli from the world and making decisions.
However, in thinking about this bicameral, from a perspective that seems to hopelessly fall into the trap of centering the human’s experience, what we may call the “experience” of the gods is, in actuality, no experience at all, but a computation within the computer of the mind whose organization we are modeling as a conception of a god. Who are we to say that this god has no phenomenal experience? If the process of recording excerpts is how we understand phenomenal experience, then in the first case, could we not say that whichever non-conscious process commanded the excerption to be created, this process was who actually experienced this excerpt! When thoughts pop into my head, then, my consciousness may only be made privy to “someone else’s” experience, that of the cognitive program that generated the thought. Our consciousness is consciousness of these very same computations that were already occurring in the mind, but ones whose step-by-step execution we experience.

Think of the bicameral man encountering a strange or unfamiliar situation: their nonconscious recognition processes, having already identified it as such, now work to simulate plausible ways that this situation might play out and come up with appropriate responses. Assuming these processes generate an appropriate-enough response, their god-mind then answers the implicit or explicit question “what should I do?” by commanding the person to act in a certain way. The high-level function that is accomplished here is choosing one choice to take from a set of multiple options, but the low-level implementation (how this function is actually carried out) would be unknown to the bicameral man. Under the conscious mentality, this same high-level function still occurs, but now we get to experience the internal perspective of the process that performs this function or solves this problem. We get to be the one who examines our options, tries to glean more info about the unknown situation, and ultimately selects which will be enacted.
Greater consciousness means modeling and experiencing the computation at greater and greater depth, and for each function that is modeled, it is understood in the framework of metaphor based on behavior. The computation can be understood as the performance of a being, and we continuously model with more accuracy how the computation is being performed, by becoming conscious of patterns of organization and trying to model how the thoughts and actions are generated.

**Simulated Phenomenal Experience**

When we are conscious, our phenomenal experience is that of playing a certain experiencing role and performing certain tasks in thinking that aim to fulfill its cognitive functionality. We are limited to our own past experiences and understandings thereof, and in the amount of sensory information we can perceive and conceptualize in the present. Although the narrative of “our” phenomenal experience is composed of all the times we have played this dominant role, this does not imply that our process is the *only* one who could or does fill this role. In those times we are non-conscious, would we not still require the assembly and interpretation of past experiences and understanding in order to decide and perform any meaningful actions in the world? At these times, whatever process is “in charge” would thus need some degree of access to past experiences and to the functions that allow their manipulation, simulation, etc.

Consider the case of a god-mind being the dominant process organizing information from the world and using it to make decisions. Each god has its own overall personality in much the same way as humans—a prior history of emotions, likes and dislikes, skills, tendencies (e.g. the temper of Zeus, the wisdom of Athena), etc. Could it be said that, at the time when a god-mind is the dominant or volitional process, that it is experiencing a phenomenal consciousness besides our own?
This question can also be applied to “simulated” or “artificial” consciousnesses. If I get to know someone (a family member, friend, or partner; a fictional character; an imaginary friend) and gradually learn to predict how they would react to a situation, then am I not essentially building up a model of their personality that I can then use to simulate what I think their phenomenally conscious experience is like? Hearing a god’s direction or simply “knowing” how they would command one to act when presented with a situation—these situations are almost identical; the only difference is my degree of certainty that I actually hear the response from someone else or merely think I know how they would respond. If I am able to insist one way or another to an outside listener (or deceive them), however, the situations become functionally identical. From a social evolutionary perspective, a god-consciousness whose wisdom in making decisions proves advantageous would be more likely to survive and then spread to other people. Socially constructed gods with well-known and agreed-upon personalities then can perform a sort of social synchronization of artificial conscious thought processes.

The Stages of Consciousness

The constant of an animal mentality, and humans are no exception, is that stimuli will, through some cognitive computation, be transformed into action. Consciousness experience is, and through narratization, we are, the operation of examining the behaviors and functions of the computation, and linking this “searching,” “finding out,” “consciousizing” operation to our perceptions. The link that allows it to become “us,” an experience that exists for a being, is the function that maps perceptions of the computation to real perceptions that the human animal body “feels.” This function is the second stage of consciousness, wherein the spatialized internal world is used as a map to generate the real one. The abstract sensations of interacting with ideas and thoughts and concepts in consciousness are reversed back into the analog behavior’s physical
counterparts, and experienced from consciousness as a sort of simulation. Language crosses the barrier between conscious and phenomenal. Language can be felt.

From the perspective of the body, it is a slave to the mind sometimes; it has no choice but to submit to the mind’s whim and will. However, we don’t consider “what the body would experience” to be an actual phenomenal experience that is felt by anyone. We don’t create a separate metaphysical idea of the body as its own person, separate from ourselves (although perhaps we should be more considerate of our corporeal forms). In the same way, it almost makes no sense to consider the bicameral automaton of pre-conscious humans as having an experience any more than we would consider a computer that “reads” (rather than hears) instructions and obeys them. Again, it’s a computer. Unless we also consider the god part of the mind to be having its own experience.

For all his care to avoid his bias as a conscious being when examining the experience of bicameral as “having an experience” is seemingly impossible for us to suppress the notion that they have any experience at all. Perhaps the main reason we don’t consider the gods to have an experience is that they are metaphysical; they have no bodies. Thus, they have no way to perform the second stage of consciousness, to turn the “perceptions” of abstract ideas back into physiological ones. This operation is consciousness; it is what makes a computer into a conscious being, what makes resulting actions decisions rather than computations, what makes an artificial intelligence into a natural one.

In this sense, then, we return to the idea of phenomenal consciousness. The “consciousness” of an animal is however much of its computation is transformed back from thought to bodily perception. So rather, human consciousness is not unique in the fact that we have spatialization, etc., and are conscious of the computation of our behaviors. The level of an animal’s
consciousness is determined by their perception of the computations behind their actions as well. Rather, the human consciousness is so special because the human brain is a *Turing-complete computer* and the advancement of human consciousness to the level where the decisions and computations made by the computer can be understood gives us complete computing power, that is, the ability to compute *anything* physically possible, thus to work towards *creating* anything physically possible. That is the power of the gods granted to us in consciousness.

Spatialization and the other functions that allow the first stage of consciousness are present in all animals, as simply the transformation from the domain of physiological perceptions to data, computations, programs to make decisions. The second stage of consciousness is the computation itself. The results of the second stage are passed through to the third, which is the transformation of resulting behavioral commands into physiological actions. Animals are conscious in the first and third stage, and the smarter animals are conscious of some of the second (that is, they understand some metaphorical abstract concepts used in their behavioral computations (really, they have *theories* of what these concepts are) as rooted in behavior, through basic forms of language). Robots, too, are conscious in the first and third stages; they receive sensory data from the world, and then, after the data is nonconsciously processed by a program, is converted back into physical behaviors, e.g., mechanical movement, whose results can again be sensed by the robot. Greater and greater creation of models of perception that allow computations performed in the second stage to be perceived in the first and to be carried out as commanded behaviors in the third is what closes the loop and allows a conscious being to approach “full consciousness.” Even humans are not fully conscious, but our abilities granted by our consciousness of our brain’s god-like computation power allows us as individuals and as species to continue pursuing a full understanding of our minds and of the infinite organization possibilities of the world. Our species
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is not stuck at one level of consciousness; we can strive to become more and more conscious over
time. The computer of the human brain, is, in effect, a highly evolved artificial intelligence, but
through language and metaphor we gradually begin to experience its computations, to consciously
identify its functional operations and bring them into the experience of a being.

Programming the Mind

In order to perform any simple task, one must execute a series of cognitive instructions. If
the task is unfamiliar, then one must first understand it and develop a plan to undertake it. This
plan of behaviors that will be commanded of the mind and body is like a cognitive program.

Take, for example, the behavioral program to empty and refill a tray of ice cube. This task
involves opening and closing the freezer door; planning the order to empty, fill, and stack the trays;
turning on the faucet or otherwise pouring water at a particular speed in a particular location; and
reopening and reclosing the freezer. All of these listed steps are private behavioral experiences
that one has performed many times, but that may never have communicated to another person or
even been consciously recognized. But the order and manner in which they decide to carry out
each of these steps must, at some level, be or have been decided in their minds. The order and
manner of these decisions (how to stack the trays, to fill them altogether or individually, etc.) can
be seen as a program to be executed by the body. Some preferences (such as how fast to run the
water) for the program may have been thought out ahead of time, while others may be decided on
the spot or left to fate. If one can remember performing this task, then that must mean they have
performed it consciously and thus have, to some degree, a conscious understanding of the steps
and materials involved in the process. One can narratize anecdotes of particular instances of
performing the task, or at least can use logic and their generalized understanding to reconstruct or
simulate what the experience must-have-been-like.
Through volition in the present moment, one can modify the program that one is carrying out. Oneself is both the programmer and the computer executing the program. And this modification can take place even non-consciously, as is the case in non-conscious learning. In countless cases of simply living everyday life, we consciously choose to perform activities that involve particular sets of algorithms for understanding, and so we effectively consciously choose what processes will run non-consciously. This can happen indirectly, by putting oneself in a scenario where certain processes are required (e.g. watching a movie, going on a run), or directly, by attempting to perform certain processes on command (e.g. solving a puzzle, writing a song, preparing a meal). The more unfamiliar or difficult or boring the situation is, the likelier it is that one will “get stuck” or get distracted and end up losing conscious control over one’s thought process. With less entertaining tasks, one may catch the mind wandering or daydreaming; with more challenging or unendurable ones, the mind may turn away from the task at hand and refuse to cooperate.

In navigating a complex situation, one begins to simulate how it may develop, learning the twists and turns and coming to expect similar ones in the future. Some combination of conscious and non-conscious evaluation is performed to determine algorithmically or heuristically how best to proceed in the present moment or how to alter one’s strategy for the long run. If thinking consciously, one often follows trains of thought that are logical in nature (or at least attempt to be), walking through a strategy in one’s head. When operating non-consciously, one tends to follow one’s instincts (sets of guiding principles based on nature and past experiences) or respond in ways that were determined consciously ahead of time. For example, one may already know their favorite and least favorite foods, so when faced with the decision of what to eat, their automatic response might be to follow what is in their nature or has been decided by themself in the past.
This establishment of premeditated responses to future situations can be modeled as a relatively static variable that is checked in certain circumstances as a rule or for guidance. Its value can be used to resolve conditions and choose what action to take. If the authority of the response is high enough (e.g. coming from a god, a parent, one’s past self), then it may have the power to command a response and directly alter one’s behavioral functions. These cognitive conditions themselves can also be modified, and can be used to “set up interrupts”—conditions that will awaken the conscious mind in certain events. Examples might include overhearing one’s name spoken by a person in another room and suddenly tuning in to their conversation, or being jolted by the loud sound of a fire alarm and immediately switching gears from whatever one was focused on to now leaving the building.
V. Constructing Identity in Consciousness

I used to believe in a god, an eternal being who had created the universe, established its natural laws, and set time and space in motion. When I stopped believing, I found myself without an anchor for my identity as a conscious being. What now does it mean for me to be myself? Who or what am I? In my search for identity, I struggle to understand and put into words what it means to be a person at all. My identity is rooted in my consciousness, but the more I examine what consciousness is, the more I relegate it to just yet another cognitive operation. If all my behaviors in consciousness are just operations I witness, performed by the biological computer that is the human brain, then what makes me different? How do I feel conscious?

The Collective Cognitive Imperative

Over the past few years, as I have spent an increasing amount of time alone and inside due to the COVID-19 pandemic, I have struggled with myself as an idea. Without the regular pressure of existing among other people, there has been no sustained pressure molding me into the shape of a person. What makes me myself has slowly slipped away as the collective idea of me grew stale and drew more distant from my own. With few but myself to reinforce my own idea, however, it, too, begins to lose its shape, slump like concrete sludge into a puddle of loneliness or crumble brittlely like a granola bar under stress.

The importance of a socially shared conception of self: Other people validate (or invalidate) one’s experiences, either supporting or doubting the hypothesis that they are real, made of actual perceptions and not simply imagined. They back us up, give us additional justification to believe one conclusion over another, and offer a more objective view on the sensibility and accuracy of
our perceptions. They are the supporting girders and framework that keep our self-conception structured, well-formed, and upright.

By this idea that social interaction actualizes ourselves, I am not merely suggesting that it is a necessary aspect of our forming healthy personalities, but also that personalities cannot exist in its absence. The supporting pressure from other people, Jaynes’s so-called *collective cognitive imperative*, is a way in which we create our personalities and prove that they are real (322–25). Analogous to touching, tasting, seeing, smelling, throwing, hearing, an object in order to prove its reality in the concrete world of our senses, we prod and poke at people’s personalities to see them react, and these interactions prove their existence in the abstract world of our conceptions. Just as clacking two rocks together might support my perceptions as to their size and shape, weight and sound, when I speak with someone and act myself, the consistency (or at least sensibility) of our back-and-forth responses together give evidence to the forms of our personalities.

**Implications of Consciousness**

What it is like to be a nonconscious animal is what it feels like to live in the space of thoughts that animal inhabits. It is easiest to imagine what I mean in animals that seem to behave in one way for an extended period of time before switching behaviors on a dime, for example, a cat grooming itself who gets scared by a sound, runs into a wall, and then immediately returns to licking itself as if nothing happened. The cat’s experience in phenomenal consciousness while grooming itself was that of a relatively stable set of focal objects. Prior to hearing the loud noise, both its stimuli and responses were stable—the feeling and the act of licking itself. It is as if the cat were stuck in a looping behavior mode, in each moment performing the same behavior. As long as it received the same stimuli, it remained in the stable state. A stable state of phenomenal consciousness in this sense is that the set of objects of phenomenally conscious perception (what
is experienced) does not change, and the behavioral program for reacting to them does not change; thus, the experience of performing actions within the stable state (and thereby maintaining it) does not change.

In general, the experiences of animals and humans can be modeled as continuous transitions between states of conscious (characterized by sets of objects of conscious perception) as they interact with the outside world and experience changes in stimuli inside or outside of their control. However, the narratized human retains memory from one state to the next, which is equivalent to saying it has the functional capability to draw to mind excerpts of the previous state and use them to simulate the experience of the previous moment (by re-introducing the previous set of objects of phenomenal consciousness to the analog conscious self), but now they are experienced by the current reactive program. How are past experiences brought to mind and re-experienced? Either by referencing a cache of recent thoughts of sorts or by performing some function in consciousness to fetch excerpts related to those that are in consciousness, as a sort of shortcut for jumping from one to another—this is what language and other logical systems of representation allow for. In language, metaphor links or jumps between two words, and can thereby jump between various states of phenomenal consciousness. These may have occurred at different points in time, so this allows the present conscious being to experience simulations of the past or future. In simulating this present experience of past or future perceptions, the program of behavior is now presented with more than one source of conscious perceptions, thus more than one option for behavior. This marks the appearance of free will (or the illusion thereof), and is, in fact, the problem consciousness intends to solve—imagining another state of consciousness and reacting to it or otherwise using it to influence the present state.
It could be argued that in consciousness we have a plurality of these small, focused, stable-state programs of behavior. These modes of consciousness differ from each other, so we could be said to experience the world through different conscious being. For example, the cat, during both grooming behaviors, experienced a mode of consciousness unaware of the noise-scared cat who tried to flee, and vice versa. If I, as a narratized being, were to perform the same behaviors as the cat, either mode of my consciousness might be conscious of the other. It is the creation of my narratized self behind the experiences that ties them together in time to make “me” a narrative of consciousness rather than a single state. The opposite of this also occurs: occupying a certain focused program of behavior in a certain focused context, I may lose track of myself as a narratized being, seemingly condensing the whole experience into one short point of experience or a repeated cycle of conscious states. This is how time flies by.

Allow me to elaborate a bit of the graph theory underlying this model of behavior and thought as a set of interconnected modes of conscious experience. Each state of consciousness is a vertex, and the edges between these are transitions between states that occur when a particular trigger perception is noticed. The next state of consciousness is determined by the implicit input of the current state and the explicit inputs of conscious introspective perceptions and/or exteroceptive/environmental ones. These may change the state of consciousness directly or change the environment in such a way as to lead to a change in perceptions that indirectly results in a change in state of consciousness.

While experiencing one stable state or cycle of consciousness, we can, through consciousness, maintain knowledge of other potential states (this is really the ability through words to call to mind non-present states of consciousness. Consider the functionally identical memory of caches stored in a CPU as compared to the data that is fetched from larger and slower memory
storage such as RAM or disk memory. We see this analogously when knowledge is held in short-term memory vs. when it must be recalled from long). By narratizing these disparate states of consciousness, we assume their continuity, that one does not cease to exist while another is experienced. In a way, one behavior can be seen as “running” while the other states rest dormant.

By experimenting with our behaviors, we can learn to predict what actions cause what outcomes, including transitions between stable states or programs of consciousness. We can learn what behaviors to perform that will introduce new, outside perceptions as inputs to the present conscious state. In moments of uncertainty, those when the present state of consciousness does not have a programmed response, the mind either freezes (as deer in headlights), not knowing what response to produce and so producing none, or it switches to a program that can handle the input. This is effectively an edge transition out of one program of behavior and into another (although it is really just the formation of a larger program out of multiple sub-programs).

As in bicamerality, a returned reaction to an unfamiliar stimulus might be interpreted as a command from a god, handing down an authoritative decision for how to act (perhaps guessed and gradually learned to work using an unconscious neural network). When a behavioral program has reached an unfamiliar perception or been placed into an unfamiliar situation, it must signal for this function to run—it must cry to the gods for help. In this way, the “gods” of bicamerality were labels for programs that could perform logical processing of unfamiliar situations. Alternately, in the conscious mentality, the function that can be called for help is spatialized consciousness, where the computation of the guessed next best step can be performed through a series of logical operations within a language used to represent a system of logic.

Narratization allows the computation to reference conscious states separated in time, language to reference them, metaphor to jump between them, and spatialization to simulate them
and their results. In consciousness, the “help, what do I do?” function is no longer a black box, but a transparent program where these features that allows these other states of consciousness may be referenced, and allows us to compare options and come to decisions through systems of logic or value, which we work out in language. What makes consciousness transparent and experienceable is the translation of this reasoning process to and from the perceptions of a living being. This is the virtual reality of spatialization: a translation, through metaphor, of perceptions of an analog being to the perceptions of the animal, where the analog being can “perform” these abstract behaviors of working through, or simulating, series of changes in state of phenomenal consciousness. All this, spatialized, narratized, virtual consciousness allows.

I am the computation ongoing in my head. I am my thought processes, or at least their observer. I am the experience of computation. To be conscious of myself, I must have a world to experience, objects to perceive, and, most importantly, a self to do the perceiving. Consciousness is the simulation of a virtual being (or beings), instantiated in the computations of a living creature programmed as a biological computer (a robot or automaton), one who experiences a space analogous to the real world, whose sensations and behaviors are analogous to those of the body which it controls. Man was not made in god’s image, god was made in man’s. The virtual conscious being’s perceptions may sometimes be felt directly from the physical ones, when the translation between physical and analog, concrete and abstract, is direct, but other times, the perceptions of the conscious being are representations of what it would feel like for a conscious being to experience an abstract perception, put in terms, though metaphor, of perceptions that are feelable. The gods were virtual beings, artificial intelligences constructed by the computations of the human mind to encapsulate certain programs of thought, shared through social communication, and so, too, are we.
Works Cited
