Chapter Seven

The State of Information

A concern with paradoxes is one of the hallmarks of the twentieth century. Sometimes confused with a radical relativism in which all possibilities are equally acceptable, this focus on paradox is, in fact, a concern with the limits of knowledge and logic. Only when coupled with an instrumentalist desire to render all potentials immanent does it begin to take on the auspices of relativism based in a misconception of probability: as the concept of serial interpretation suggests, even when there is an array of potential interpretations (for example) there are more and less ‘correct’ responses within that range; the paradox is a special case, one where a simple resolution is not possible. The transformation from a deterministic, “clockwork” universe in the nineteenth century to the probabilistic one of modern physics marks a radical shift in not only thinking about the physical world, but in how it is modeled, conceptualized, and interpreted. At the same time, similar foundational changes were spreading through other disciplines as well: both mathematics and psychology produced theories of paradox that converge on those employed in quantum physics in describing our interpretation-encounters with the world around us. The interpretative model these fields present is one where contingency and variability are inherent properties of reality and certainty is replaced by
uncertainty and the probability set; the traditional, singular “truth” changes into one truth among many. However, it is important to acknowledge that the results of this interpretive structure are not relativistic in the typical sense, as employed in the non-specialists’ claim “truth is relative”; any confusion about this apparent “relativity” is resolved through a more detailed consideration of this model. Conceptualizing the state of information suggests an epistemology not based on certainty.

The emergent conceptual ‘space’ these fields have produced has enabled the development not only of modern digital computers, but of the internet, networked communication, and has transformed all aspects of our society. This model suggests that social, political, and cultural meaning proceeds from—in the sense are secondary effects derivative from—this larger conceptual space that can be termed the “state of information.” These culturally produced meanings, precisely because they are interpretative effects of how we use information, depend on creating relationships within that information space; however, all these relationships are recursive—once created, the new relations enter into that information space as further elaborations of the information space itself; they are easily (and often) confused with the information space.

Nevertheless, the concept of this information space does pose questions about the state of information and its relationship to cultural theory. So, while these secondary meanings and the space they describe are linked in a recursive formulation, totalizing; yet they are also entirely an abstraction that serves a descriptive or intellectual purpose. The space should not be reified: the state of information becomes problematic precisely at the moment it is reified as in the digital aspiration towards that state.

Understanding the state of information’s abstract space proceeds from four concepts that occupy a central position in their fields: uncertainty, superposition, schizophrenia, and seriality. The first three describe different aspects of what can be considered a singular phenomenon—the emergence of
paradox—while the final term identifies the ‘ground’ for the ‘figure’ that is paradox itself: multiple emergent, equally valid, yet exclusive, potentials within a delimited framework. Considering this figure-ground relationship has been an ongoing concern for a variety of distinct fields of empirical study from the twentieth century into the present, this consideration suggests an epistemological framework that requires inconsistency, which is implicit in the interpretative implications of Gödel’s Theorem as well as Holland’s CAS. Understanding the state of information requires the explanation of how these four concepts interlock since each term describes a specific aspect of how the state of information emerges from empirical observations; nevertheless, it is an abstract construct that is most apparent in the concept of the digital itself.

By attempting to literalize information as instrumentality, the digital aspires to become the physical manifestation of a “state of information” beyond all considerations of validity, empirical reality, or dialectical opposition: an equivalency reified in the idea of information-as-data. It emerges naturally from this idea. The suggestion that the digital transcends physical form through its replacement of physicality with “meaning” embodied in that (denied) physicality is the aura of information in action; the aspiration to achieve the state of information as immanent instrumentality is fundamental to this would-be transcendence; it also becomes apparent in the attempts to create what mathematicians term “completeness” inherent in the various ways the digital is deployed in security.¹ The digital aspiration towards the state of information is a direct effect of the immateriality assigned to the digital. The tendency towards reification of the state of information in digital technology (the digital aspiration to the state of information) is a consequence of the immortality of digital information; its perpetual accumulation in databases pro-

duces the illusion that it is possible for this information collection to create the type of completeness only possible in the abstract framework of the state of information itself.

The aura of information reveals itself via the digital as a mystification that breaks empirical relationships between information and reality required for validation; it logically develops from the aura of the digital, but where the digital aura strips physicality from consciousness, the aura of information is philosophically relativist, denying the need for observational, empirical, or factual relationships between interpretation and reality. This transformation happens because the state of information suggests that all interpretations are equivalent within its information space—even contradictory, mutually exclusive, or empirically false ones—because there is no distinction between interpretation and information. This understanding relates to Ludwig Wittgenstein’s comments about the empirical tests familiar from scientific procedures:

“An empirical proposition can be tested” (we say). But how? and through what? What counts as its test?—“But is this an adequate test? And, if so, must it not be recogniz-able as such in logic?”—As if giving grounds did not come to an end sometime. But the end is not an ungrounded presupposition: it is an ungrounded way of acting.²

Given the framework of these questions, the a priori ‘forms of life’ that inform both question and test become the grounding for the answer and provide the range of possible, acceptable solutions to those questions; however, to the question that addresses that grounding, What is it that provides the basis for that ground? is to open up an infinite regression. It is a question that cannot be resolved without the assertion of an arbitrary factor—the ‘forms of life.’ Such frameworks for thought emerge precisely because there is an assumption

of sequence (as in the logical syllogism), while the state of information specifically does not present sequence, but rather a multiplicity and continuity that denies logical sequence (it is \textit{alinear} rather than \textit{nonlinear}). Jean Baudrillard intuited this critical and interpretative over-extension of the uncertainty posed by quantum physics in his book \textit{Impossible Exchange}:

The uncertainty of the world lies in the fact that it has no equivalent anywhere; it cannot be exchanged for anything. The uncertainty of thought lies in the fact that it cannot be exchanged either for truth or reality. [...] The uncertainty principle, which states that it is impossible to calculate the speed of a particle and its position simultaneously, is not confined to physics. [...] Uncertainty has seeped into all areas of life. And this is not a product of the complexity of parameters (we can always cope with that); it is a definitive uncertainty linked to the irreconcilable character of the data.\footnote{Jean Baudrillard, \textit{Impossible Exchange}, trans. Chris Turner (New York: Verso, 2000), 3, 19.}

Baudrillard is discussing, without specifically naming or developing, the empirical bases for the concept of superposition. The paradox which lies at the heart of the state of information proceeds from a different situation entirely than the one Wittgenstein investigates, and it is one which is \textit{not} capable of producing answers and certainty—one where the reality that information/interpretation describes is a feature of that information, rather than an independent value. As a description of “all possible interpretations”, the state of information is an abstraction; only in its reification does it become problematic and promote relativism. This distinction of information from reality is the reason the digital aspires to the abstract state of information: this state, in reified form, appears as a super-structure beyond the concerns of physicality; this denial of the physical is the defining feature of the
aura of the digital.

§7.1

Central to understanding the state of information (and the triad of uncertainty, superposition, and schizophrenia) is the issue of paradox. When typically encountered, a paradox is a symptom of interpretative failure—it is understood as a point of logical/axiomatic incorrectness—a direct demonstration of inconsistency in a logical system. Mathematician Douglas Hofstadter explains in his book on paradoxes, *Gödel, Escher, Bach*:

But let us now say exactly what is meant by *consistency* of a formal system...that every theorem, when interpreted, becomes a true statement. And we will say that *inconsistency* occurs when there is at least one false statement among the interpreted theorems.⁴

All parts of a formal (logical) system must be true for that system to be a valid interpretative construction; inconsistency thus means the system is faulty, and a paradox means there is an even deeper flaw in the construction of the system itself. While interpretation as a general concept is not identical to the constructed formal systems of logic (such as mathematics), the formal systems Hofstadter describes are a specialized subset of interpretations: axioms and theorems are rigorously defined versions of past experience and future expectations; their role in a formal system is to render the information needed to construct the system (and any interpretations within that system) explicit. Inconsistent results demonstrate an inherent failure of interpretation; their resolution requires some type of external modification to resolve the incompatibility. Often this change comes from an empirical test against observable reality; however, inherent in re-

solving the paradox is a method for locating and improving interpretations—the inconsistency can also be understood as a liminal point of instability where multiple, equally valid interpretations converge: as a nexus where alternatives coexist at the same time and with equal validity. It is this recognition of paradox as a nodal point that creates the state of information. Paradoxes define the indeterminate points of collision and overlap between different interpretations; the state of information is a construct that emerges from how these nodes can be related to one another in a probabilistic space. Quantum physics calls this indeterminate state of overlapping, mutually-exclusive-yet-valid interpretation “superposition.”

§7.2

In quantum physics the concept of “superposition” developed because of an inconsistency between the formal, deterministic predictions of physics and the empirical results of experimentally testing those predictions: it is a term describing an apparent, fundamental paradox of physical reality. Physicist David Albert explains it as a paradoxical incompatibility of interpretation and observation. Knowing one observed value precludes being able to identify another:

We find that we can’t ever put ourselves in a position to say, “The color of this electron is such-and-such and its hardness is now such-and-such.” It isn’t that our color and hardness [tests] are built (somehow) crudely....It’s that any electron’s even having any definite color apparently entails that it’s neither hard nor soft, nor both, nor neither, and that any electron’s even having any definite hardness entails that it’s neither black nor white nor both nor neither. 

Albert’s observation that one value, color, is apparently incompatible with the other value—only one of these values can exist at any given moment. It is not that the tests are flawed, nor is it that the phenomena examined act inconsistently—there is something else happening that appears to defy our expectations of a single, consistent result. The solution to this paradox is to describe our predictions as equally valid, yet incompatible sets of probabilities: to abandon singular, absolute results. Viewing interpretation as ranges of potentials is a key feature of the state of information—the expression of any single interpretation as one within a range (or set of distinct ranges) where all interpretations are valid. Nevertheless, only one interpretation is immanent at any given moment. Again, Albert explains:

The rules for predicting the outcome of a measurement of (say) the hardness of a white electron turn out (in so far as we’re now able to determine) to be probabilistic rules rather than deterministic ones.⁶

Quantum Mechanics, in order to accommodate the paradox described by superposition, has been forced into a description of the world based on probability. This kind of interpretation presents opposed potentials as equally possible; instead of there being a contradiction in this description, the extremes become liminal positions of mutual exclusion. This is a ‘solution’ that does not “solve” the problem; it makes inconsistency into part of the ‘rules.’ The variability defined by ranges of equally valid, potential interpretations produces an “information space” that collectively ‘defines’ the interpretant. The state of information derives from the full range of superposed potentials that identify the extremes of this “information space.”

Instead of being deterministic and singular, the state of information, following the model suggested by superposition, defines interpretations as multiple, overlapping, mutu-

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ally exclusive, and explicitly contradictory: it is a network or a spectrum of possibilities, rather than monolithic. It is the existence of the range of potentials that is the guarantee of validity (i.e., all interpretations are valid, their validity being a function of presence within the larger range of equally valid potentials) even though only one particular interpretation will be empirically observable at any given time. The likelihood of empirical observation is simply another dimension of this multidimensional space. The state of information, while an abstraction, thus implies a specific type of (in)completeness unbounded from human knowledge in the same way that all the members in the set of rational numbers, while immanently describable, cannot be enumerated individually: this interpretative framework generates infinite regression at the same time as it is logically bounded. That the state of information originates within physically immanent observations and empirically describable processes does not negate its inherent nature as construction—it is necessary to acknowledge that the state of information lies outside the frameworks of human conceptualization except indirectly; the process of naming “the state of information” creates the illusion that such a state is comprehensible, that it can be conceptualized; it is problematic precisely because it exceeds our conceptual capacity in the same way that “the infinite” does.

§7.3

The “Necker Cube” is an optical illusion named after the nineteenth-century Swiss crystallographer Louis Albert Necker who discovered it. He noticed that salt crystals appeared to reverse their orientations when viewed with a microscope. Optical illusions provide a direct way to consider the interaction between different, incompatible (superposed) interpre-

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tations\(^8\) and our choices that determine which interpretation we see at any given moment:

![Necker Cube](image)

The indeterminate orientation of the salt crystals Necker observed is recreated in this optical illusion (above) by a network of visually ambiguous lines that we interpret as a cube oscillating between an ‘up’ and ‘down’ orientation. It presents two possible orientations using the same set of potentials. Which interpretation of the Necker Cube’s orientation we see is completely dependent on how we interpret the relationship of the constituent lines. Our understanding of the cube’s orientation suggests a feedback loop between our visual perception and our interpretation of the figure’s orientation\(^9\): interpretations and perceptions dynamically interact to resolve the visually ambiguous figure into one orientation or another.

These lines gain their meaning as a cube only from the relationship we choose for them, a decision that happens so


easily and immediately that we may not be aware of making it. It is determined by our mental arrangement of the elements ‘spatially’ using our past experiences as a guide. Our visual interpretation of this figure remains constant only so long as the arrangement considered most probable remains constant. However, how we interpret this cube is a dynamic process of examination and engagement; when the interpretation of which orientation is most likely changes, the form correspondingly shifts, demonstrating that this figure’s orientation is superposed between two distinct, yet incompatible, orientations. This figure, like all optical illusions, allows us to encounter the variable ‘space’ of the state of information “directly.” Changes in our initial interpretations are what cause these visual shifts. These transformations are evidence for a superposition resolving into a particular outcome.\textsuperscript{10} The multiple interpretations of this singular figure reveal the contingent and interactively-determined nature of our selections from the range of potential interpretations.

Interpretive shifts suggest that there are discrete, interactive levels to interpretation. The movement from one interpretation to another in optical illusions is a function of these different levels of interpretation checking against perceptions and failing to match what is being perceived as sensory experience. Depending on how the image is understood to be oriented, all other levels of interpretation are shaped by the expectations it establishes. However, as the Necker Cube shows, our sense perceptions are inconsistent and fully determined by our initial assessments of what we encounter. Our apparent (immanent) experience of the world is only one possibility, a potential understanding that undergoes constant comparison to new perceptions. The “state of information” is a construction for identifying this abstract realm of (un)realized possibilities.

\textsuperscript{10} Woolf and Hameroff, “A Quantum Approach to Visual Consciousness.”
Ernest Nagel and James R. Newman explain the foundation and form of Gödel’s Inconsistency Theorem in their book, *Gödel’s Proof*. Their discussion demonstrates Gödel’s claim that all systems of rules (axioms) will produce inconsistencies in the form of paradoxes that cannot be resolved. In epistemological terms, Gödel shows that formalized knowledge derived from logic is, in itself, an inconsistent, tentative proposition:

Gödel showed (i) how to construct an arithmetical formula $G$ that represents the meta-mathematical statement: ‘The formula $G$ is not demonstrable.’ This formula $G$ thus ostensibly says of itself that it is not demonstrable....But (ii) Gödel also showed that $G$ is demonstrable if, and only if, its formal negation $\neg G$ is demonstrable.\(^{11}\)

The appearance of an infinite logical regression—a series of repeating logical contradictions whose “resolution” simply shifts the focus of the contradiction—happens precisely because the formula $G$ is inconsistent. In the formal system of logic, Gödel’s Theorem is both correct and invalid at the same moment: it is a true statement of logic that simultaneously cannot be true; its validity exists in superposition; inconsistency is a defining feature in paradoxes of interpretation. Gödel’s formula follows the rules for the logical system of symbolic mathematics, but in following the rules, he shows that the system of mathematics is inconsistent:

Gödel’s paper is proof of the impossibility of demonstrating certain postulates....The traditional belief that the axioms of geometry (or, for that matter, the axioms of any discipline) can be established by their apparent self-evidence was thus radically undermined....For it became evi-

dent that mathematics is simply the discipline *par excellence* that draws the conclusions logically implied by any given set of axioms or postulates.\(^\text{12}\)

In general terms, what Gödel demonstrates is that the set of assumptions which provide the foundation for logical certainty have an arbitrary basis. This demonstration has consequences for justifying all interpretations since it identifies a fundamental failure of logical procedure: any set of ‘rules’ can produce paradoxes in the form of unresolvable loops. Regression is the problem posed by questioning Wittgenstein’s ‘forms of life,’ and shows that Gödel’s demonstration extends beyond mathematics and formal logic, a point raised by Nagel and Newman in their introduction. Inconsistency is a fundamental component of our interpretations generally, although it only becomes apparent through a process of interpretative engagement or in atypical situations where ambiguity dominates and singular interpretations reveal themselves as contingent.

§7.5

The clinical description of schizophrenia is a cognitive disease that develops from a mental state of superposition that psychologists call “ambivalence.”\(^\text{13}\) In his original description of schizophrenia, Eugen Bleuler concluded that its basis was a *pathological ambivalence*\(^\text{14}\) that exaggerates typical situations into a conflict resembling superposition, a type of mental paradox:

(1) *Ambitendency*, which sets free with every tendency a counter-tendency.


(2) *Ambivalence*, which gives to the same idea two contrary feeling tones and invests the same thought simultaneously with a positive and a negative character.\(^\text{15}\)

These definitions repeat the inconsistency identified by Gödel; while the human mind is not a formal system such as mathematics, it is the source of such systems. The demand that the world be ordered within a specific, *a priori* interpretative framework is schizophrenic; all interpretations have a schizoid component. The pathological varieties of schizophrenia emerge precisely because of a dysfunctional response to these superposed potentials.

Psychologist Mark Garrison views the indeterminate character of the ambiguous as the cause of schizophrenia: the difference between a pathological and ‘normal’ thought process arises from how the ambiguity of superposition is “handled” by the interpreting mind; the kinds of variability his model requires are coincident with those proposed in quantum physics by the concept of superposition. In schizophrenia, ambiguity polarizes into ambivalence (superposition), blocking ‘normal’ solutions. Garrison’s retheorization of schizophrenia proposes a model for understanding how the mind “solves” the problems posed by superposition through “opposition”—the autonomous generation of negated interpretations:

Opposition solves not only ambivalence but also indecision, forcing an either/or decision or no decision at all. Ambivalence occludes multiple alternatives, ambiguity, and multiple meanings (polyvalence), forcing a dominating tension of opposites. Ambivalence—pathologized—both shrinks the world into oppositions and prevents (blocks) movement through it.\(^\text{16}\)


Faced with an array of equal potentials, the tendency to collapse variability into ambivalence is a method to force an interpretative selection. What makes schizophrenia different from ‘normal’ thinking is not that the opposition is unresolved—it is that schizophrenia presents a pathological inability to cope with multiple (superposed) potentials or alternatives. A ‘normal’ resolution is one that remains within the established parameters of Wittgenstein’s ‘forms of life.’ Garrison notes:

The psyche must cope with the configuration of ambiguous fragmented experience into contrary tendencies and oppositions, and it must find its way through the maze of resemblances it makes from these ambiguities. Overlay this myth-making process with the various demands from the environment for singular, rational actions—the myth of continuity and the fantasy of singularity—and the potential for ambivalence is great indeed.17

This theory of consciousness has an element of essentialism to it, mediated by its limitations. It is not an account that proposes a complete explanation; instead, what Garrison advances is the thesis that the conditions of a superposed, uncertain reality—both in the physical and interpretative senses (i.e. the state of information)—has produced a set of coping mechanisms for the inconsistency of our interpretations; this transformation from a range of potentials into a dualistic pairing, an either/or opposition, is exploited by agnotology, not through a pathological blocking of resolution, but through the substitution of an alternative set of potentials—a different either/or dialectic—that creates the uncertainty about selecting an appropriate resolution to the interpretive problem. This ambivalence about how to proceed with the fundamental analysis enables the creation of an interpreta-

tion, not a pathology of interpretation (agnotological interpretations proceed normally, as with any other normal interpretive process), which characterizes the agnotological procedure.

This model of schizophrenia reveals two kinds of ambivalence acting on interpretation; both are operative in normal and agnotological constructions. The first is a natural feature of the physical world that all interpretations must address on multiple levels: not simply that of physical sense-data, but on subsequent elaborations of that sense-data into the lived experience we have in encountering reality. This ambivalence is inherent to the universe and exists independent of the observer. The second kind of ambivalence develops in the mind of the observer as a means to check the interpretations of the ambivalent environment; both function in interpretation as a means to resolve superposed potentials through recourse to empirical observation and via past experience and expertise. It is the application (and validity) of this past experience that agnotology brings into question. Mathematician John Holland’s CAS models these past experiences as a “bucket brigade” that assumes successful interpretations will make future interpretations based on them more likely to be successful. It builds on past success as a way to help insure future success, i.e. the past acts as reference for the future. This procedure enables us to make sense of the world around us by using our past experience to shape future interpretations. The interpretative process that is pathological in schizophrenia begins with the same basic set of perceptual cues and processes that constrain and direct all other interpretations, even those more complex than simple perception.

All interpretations are necessarily subject to schizophrenia since they function as divisions and limitations of interpretative possibility a priori: Wittgenstein’s ‘forms of life’ describe these successful past experiences. They provide an apparent commonality for our ability to communicate about the world around us. Pathological ambivalence suggests the development of an unresolvable inconsistency that forces the mind to adopt other solutions than what ‘normal’ minds em-
ploy. This possibility is consistent with Bleuler’s observations of schizophrenia as a disease defined by symptoms with no apparent psychological cause; the description of the schizophrenic pathology, which is a failure of adaptive interpretation, is distinct from that state’s physiological basis in the mind. The schizophrenic mind chooses a potential response that is not as likely as those chosen by ‘normal’ minds; this is a direct result of blocking created by unresolved ambivalence. The choices made are part of the same “information space” as normal decisions, but follow from idiosyncratic foundations. The development of agnotology inverts this relationship that enables the separation of functional and pathological, substituting unresolvable contradictions for the established, successful resolutions, resulting in not only a diversion of established resolutions, but also the inability to generate further resolutions specifically because the foundations of those resolutions are in doubt and remain unresolved—it offers instead the suggestion that all solutions are idiosyncratic.

§7.6.a

The approach to interpretation suggested by the concept of superposition, and elaborated through the consideration of the Necker Cube and Gödel’s Theorem, creates a framework for understanding interpretation that is indeterminate; single interpretations resemble nodes in a network of intersecting probability scales—positions within a series of possibilities. This relational nature of interpretation is what allows the agnotological to emerge as anti-knowledge while still proceeding through the normal process of ambivalence resolution. The state of information emerges as a necessary abstraction produced by this approach; attempts to render it immanent using digital technology are simultaneously an aspiration to the state of information and a symptom of the aura of information acting upon the application of digital technology.

By employing Holland’s CAS model as a means to resolve the logical ‘black box’ of past experience in Umberto Eco’s
theory of serial form, the nodal model for interpretation emerges from the relationship between past experience and the immanent decision to choose one potential interpretation instead of another; the state of information is a logical consequence of this model.

§7.6.b

Umberto Eco’s conception of “serial” means, first and foremost, that the audience for the serial recognizes and acknowledges the ways the audience’s knowledge is required to interpret a specific episode in a serial. It is a reciprocal connection between immanence and remembrance; it implies a model for interpretation that is centrally focused on the interpreter actively working to resolve indeterminate potentials—precisely those situations identified by the concept of superposition. The spectator’s interpretations employ frameworks created through previous encounters with similar types to anticipate and recognize divergences from established norms.18 In selecting one interpretation from within a set of potential interpretations—a choice that is subject to later interpretative reversals—produces contradictions and oscillations between equally likely interpretations (as in the Necker Cube). It is the provisional nature of this interpretative choice that is significant, and it produces an expanded field of potential interpretations when the possibility of interpretative inconsistency is admitted into the framework as a limiting factor which describes those positions of greatest incompatibility. This interpretative construct generates a greatly expanded field of potential, valid interpretations, and at the same time creates a logical justification for those alternative interpretations, thus enabling the potential for agnotological procedures to challenge any established interpretation. It is this indistinguishability of agnotology-as-interpretative-procedure that produces the affect common to all

agnotologies—the creation of an unresolvable uncertainty: agnotology seeks to generate a superposed set of potential interpretations.

§7.6.c

The inconsistency “superposition” represents, and which enables the emergence of agnotology, provides the mechanism for adaptation in Holland’s CAS model. His description uses natural selection to choose the best-working example from a group of potential solutions.19 “Best-working” interpretations meet the needs of the interpreter in encountering the environment examined. The interpretative demands are constrained by the feedback loop which produces them, generating new interpretations based on earlier successes.20 Inconsistency is essential to this process; the ability to allow inconsistencies to exist simultaneously and to evaluate those inconsistencies for relative degrees of success is a logical necessity in this structure. It requires a ranking of interpretations based on their “fit” to the specific situation being encountered. When modified by Eco’s serial framework, these interpretations become ordered as with nodes in a network.

The concept of “superposition” suggests understanding interpretation as a “probability set” presenting a range of tentative possibilities rather than a singular, deterministic result. While Holland’s CAS does provide a method for addressing superposed potentials, it can also potentially ‘lock’ interpretation into a singular position, making the kinds of interpretative shifts that are readily apparent in viewing the Necker Cube a problematic situation. The instant flipping between one orientation and another implies the coexistence of (at least two) mutually exclusive interpretations that are essentially (and easily) interchangeable. The serial version of CAS justifies these competing interpretations without neces-

19 Holland, Hidden Order, 79.
20 Holland, Hidden Order, 61–76.
sarily forcing us to choose between them. Both are equally valid interpretations defined and mutually supported as valid potentials by their relationship through variation. The probability set as a whole—the existence of a series of mutually exclusive (and intermediate) interpretations—is the site of “validity” rather than any singular interpretation. These alternatives do not undermine interpretation; the probability set as a whole authorizes alternative potentials at the same moment as any singular interpretation achieves apparent ‘validity.’ The mutually assured validity of interpretations in the state of information emerges from the extension of superposition and optical illusions to other types of interpretation that are less obviously (apparently) in superposition.

Interpretation proceeds by employing inconsistency as a technique, thus seeking to create superposed potentials rather than avoiding them, since it is through encountering and addressing these undecidables that interpretative success emerges. Holland’s CAS model requires that even when there is no obvious contradiction, that one is created—ambivalence in psychology is the generation of these oppositions; what emerges from this ambivalence as pathological schizophrenia is the quantity, strength, and unresolvable nature of these conflicts. Its specific strengths when confronting the variability of superposition is suggestive when we consider the variety of mutually exclusive theories and interpretations that characterize broader fields of thought; at the same time, Gödel’s Theorem suggests that the appearance of inconsistencies within any interpretative schema is inevitable. Our ability to accept and evaluate, even employ, multiple, different (even contradictory) interpretations at once suggests an empirical basis for the nodal approach to interpretation.

The role of past experience in interpretation serves to mask the inconsistent aspects of everyday experience; that the world appears neither uncanny nor inconsistent is a necessary result of how Holland’s building blocks function: in-

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interpretation adopts the most likely potential that is consistent with what has already proven successful. Only in specific situations where alternate and equally potential interpretations emerge does the underlying superposition visibly “appear” as in the Necker Cube, or with paradoxes generally.

§7.6.d

The “nodal” view of interpretation identifies any singular, immanent interpretation as a choice from a probability set whose composition is serial—a collection of various, competing interpretations. This view opens possibilities for justifying interpretation in a flexible and open ended fashion; the nodal model is one where interpretations are ‘nodes’ in a multidimensional space of potentials; collectively, these nodes describe the state of information—“information space.” Because the nodal model appears superficially quantifiable, it implies the potential to become instrumentalized through the application of technology—i.e., specifically via the digital. It is precisely the analogy of a nodal (or network) conception of interpretation that suggests the possibility of transition to instrumentality; however, this application is reification.

Being able to describe a process where expectations can arise, shape interpretation, and then evolve provides a framework for justifying interpretation generally through recourse to a set of potential interpretations. Conceptualizing interpretation as nodal shifts the emphasis in supporting specific interpretations from an external foundation (immanent empirical correctness) to an internal one: specific interpretations are justified by/through the existence of alternatives with common features: ‘truth’ conceptualized as a spectrum of potentials. This process creates a state where all potentials coexist as information. The momentary superiority of one interpretation does not invalidate the others; a shift to another possibility is always potentially immanent. Like Eco’s serial forms, the nodal approach to meaning depends not on specific individual interpretations but on the relationship between specific interpretations and the system that creates
them and which they collectively define. The digital’s ability to manipulate data directly leads to the general aspiration to manipulate and contain the “information space” itself; this is the aspiration of the digital to the state of information; this aspiration requires a limitation and reification of that space, collapsing its variability into a limited, a priori series of potentials—the illusion that this space, however large, is infinite is the aura of the digital in action.

Nodal interpretations are justified by the concept of mutually assured validity: the validity of one interpretation is established through its relationship to other potential interpretations. In this schema “past experience” is a method for choosing highly probable interpretations from the range of potentials, but does not eliminate the potential to shift from one interpretation to another: it is not a source of validity for any single interpretation against another. The abolition of a dialectical/dualistic basis for interpretation produces the apparent (superficial) egalitarianism of the state of information where all interpretations are valid potentials. This is not a philosophically relativistic construction because this entire “information space” exists in “superposition”; only one potential can be valid at any given moment. The “nodes” are abstractions that do not actually exist within that space, but rather are features of our interpretations falling within the parameters of the space itself, useful in conceptualizing their relationships to each other.

Even though the nodal interpretative model proposed here is extremely schematic, it suggests possible strategies for justifying interpretations without precluding their rejection or revision at a later time; it is a means for selecting individual potentials from within the state of information. Yet, it is important to recognize there is a distinction between the nodal approach to interpretation and the interpretative “space” that approach inherently suggests—the state of information is an abstraction implied by, but independent of, the nodal approach itself.
The instability of the Necker Cube becomes the instability between different levels of scale within a given construction. What we commonly call “experience” and “expertise” are forms of learned behavior. Faced with an array of equal potentials, the ambivalent nature of perception forces an interpretative decision; without making an initial choice about relationships and organization, there can be no evolution towards successful interpretations. Barthes’ observations about initial interpretative choices are true for all meaning-bearing constructions:

Distance and proximity are promoters of meaning. Is this not the great secret of every vital semantics? Everything proceeds from a spacing out or staggering of articulations. Meaning is born from a combination of non-signifying elements (phonemes, lines); but it does not suffice to combine these elements to a first degree in order to exhaust the creation of meaning: what has been combined forms aggregates which can combine again among themselves a second, a third time.²²

Barthes is discussing the organization of Mannerist painter Giuseppe Arcimboldo’s composite heads, but he could just as easily be discussing the paranoiac-critical paintings of Salvador Dalí, or the Graphysics of contemporary painter Rostarr. These observations are also true of how we transform the marks on a page, wall, or screen into letters that become words, which in turn become sentences, paragraphs and so on. It is the scaling-up of organization that generates constructions that when related, via successful past experiences, are able to become meaning-bearing.

Consider *Negative Space Traveler 7* (2008), a painting by New York-based painter Rostarr. In interpreting this painting, we create order in the network of lines by deciding on a series of relationships that generates figures; these decisions structure what we see, and are part of the work’s significance. The appearance of the figures in these paintings requires an interpretation of abstract lines as representation; it mirrors the choices made in interpreting the Necker Cube.

These figures are a potential, but equally possible is the apprehension of the image as a network of abstract ribbons, overlapping. Each image remains in superposition until one or another potential becomes a dominant interpretation for the viewer. It is this shifting of interpretations that Rostarr calls “Graphysics” in an explicit acknowledgement of the
superposition present in these paintings.²³

The transformation effected here is a shift between a variety of pure abstraction familiar from Minimalist paintings by Frank Stella that becomes a network of faces and anthropomorphic forms. The emergence of form is a specific choice by the viewer, and gives these works a dramatic anthropomorphic character: they invoke an internal, subjective reality whose instability reflects the shifting character of the state of information.

§7.7.b

The crucial factor in these interpretations is “successful past experiences”—these correspond to the ‘forms of life’ that Wittgenstein suggests are a priori to any encounter; however, the success of these past experiences is dependent not on the interpreter, or a particular interpretation, but the ability of other interpreters to also produce a similar interpretation when confronted by the same initial material. Abbott and Costello’s Who’s on First? demonstrates this problem:

Costello: Well then who’s on first?
Abbott: Yes.
Costello: I mean the fellow’s name.
Abbott: Who.
Costello: The guy on first.
Abbott: Who.
Costello: The first baseman.
Abbott: Who.
Costello: The guy playing...
Abbott: Who is on first!
Costello: I’m asking you who’s on first.
Abbott: That’s the man’s name.
Costello: That’s whose name?
Abbott: Yes.

Costello: Well go ahead and tell me.
Abbott: That’s it.
Costello: That’s who?
Abbott: Yes.

This comedy routine depends upon a recognition that “who’s” and “whose” sound the same. We laugh at their predicament because we understand how easily it happens, and how frustrating it is when it does. Abbott does not explain the ‘rules’ of substitution to Costello, and the simple explanation, *that the first baseman is named Who*, depends on our ability to recognize a shift in function for the word *who*. The comedy in this routine is thus sadistic: it emerges from the semiotic torture of Costello and his inability and rising frustration with Abbott’s refusal to answer his question. In reality, they are speaking entirely different languages.

What each of these instances involve is a differential between the author and the reader; the staggering of articulations proceeds based on a set of rules which the reader either implicitly deploys in interpreting, or must discover through trial and error in order to render the alternative, declarative meaning in “who’s on first.” This is a dynamic process of engagement, not a passive one where the interpreter simply receives the instruction from the author. It requires the selection of appropriate interpretative engagements in order to arrive at a semblance of meaning.

In tracing the parameters of an interpretation, what emerges is a shifting set of relationships not only between the elements that are being interpreted, but between the author (Abbott) and the reader (Costello). The shifting relationships between elements are a signpost for the shifting nature of nodal interpretations. It reveals the authorial differential between Abbott, Costello, and the audience who recognizes the dynamic and is complicit in the comedy being performed.

Our interpretative ability to “back-up” and change our initial assumptions based upon their applicability to a given situation allows us to resolve paradoxes. It is this feedback process that is crucial to Holland’s CAS model for adaptation.
(and interpretation). Language and communication are neither automatically functional, nor are they necessarily unambiguous in meaning. The transition from the state of information to the reality of interpretation depends on how we apply our knowledge of the ‘rules’: thus, appearance of meaning is determined by other interpreter’s ability to recognize that interpretation as well—this is the distinction between the abstract state of information and its emergence within any specific interpretation. It is this initial decision that shapes the entire interpretative process that follows. As the inability to communicate in *Who’s on First?* results from the inconsistency between ‘normal’ and specific uses, the associative procedures of the rhetorical “jumps” evident in this dialogue demonstrate that superposition is a methodology for ‘rule’ discovery, providing a means to test and a technique for expanding interpretative results.

\[7.7.c\]

Meanings become pathological specifically when they are unique to a singular interpreter. According to psychologist Mark Garrison, the experience of superposition we encounter in Abbott and Costello’s routine is an essential component of communication; without it there could not be the kind of creative thinking called “poetry” or “rhetoric.” As Garrison observes, it enables communication of ideas not immediately apparent:

Jung characterized Bleuler’s understanding of ambivalence [superposition] as the “fusion of one function with another.”...Rhetoric demonstrates that ambivalence is fundamental to language for it is in rhetoric that all aspects of ambivalence converge....In a metaphor taken literally, communication is blocked and meaning cannot move....Mediated by recognition and acceptance, it is therapeutic, imaginative, originating and joining. It is a
phenomenon crucial to psychological experience.²⁴

Rhetorical devices perform the transformation of ‘normal’ speech into a poetic construction that encourages associative understanding. Persuasion in rhetoric works through the transposition of values without the use of logical structures; this is the effect of superposition collapsing. This transfer occurs because both the speaker and listener agree—implicitly—to accept the superposition of associative speech.

Without the agreement between speakers that meaning will proceed according to specific ‘rules,’ where the words used have clear roles, we cannot communicate; for the interplay that creates the comedy in Who’s on first elides these roles and is both the confusion and the joke, (as does the confusion of reality and metaphor Barthes describes in the example below). There is an overlap between Garrison’s ambivalence and Barthes’ semiotic theory: both suggest a central role for inconsistency in a model of communication and miscommunication. Crucial to Barthes’ explanation of his semiotic procedure is the metaphor taken literally:

One of the techniques of the poet Cyrano de Bergerac consists in taking a perfectly banal metaphor in the language and exploiting its literal meaning. If the language says “die of grief,” Cyrano conceives the story of a condemned man whose executions sing him tunes so lugubrious that he finally dies of grief over his own death.²⁵

This narrative is absurd, comic in its implication. It proposes a relationship that recognizably distorts the role of language and the power of metaphor—songs do not kill people, no matter how depressing and sad they may be. Our interpretations perform this jump “without” thought; it is a tacit agreement based in our past experiences with the ‘rules.’ This type of agreement is often called transparent because we do

²⁵ Barthes, The Responsibility of Forms, 141.
not become aware of our complicity in accepting its terms or our role in maintaining and deploying these conventions whose purpose is the containment of ambiguity so we can communicate. We are familiar with the ‘rules’ for this kind of statement and the rhetorical connection it makes; it is the types of shift that the state of information describes.

§7.7.d

The concept of “semiotic disobedience,” as developed by law professor Sonia K. Katyal, describes the on-going conflict over intellectual property as a function of political speech; however, she includes in her framework the

[a]ppropriation and occupation of intellectual, tangible, or even bodily property. I call these recent artistic practic-es examples of ‘semiotic disobedience’ because they often involve the conscious and deliberate re-creation of prop-erty through appropriative and expressive acts that con-sciously risk violating the law that governs intellectual or tangible property.

Katyal further elaborates:

This article defines semiotic disobedience to include a number of approaches to visual, actual and verbal repre-sentation, including vandalizing, subverting and “recod-ing” certain kinds of intellectual, real government, and private property for public use and expression.

The emphasis on physical properly in a discussion of intel-lectual property is only to be expected; however, this emphasis obscures the disruptive functions of recoding; these proceed by enabling superposition to emerge. What these transfor-

mations perform is a change of meaning through a systematic shift of ‘rules’ that result in a changed resolution to the paradox of interpretation. This change reflects a differential between the potentials employed at any given moment and the possibilities contained by the information space itself.

The systematic reappearance throughout the twentieth century (under new nomenclature) of remix/appropriation/mash-up/montage/collage—the reassembly and alteration of manufactured materials into new art objects, whatever the name used—and of Duchampian found objects, commodity sculpture, even the transformation of commonplace objects in Pop, are all variations on this disruption of conventional engagements. Initially all these actions share a common shift in category from everyday object to artwork; in performing this shift they violate an established semiotic system of organization in favor of other, implicit and valid yet unexpressed, values. It is through a shifting of potentials described within the state of information that these changes appear both natural and logical to us in retrospect, yet they all are examples of the superposition implicit in the state of information itself.

Katyal’s conception of semiotic disobedience addresses graffiti and other kinds of “culture jamming” that are deployed directly as political speech, but which impose a shift in engagement between audience and object; however, all these depend on the transformation of established meaning and order and its replacement with an alternative. The validity of this transformation is established by the state of information’s suspension of validity: interpretation is an ambivalent phenomenon that reveals the authority of official statements are one political position among others. The superposition emergent in the state of information is deeply threatening to established orders—both of political domination and political resistance—because it subverts the messaging codes of each.

Jose Parlá’s painting, *Temporary Autonomous Zone* (2008), is a typical wall-sized painting: covered with swirls of his stylized calligraphy, it includes a single piece of poster stating
“US TROOPS OUT NOW,” torn and ragged, an official statement that dominates the painting. The decay of the poster implies the instability of the political message it conveys; as much as the collage employed is itself always already an example of semiotic disobedience, this political statement both covering earlier and covered by later layers invokes a superposition of meaning. While explicitly a political statement, at the same time it lacks the urgency appropriate to the message conveyed—NOW appears to be long past—thus, attenuated. Its specific political message becomes something historical; life moves inexorably on, incorporating both the dominant powers and objections of the dominated into its matrix: visualizing the equivalence of positions identified by the state of information.


Parlá’s painting superposes the anti-Iraq war protests with pro-war sentiments through the handling of the poster: ripped, dirty, worn, it becomes a sentiment that is simultaneously demanding and passive. It becomes possible to think of the demand in multiple ways simultaneously: as having failed, succeeded, or even having been superceded by other,
more pressing concerns. The transformation from immanent to past leaves the status of its proclamation in doubt; the multiplicity of potentials that results destabilizes all the possible positions that can be held in relation to the poster’s statement—support, denial, apathy—become merged as equal potentials. Each is justified as a valid potential, but also countered by the immanent presence of the alternative: they are an assertion of possibilities, of alternative political situations. This paradox is reflected in the ambivalence of the title, *Temporary Autonomous Zone*, it itself a reference to Hakim Bey’s book, the issues evoked by the ambiguity in the painting reflect upon its intertextual namesake.

§7.8

“Superposition” describes both the paradox and our inability to interpret a solution to the problem it presents by discussing how an observer interprets an experiment. Albert notes that superposition requires that we believe both possibilities simultaneously:

The standard way of thinking about what it means to be in a superposition somehow flatly contradicts what we unmistakably know to be true of our own mental lives.

The concept of superposition prepares for a new model of conceptualization. It appears as a means to “resolve” the contradiction by not resolving it. Instead of finding a way to reject the resulting inconsistency which our interpretations produce, superposition suggests these inconsistencies are the point of the theory; it produces a set of alternatives which suggest any interpretation will eventually fall victim to its own immanent inconsistencies: Gödel’s Theorem shows that all formal systems must be incomplete. The implication of

these developments is that reality is in flux, continuously subject to investigation, transformation, and argument.

Instability of relationships, and the consequent uncertainty—the ambiguity of the state of information as a description of reality—provides the epistemological authorization for the emergent production of agnotology common to digital capitalism. This agnotology exploits the suspension of validity presented by the state of information to achieve its particular effect on interpretation and knowledge: the superficial slide into relativism that the aura of information proposes is the enabling factor for agnotology’s counter-production. By proposing alternative interpretations based on similar (or even the same data), but proceeding with different, implicit assumptions, agnotology is symptomatic of the aura of information. The socio-political exploitation of the information space’s resolution of interpretative conflicts through superposition is the agnotological process: the use of agnotology to create uncertainty for economic or political benefit; a reification of the state of information without recognizing the dimension of validity (constrained by logic and empiricism) in that space. The demand that all interpretations be accepted and evaluated equally—the positive aspect of the nodal relationships—presents as a negative corollary the agnotological dissolution of certainty as a means to prevent political engagement or action: consider the various demands occasionally heard both before and after the crises of 2008 about “audit the Fed” or “audit Fort Knox” or “audit ________.” All these political calls-to-action have a basic problem: it is not what the results from the audit might be, but the credibility of any result produced for those making the demand. It is not a post-modern plurality or relativity of values, but representative of something else, a different process, whose action superficially resembles relativism, but is not.

As with other sites of agnotologic action, such as demands that American President Barack Obama produce his “real” birth certificate (which continued even after he produced the actual document), the issue with these calls for an “audit” is fundamentally an issue of how agnotology has undermined
the knowledge-creation and validation process: there is systemic uncertainty about the factuality of any claim made, any evidence presented, any empirical proof shown. This is the relativism posed by the aura of information in action—it does not matter what the results of any audit might be because there is no longer a space in which we as an audience can agree upon what those results might signify, what the epistemic value of that evidence might be: the ability to determine fact has been dissolved by the process employed to produce those facts in themselves.

It is the breakdown of the procedures that create knowledge and establish the reliability of information that are attacked when agnotology comes to dominate. Thus, no matter what the result of such an audit might be, it is the audit itself that is in question. The ones calling for these audits begin with the assumption that whatever audit they currently have available to them is of no value—the most obvious symptom that their thinking is caught in the trap of agnotism.

The problem posed by a dominant regime of agnotology is that it authorizes doubt about any result—literally any piece of information—that does not match a preconceived frame of reference. It makes challenges to established patterns of thought difficult if not impossible: the affect of agnotology, perversely, is a reinforcement of certainty since it undermines alternatives that could challenge those ideas; thus, it leads to an unwillingness to compromise, and an inflexibility of thought—both of which are ‘solutions’ to the problem of ambivalence described by Bleuler and Garrison. The pathological dimensions of this response are apparent in the ways this ‘certainty’ blocks the ability to revise, reconsider and accept alternative potentials as (even potentially) valid.

The variability and limits of interpretation that developed during the twentieth century in quantum physics and mathematics lead to the emergence of the state of information; they are also preconditions for the invention of contemporary digital computer technology. The apparent “naturalness” of the interpretative framework that produces the state of information is closely related to the invention of these
technologies, their widespread dissemination, and the current cultural aspirations towards the state of information exhibited by the digital generally. The consequences of this approach remain uncertain precisely because it presents an expanded field of interpretation. Although bounded by pairs of mutually exclusive potentials (as most obvious in the Necker Cube’s orientations), the epistemology the state of information implicitly creates is not a system built from dialectics or dualities, but from a range of potentials that include intermediate and hybrid interpretations. The traditional problematics of a knowledge system based on certainty and particular value dissolves into a nodal conception where these values persist, but as dimensions of the system itself.\(^\text{30}\)

If dialectic thinking is essentially alchemical—a collision of opposing forces that creates a new, superior result—the expanded field of nodal interpretation is essentially superposed: the result is held in suspension awaiting a collapse into the specifics of a singular result (that remains fundamentally transient). At the same time, the expanded field of interpretation is one where all interpretations—even those later disproved empirically—have ‘validity’ within the range of potential interpretations as interpretations; this situation describes the state of information clearly: a description of “all possible interpretations.” There is no distinction made between the empirical validity and non-validity of an interpretation because both exist within the range of potentials and their empirical validity is just one of the dimensions that define them as nodes inside the interpretative range generally; this distinction enables the recognition of valid and invalid interpretations (thus avoids falling into a reductive relativism) while at the same time acknowledging the validity of an ‘invalid interpretation’ within the range of potentials. This recognition is epistemological in nature.

\(^{30}\) The implications of such a construction exceed the parameters of this preliminary description of the state itself.