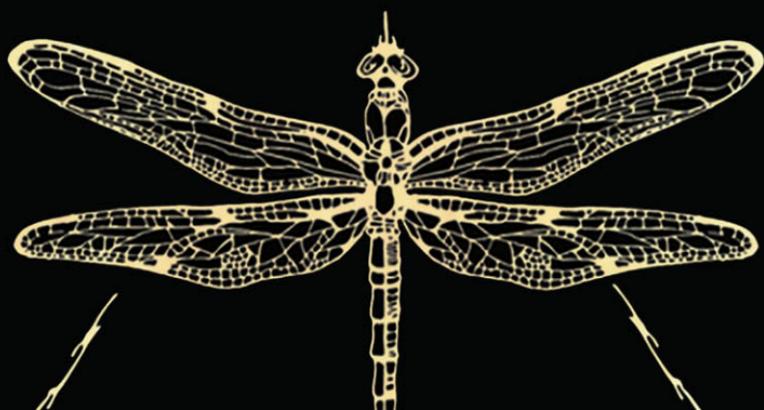


RICHARD GRUSIN, *Editor*

## THE NONHUMAN TURN



# Our Predictive Condition; or, Prediction in the Wild

MARK B. N. HANSEN

## The Politics of Imminent Threat

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In the movie *Minority Report*, law enforcement has an elite squad called “Precrime,” which predicts crimes beforehand and punishes the guilty before the crime has ever been committed. In yet another example of life imitating art, a blockbuster *Wall Street Journal* article describes how the National Counterterrorism Center (NCTC)—an ugly child of the Director of National Intelligence—*can now examine the government files of ordinary, innocent U.S. citizens to look for clues that people might commit future crimes.*<sup>2</sup>

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In the movie *Minority Report*, law enforcement has an elite squad called “Precrime,” which predicts crimes beforehand and punishes the guilty before the crime has ever been committed. In yet another example of life imitating art, a blockbuster *Wall Street Journal* article describes how the National Counterterrorism Center (NCTC)—an ugly child of the Director of National Intelligence—*can now examine the government files of ordinary, innocent U.S. citizens to look for clues that people might commit future crimes.*<sup>2</sup>

In the wake of the Brennan hearings, the talk of precrime was again all over the media, only now with a more precise focus—the administration’s position on drone killings—and a far more astute understanding of the logic informing this position. Particularly incendiary about Brennan’s testimony were his clarification of the underlying logic for preemption and his specification of the concept of “imminent threat.” What Brennan makes clear in his testimony is that, when assessing the danger of terrorist threats and of individuals involved in such threats, the NCTC does not operate like a court of law. Indeed, far from it, for, rather than making decisions about past guilt on the basis of past information, the NCTC must make decisions about *future* guilt, that is, guilt for activities *that have not yet occurred*, and must do so on the basis of a set of factors bearing on the likelihood of such activities indeed occurring—factors that include the seriousness of the threat, the temporal window of opportunity for intervention, and the possibility of reducing collateral damage—which taken together present preponderant or overwhelming evidence of the “imminence” of the threat at issue.

Brennan’s language unequivocally marks the extrajudicial terrain of the question:

JOHN BRENNAN: Senator, I think it’s certainly worthy of discussion. Our tradition—our judicial tradition is that a court of law is used to determine one’s guilt or innocence for past actions, which is very different from the decisions that are made on the battlefield, as well as actions that are taken against terrorists. *Because none of those actions are to determine past guilt for those actions that they took.* The decisions that are made are to take action so that we prevent a future action, so we protect American lives. That is an inherently executive branch function to determine, and the commander in chief and the chief executive has the responsibility to protect the welfare, well-being of American citizens. So the concept I understand and we have wrestled with this in terms of whether there can be a FISA-like court, whatever—a FISA-like court is to determine exactly whether

or not there should be a warrant for, you know, certain types of activities. You know . . .

ANGUS KING: It's analogous to going to a court for a warrant—probable cause. . . .

(CROSSTALK)

BRENNAN: Right, exactly. But the actions that we take on the counterterrorism front, again, are to take actions against individuals where we believe that the intelligence base is so strong and the nature of the threat is so grave and serious, as well as imminent, that we have no recourse except to take this action that may involve a lethal strike.<sup>3</sup>

With its clear distinction between the act of judging past involvement in crimes and the act of warding off the imminent threat of future crimes, Brennan's comments effectively position the NCTC as a latter-day Precrime Division: while courts "get involved when people have already committed crimes," as one astute blogger puts it, the NCTC must reserve for itself, and the government it represents, the right to declare people "imminent threats"—targets for killing—"even before they've committed a crime."<sup>4</sup>

The distinction Brennan draws between judicial process and military force would seem to place his position broadly within the logic of preemptive power that Brian Massumi has developed to characterize post-9/11 American foreign policy. For Massumi, this logic involves a fundamentally altered relationship to an objective cause:

Deterrence revolved around an objective cause. Preemption revolves around a proliferative effect. Both are operative logics. The operative logic of deterrence, however, remained causal even as it displaced its cause's effect. Preemption is an effective operative logic rather than a causal operative logic. Since its ground is potential, there is no actual cause for it to organize itself around. It compensates for the absence of an actual cause by producing an actual effect in its place. This it makes the motor of its movement: it

converts an absent or virtual cause really, directly, into a taking-actual-effect.<sup>5</sup>

Like preemptive power on this account, the right to kill that Brennan claims for the NCTC would appear to exercise its dominion where there are no actual causes yet, where “causal operative logic” has yet to become applicable. Understood on the logic of preemptive power, “imminent threat” would thus play the role of “virtual cause”: “a futurity,” as Massumi puts it, “with a virtual power to affect the present quasicausally.”<sup>6</sup>

What lends the virtual cause its force is the operation of the “unknown unknown,” understood as a kind of ultimate final cause for the threat at issue here. This absolute unknowability renders the threat an ontological problem—the problem of how to construct a relationship to what, from the standpoint of the present, remains “objectively uncertain”:

Like deterrence, it [preemption] operates in the present on a future threat. It also does this in such a way as to make that present futurity the motor of its process. The process, however, is qualitatively different. For one thing, the epistemology is unabashedly one of uncertainty, and not due to a simple lack of knowledge. There is uncertainty because the threat has not only not yet fully formed but, according to Bush’s opening definition of preemption, *it has not yet even emerged*. In other words, the threat is still indeterminately in potential. This is an ontological premise: the nature of threat cannot be specified.<sup>7</sup>

Despite a certain terminological wavering on Massumi’s part, the argument here mobilizes what appears to be a clear, categorical distinction between two models of causality, or perhaps more precisely, between a model of causality and a model of absolute noncausality (absolute refusal of causality).<sup>8</sup> To the extent that it operates in relation to—indeed, in virtue of—an unknowability that can never be overcome, preemptive power exists orthogonally to causality, and operates—or claims to operate—individually of and beyond its scope.<sup>9</sup> The threat that it claims to address is beyond

prediction (it “has become proteiform and it tends to proliferate unpredictably”); and it exists, if indeed it can be said to exist at all, as an empty—and thus infinitely fulfillable—form of the future (it is a “time form: a futurity” and is, as such, “nothing *yet*—just a looming”).<sup>10</sup>

Yet despite its absolutely central role as the kernel of Massumi’s account of preemptive power, the category of the unknown unknown receives little if any direct attention in his meditation. Invoking “the Architect,” Donald Rumsfeld, Massumi does tell us that “we are in a world that has passed from the ‘known unknown’ (uncertainty that can be analyzed and identified) to the ‘unknown unknown’ (objective uncertainty).”<sup>11</sup> But what exactly objective uncertainty is—other than the negation of any figure of knowledge—remains uninterrogated. Indeed, it would appear that Massumi simply ratifies Rumsfeld’s analysis—and the operation of the unknown unknown as an absolute final cause—in order to focus on the intricacies of virtual causality. What enters the scene is fear as the efficiency of a quasi-causal logic that effectively substitutes for the causal efficacy of the real: “Threat is the cause of fear in the sense that it triggers and conditions fear’s occurrence, but without the fear it effects, the threat would have no handle on actual existence, remaining purely virtual.”<sup>12</sup> Preemption mobilizes the affect of fear “to effectively trigger a virtual causality.” Affect, accordingly, emerges as the very medium or materiality of the threat’s exercise of power: “Preemption is when the futurity of unspecified threat is affectively held in the present in a perpetual state of potential emergence(y) so that a movement of actualization may be triggered that is not only self-propelling but also effectively, indefinitely, ontologically productive. . . .”<sup>13</sup> From these descriptions, we can see that fear is the strict correlate of the unknown unknown: it comprises the very mechanism by which objective uncertainty can become a quasi-causally efficacious political force.

The crucial question we must ask Massumi does not concern the coherence of this virtual quasi-causal logic, but rather the effect of positioning it as a *substitute for* the causal efficacy of the real. It is one thing to argue that Rumsfeld’s rhetoric of the unknown unknown made it possible to hijack this causal efficacy and to willfully impose a factually (or causally) “unjustified” imperialistic program.

But it is quite another to claim that this program—which certainly does have real causal consequences—operates at the same level as, and indeed, as an alternate modality of, the causal efficacy of the real. Because it effectively lends credit to the inaugural move of the logic of preemption—the decision to treat absolute uncertainty as source for causal efficacy—this latter position runs the risk of ratifying the Bush doctrine of preemption.

Against such a position, we need to advance two theses:

1. There is no unknown unknown in material reality: the unknown unknown is an ideological mystification of a geopolitical phenomenon, terrorism, that gains whatever traction it has from its capacity to pose extreme difficulties for extant epistemologies.
2. There is a categorical distinction between empirical evidence and affective pseudo-evidence, and we must defend the role and autonomy of the former, and specifically its capacity to debunk any and all invocations of absolute uncertainty, against strategic attempts to subsume it under the umbrella of fear (or any other affectively sustained quasi-causality).

## The Return to Reality

Let us now return to Brennan's testimony, which, I emphasize, breaks with the Bush doctrine of preemptive war over the very point at issue here: the role and existence of the unknown unknown. Although he cannot but operate within a military scenario and world situation that, to be sure, was in some sense created quasi-causally by the Bush administration's false assertion of a link between Iraq and Al-Qaeda, Brennan *does not make any appeal whatsoever to absolute uncertainty* in his claim for the right to kill. Rather, he cites more proximate factors that, even if they do not establish a clear and direct causal lineage from past to future (i.e., evidence of involvement in actual criminal activity), nonetheless furnish such a “strong . . . intelligence base” that, combined with other factors, including the gravity of the threat and its imminence, justify—and indeed, leave “no recourse except”—the use of lethal force.

Among other things, what this break with the Bush-era logic of preemption signals is a certain return to reality: decisions concerning the targeting of individuals for drone killing will be made, not in virtue of an ultimate, and ultimately unknowable, source, but rather on the basis of as thorough an analysis as the given time frame permits of all available data concerning the situation at issue.<sup>14</sup> Such analysis is, to be sure, causal, but with a complexity that eschews all notions of simple linear causality and that embraces indeterminacy-uncertainty-unknowability as the very aspect of reality that makes causal analysis necessary in the first place. Rather than focusing on the identification and isolation of a single cause or causal thread that makes its appearance at the macrolevel of experience, as a clearly delimitable “event,” such analysis seeks to identify propensities of situations on the basis of an attention to the “totality” of a situation. Thus rather than beginning with and orienting itself in relation to the notion of actions that may be committed against citizens of the United States, such analysis operates probabilistically on the matrix of the entirety of the data available at a given moment in time that pertains to a very general situation, say terrorist activity in a given region. And rather than seeking to establish guilt for past actions, such analysis seeks to identify future windows of space-time in which terroristic activity is likely to occur and then to find ways of linking such future propensity to individuals who can be targeted for killing in the present.

When Brennan attributes the distinction between military and judicial judgment to a difference in temporal modality, he doesn’t emphasize strongly enough, or indeed really at all, what I take to be the most fundamental element of the distinction: namely, the fact that predictive analysis of data for assessment of future probabilities *generates information that is not there independently of the analysis*. Such a generative dimension is a generic feature of data mining, as communications scholar Oscar Gandy Jr. observes: “Data mining is said to differ from ordinary information retrieval in that the information which is sought does not exist explicitly within the database, but must be ‘discovered.’ In an important sense, the relationships between measured or ‘observed’ events come to stand as a ‘proxy’ for some unmeasured relationship or influence.”<sup>15</sup>

The generative dimension that Gandy discovers in conventional data mining procedures becomes far more fundamental in the case of military data mining, where what is being mined is information relevant to events that have not yet occurred: whereas conventional, retrospective data mining involves analysis of past behavioral data to determine probabilities of future behavior, military, prospective data mining seeks to generate likely future scenarios based on the analysis of presently identifiable propensities extending into the future.

To the extent that they operate to predict factors of situations that have not yet occurred, such future-oriented, prospective procedures of data mining and predictive analytics might be said to fill in the void of the “unknown unknown.” In contrast to the Bush administration’s logic of preemption, and also to Massumi’s analysis of it, they address the uncertain not as an ultimate final cause, but as a domain open to probabilistic analysis—as a domain that can be *partially* known. Thus, rather than the virtual production of a quasi-cause that, as Massumi puts it, “compensates for the absence of an actual cause by producing an actual effect in its place,” what is at issue in the logic of executive-military judgment sketched out by Brennan is an instrumental decision concerning an imminent threat that is real precisely to the extent that it is known—but that is known, let us be clear, *not* as something that already exists, but *as something predictably likely to come to pass*.

This kind of reality finds its philosophical name in Alfred North Whitehead’s concept of “real potentiality,” which conceptualizes the operation of the future in the present: “The reality of the future,” says Whitehead, “is the reality of what is potential, in its character of a real component of what is actual.”<sup>16</sup> I return to Whitehead’s concept in some detail later, but let me at this point simply underscore the broad scope of real potentiality’s sway: real potentiality does not qualify a given agent, but the diffuse and “total” potentiality of the world at a given moment. In this sense, Whitehead’s concept can help us appreciate something fundamental about the prospective model of data mining and predictive analytics: its predictive power is a direct function of its broad grasp. Not only does prospective data mining always address a “total situation,” but it does so by analyzing data at a myriad of levels (or scales); it is only

subsequently, as the result of an inductive process and as a function of probability, that such broad-ranging, microscalar analysis congeals into an identifiable macroscale phenomenon, an “event.”<sup>17</sup>

That this meditation on broadened imminence remains firmly anchored in real and concretely (if probabilistically) accessible factors marks its resistance to any assimilation into an event logic: today’s imminent threat differs from the quasi-causal absolute threat of preemption *precisely because it can be qualified probabilistically, precisely because one can assess the degree of certainty that it will materialize*. And what is qualified—what actually comprises the threat—is not the likelihood of a particular event, of a single actual cause, coming to pass, but a far more complex and diffuse calculus of propensities concerning a myriad of factora that *can only be known insofar as they can be qualified probabilistically*. It is these micro-propensities, not the events they may go on to inform, that are the objects of probabilistic modeling.

### Rethinking “Precrime”

With this shift in the structure, and indeed, in the ontology of threat comes a displacement of fear in favor of evidence. If that displacement is what Brennan’s testimony expresses, as I am suggesting here, it inaugurates a model of “precrime” that breaks with the legacy of the notion, as it extends from Philip K. Dick’s original 1956 story, through Spielberg’s 2002 film, to contemporary theorizations of post-9/11 political culture. Central to all of these expressions of the preemptive logic of “precrime” is a focus on the macroscale event: in both the story and the film, what the “precogs” see is the actual scene of a murder, perpetrated by an individual in a specific place and at a specific time.

When Richard Grusin invokes *Minority Report*—and the future vision of the precogs—as an allegory for an operation that he calls “premediation,” he takes on board this event-focused legacy:

Steven Spielberg’s *Minority Report* (2002), released less than a year after 9/11, epitomized the logic of premediation that had been intensifying over the past decade and more. . . . In *Minority Report*, rather than capturing past

neural experience for playback in the future [as in Kathryn Bigelow's 1995 film, *Strange Days*], the technology captures "precognitions" of the future for playback in the present—for the purpose of preventing the recorded *events* from becoming actual history, to prevent the future from becoming the past.<sup>18</sup>

Grusin understands the recordings of the precogs' visions as elements within a larger network aimed at mediating—or more precisely, *premediating*—future events prior to their occurrence. What makes these visions appropriate for this task is their status as recordings that are identical technically to other forms of cinematic recording: "Technically the recording device [in *Minority Report*] would seem to work very similarly to the wire in *Strange Days*. Even though the device in *Minority Report* is supposed to be recording murders that will be committed in the future, the sensory experience that it records is recently past experience, that is, the past mental experience of the three precogs."<sup>19</sup> With this astute observation, Grusin helps us to understand that the mechanism for predicting the future within the diegetic world of the film is not the media apparatus itself but some magical, never fully clarified power of the precogs to see into the near future, to experience the near future *as something implicated within the present*.

On this score, the vision of precrime depicted in Spielberg's *Minority Report* stands opposed to the vision laid out by Brennan in his recent testimony: whereas the former indulges a fantasy of cognitive pre-anticipation of the future, the latter is rooted in the power of large-scale data analysis to reveal partial propensities stretching forward from the present world to (differently weighted) possible future worlds. And if the former finds its appropriate aesthetic analogue in the media technology of cinema—which is perfectly equipped to present the precogs' visions as recordings of "future events"—the latter is rooted in the media technics of predictive data analysis that operates at a level of granularity and fragmentation and with an ineliminable degree of uncertainty antithetical to consolidation in the form of the "future event." The discoveries of predictive analytics are discoveries of micrological propensities that are not directly correlated with human understanding and

affectivity and that do not by themselves cohere into clearly identifiable events: such propensities simply have no direct aesthetic analogue within *human* experience.

Given the broader political and (especially) technical context within which it was made, Spielberg's choice to retain the central conceit of Dick's 1956 story—the magic element provided by the precogs—immediately labels the film as an allegory. Far from being a diagnosis of the system of “preventive prosecution” that the Bush administration would soon adopt, the film presents a more open vision of a future in which the political mandate for perfect preemption has simply, if magically, been translated into reality. This openness makes *Minority Report* an ideal exemplification of the logic of premediation. Indeed, the fantasy of precognition is the perfect allegorical expression of the imperative to premediate that, in Grusin's understanding, structures post-9/11 media culture: like the precog visions, the incessant production of mediations of possible futures is designed to ensure that the “future can be remediated before it happens.”<sup>20</sup>

With its basis in data mining and predictive analytics, the recent expansion of the government's right to kill marks a clear departure from the immunologic of premediation. What is at stake in Brennan's claim for executive authority over drone killings—especially when these target individuals who have yet to commit crimes—is the causal efficacy of data and the “right” to base life-or-death decisions on it. Where Grusin's premediation fills in (or covers over) the uncertainty of the future with a torrent of mediation, contemporary precrime mobilizes the weapons of prediction in order to face that uncertainty head-on. Clearly, the two “logics” address our contemporary situation in starkly divergent ways.

This divergence surfaces in Grusin's characterization of premediation as akin to a video game:

More like designing a video game than predicting the future, premediation is *not concerned with getting the future right*, as much as with trying to map out a multiplicity of possible futures. Premediation would in some sense transform the world into a video or computer game, which only permits certain moves. . . . Although within these

premediated moves there are a seemingly infinite number of different possibilities available, only some of those possibilities are encouraged by the protocols and reward systems built into the game. Premediation is in this sense distinct from prediction. Unlike prediction, premeditation is *not about getting the future right*. In fact it is precisely the proliferation of competing and often contradictory future scenarios that enables premeditation to prevent the experience of a traumatic future by generating and maintaining a low level of anxiety as a kind of affective prophylactic.<sup>21</sup>

With its sustained clarification that premeditation is not about “getting the future right,” this passage could not express more clearly and unequivocally *the fact that premeditation operates exclusively at the level of ideology*. Indeed, premeditation marks what we might well consider a new stage in the operation of ideology, one that marks the transformation of affectivity into the very engine of ideology. In this respect, premeditation is remarkably similar to Massumi’s preemption: in both cases, affectivity (whether low-level anxiety or free-floating fear) comprises a resource allowing action to be taken in the present. That is why Grusin and Massumi come to the same conclusion: the messy operation of material reality—an operation that takes place to a large degree *beyond* the grasp of knowledge—is subordinated to the quasi-causality produced through a sanitized, event-focused representation of the future designed to forestall the threat of the unknowable. Whether such forestalling occurs through the incessant proliferation of preemptive measures or the frenzied multiplication of premediated scenarios is ultimately beside the point: the only thing that really matters is the decision to jettison the imperfections of causal prediction in favor of a closed, quasi-causal loop that, ultimately, simply replaces causality with ideology. Once this decision is made, facts about reality become strangely irrelevant, as does the very notion that the future in fact bears differentially on our predictions in the present (or, using Grusin’s terminology: that one can get the future *at least partially right*).

By substituting the *cultural* logic of premeditation for the *material* logic of prediction, Grusin’s analysis does not simply deprive

us of important tools for diagnosing our contemporary situation; more significantly, it tacitly makes common cause with a far broader operation of data gathering and predictive analytics on the part of government, military, and private industry that is predicated on a functional splitting of operationality from representation, and an obfuscation of the former by the latter. As I have argued elsewhere, today's data industries operate on the basis of a system of information gathering and analysis designed to leave citizen-consumers out of the loop.<sup>22</sup> A case in point is contemporary social media, where the affordances of particular platforms are ultimately nothing other than "lures" to generate activity, and hence data, that fuels a predictive engine for the production of surplus value. The key point here is that this "system" combines ideology and operationality in order to secure ever more effective command over the future, or more precisely, over the future's agency in the present.

Viewed against this broad backdrop, premediation can be seen to perform a dual role: on one hand, understood as a desire that stems ultimately from the uncertainty of the future, it operates as stimulus—as lure—for the production of ever more mediation; and on the other, understood as a proliferation of media events that take the place of causal analysis, it functions to obfuscate the underlying reality, namely that policy decisions are being made on the basis of predictive analysis, yielding what must ultimately remain uncertain, probabilistic judgments concerning the future.<sup>23</sup> What this means is that the two logics at issue here—of premediation and of prediction—are not incompatible, or rather only become incompatible when placed on the same level, when offered as alternative causal (or quasi-causal) logics.

By shifting the terrain upon which the notion of precrime gains meaning, Brennan's testimony offers an important opportunity to think beyond the ideological obfuscations perpetrated by the logics of premediation and preemption. Expanding on the November 2011 white paper, Brennan's claim for executive right to kill in cases involving future crimes is rooted not in a closed, circular, self-creating quasi-causal loop but ultimately in an argument about the justification of lethal force on the basis of predictively secured, though intrinsically uncertain, and inherently partial, probabilities. There are certainly serious questions that will need to be asked

about such justification, as well as political resistance that will need to be wielded to prevent potential executive overreach. But the fact remains that the terms of today's discussions of "precrime" mark a wholesale break with the fetishizing of the unknown unknown that occurs, whether for strategic or sincere reasons, when it is made to function as virtual final cause of the politico-cultural logics of preemption and premediation.

### Prediction as Access to Worldly Sensibility

On this score, we might well turn from *Minority Report* to the recent television drama, *Person of Interest*, to find an appropriate allegory for our contemporary predictive condition. Like *Minority Report*, *Person of Interest* centers on the use of data to predict and ultimately shape the happening of the future; yet whereas the film features three human precogs producing dreamlike visions of future crimes, the television series focuses on the output of a mysterious machine that processes all of the data generated by computational sensors, cell phones, and Internet activity in order to predict the involvement of individuals in situations that will somehow involve murder. For my purposes here, two main factors distinguish *Person of Interest* from its precursor. First, the depiction of the "machine" at its core explicitly recognizes the partiality of intelligence generated through predictive analytics and takes this as a key element: it requires the involvement of human protagonists in the ongoing development of events out of diverse data concerning future propensities. Second, the data generated by the machine is portrayed as absolutely inscrutable to human understanding and subject to no protocols of hermeneutic decipherment; this data function simply as a spur to solicit the future-affecting involvement of human actors. What these two differences underscore is *Person of Interest*'s explicit concern with the predictive condition of contemporary life: not only does it allegorize this condition in the form of superhero-like fantasy resolutions of predicaments involving individuals dehumanized by twenty-first-century capitalism, but it does so always in a way that embraces the uncertainty inherent to the predictive logic informing the operations of today's military-entertainment complex.

Reflecting the spillover from military to civilian surveillance documented by the November 2011 white paper, the show's diverse narratives all involve some aspect of the generalization of data mining and predictive analytics at issue in our current cultural moment: although the machine was built to identify potential terrorists, the machine's architect, a character named Finch, built in a "back door" allowing him access to the extraneous data produced by the machine—data that, while irrelevant for the machine's military purpose, predict the occurrence of crimes in the mundane domain of everyday life. In this sense, the show would appear to allegorize not simply the predictive condition of life during wartime, as does a show like *Homeland*, but the more general predictive condition of life lived within the complex networks created by twenty-first-century media.

That is why *Person of Interest*, despite being in development prior to March 2012, could be taken for a direct response to the expansion of the government's right to gather private data. In her December 2012 exposé of the leaked NCTC Guidelines, *Wall Street Journal* reporter Julia Angwin characterizes the policy shift at issue here as a marked "departure from past practice, which barred the [NCTC] from storing information about ordinary Americans unless a person was a terror suspect or related to an investigation." The new rules "now allow the little-known National Counterterrorism Center to examine the government files of US citizens for possible criminal behavior, even if there is no reason to suspect them." Even more shockingly, the rules allow the NCTC to "copy entire government databases—flight records, casino-employee lists, the names of Americans hosting foreign-exchange students and many others. The agency has new authority to keep data about innocent US citizens for up to five years, and to analyze it for suspicious patterns of behavior. Previously, both were prohibited." The new policy, as Angwin clearly discerns, effectively ensures that every American is treated as a potential "imminent threat": not only can information be used in the present "to look for clues that people might commit future crimes," but it is stored expressly as a source of potential, which is to say, with a view to its future relevance. As Angwin astutely notes, this amounts to holding individuals responsible in the present for possible activities—possible

crimes—that do not exist as such in the present, for crimes that, as it were, *have yet to happen*: “A person might seem innocent today, until new details emerge tomorrow.”<sup>24</sup>

Along with the ubiquitous operation of data tracking and gathering that increasingly informs our mundane uses of computational technologies, this expanded scope of governmental data gathering creates the predictive condition allegorized by *Person of Interest*. What is striking about the show, however, and what distinguishes it from *Minority Report* and a long history of dystopian meditations on the erosion of privacy, is the positive spin it puts on our predictive condition: despite its operation beyond the bounds of human understanding, data are figured in the show as the means for justice to be served at the level of everyday life, in relation to ordinary persons. I have elsewhere sought to characterize the use of data gathering and predictive analytics for human enrichment in terms of media pharmacology (*pharmakon*, Greek for “poison” and its “antidote”), and specifically as the pharmacological recompense for the marginalization of human modes of experience (consciousness, sense perception, etc.) that ensues with the advent of our predictive condition.<sup>25</sup> To do so, I correlate this recompense with the expanded domain of sensibility—what I have called “worldly sensibility”—that is made accessible to us by twenty-first-century media. Specifically, technical access to and production of data about levels of experience that remain outside our direct experience, but that nevertheless affect our experience, give us the potential to gain an expanded understanding of our own experience and its implication within larger worldly situations.

At the heart of this argument, as I announced previously, is a critical engagement with the philosophy of Alfred North Whitehead that centers on Whitehead’s environmental approach to process and the fundamental role that data play in his account of the world’s becoming. This engagement aims to radicalize Whitehead’s own radicalization of perception. Accordingly, whereas Whitehead seeks to re-embed sense perception in the broader vectors of “causal efficacy,” and introduces “non-sensuous perception” (perception “in the mode of causal efficacy”) to do so, I suggest that perception in both of its modes arises within and out of a broader environmental surround that remains to a great extent

opaque to its regimes of presentation. Twenty-first-century media, including data gathering and analysis, furnishes a crucial and largely unprecedented means to access this broader environmental surround—the superjectal subjectivity of objectified concrescences of “data”<sup>26</sup>—and to translate its data (what I call “data of sensibility”) into a form that can be presented, or more precisely “fed-forward,” into (future) perceptual consciousness.<sup>27</sup>

This focus on the broad, or as Whitehead conceives it, the “total” environmental situation informing every actual occasion shifts the terrain on which media has long been theorized; specifically, it displaces the prosthetic narrative of media technology—a narrative that stretches from Plato to McLuhan and most recently to Bernard Stiegler—in favor of a model of technical distribution that dislodges perceptual consciousness and embodiment from their privileged position as exclusive synthesizers of media’s experiential impact. French writer Éric Sadin aptly characterizes this displacement as an “anthropological turning point” in our species-constitutive relation with technology:

Historically, the relation to the technical object has been instituted and developed on the inside of a distance that aims to make good—“from the outside”—deficiencies of the body and to amplify its physical capacities; our period marks the end of this distance, to the benefit of an ever more closed-in proximity. A displacement of the conception relative to *techne* is *de facto* called for, the latter no longer being envisaged, following the Western philosophical tradition, as a palliative and “prosthetic” production, or again, in the more informed manner described and analyzed by Leroi-Gourhan, as a relation of dynamic intermixture between *instruments* and *corporeality*. *Techne* must from now on be understood as an *enveloping* of virtualities offered to the body, which constitutes the *fundamental anchor point* for present and future technological evolutions, and which induces an *automatized* and *fluid* relation to the milieu.<sup>28</sup>

Sadin’s claim lends forceful expression to the contemporary shift in our experience of technics: we no longer confront the technical

object as an exterior surrogate for consciousness or some other human faculty, but rather as part of a process in which technics operates directly on the sensibility underlying—and preceding—our corporeal reactivity and, ultimately, our conscious experience. To be even more precise: the “reactive corporeity” that Sadin theorizes engages contemporary technics—data gathering, microcomputational sensing, predictive analytics—as a “radical exteriority” *within* the interiority of experience.

### Propensity, or “Real Probability”

To the extent that this data—“data of sensibility” that are accessible only through technical means—are in fact data about probabilities bearing on future occasions, they call for a fundamental shift in how we approach media: we must cease focusing on acts of discrete agents and seek to understand tendencies for situations to happen, tendencies that are informed by a wide swathe of (mostly) environmental data, all of which is gathered incrementally and molecularly. In his recent account of tracking technologies and urban life, media artist and critic Jordan Crandall perfectly captures this priority of tendency over actuality: not only must discrete actions be redescribed as “performatively constituted action-densities, inferred through calculative, predictive or pro-active operations,” “actuality” itself must be understood to be “conditioned by *tendency*” and agency to be “embroiled in a calculative, mobilizing externality” in which it “pushes and is pulled outward, as if seeking to become the predisposition that it courts.”<sup>29</sup>

This prioritizing of tendencies over actions is precisely what allows predictive analytics to generate meaningful probabilities even when “datasets” cannot be totalized. Scenarios in which the total situation informing an occasion cannot be known yield open-ended probabilities or “probabilities in the wild”—probabilities that differ categorically from the classical a “calculus of probability” with its basis in the equipossibility of outcomes. To grasp this distinction, one need only consider the famous definition offered by Pierre-Simon Laplace: “The probability of an event is the relation of the number of favorable outcomes to the total number of possible outcomes considered to be equiprobable.”<sup>30</sup> As Jean-Rene

Vernes explains, the calculus of probabilities hinges on two essential principles: the possibility of defining equiprobable outcomes and the independence of each move. In his study of “aleatory reason,” the aptly titled *Critique of Aleatory Reason*, Vernes goes on to characterize the knowledge of probability as a form of a priori knowledge—the “*a priori possible*”—that charts a very different course from Humean skepticism than the Kantian legacy we know all too well. Central to the tradition theorized by Vernes is the notion that the calculus of probability correlates with an “object of immediate certainty”: “In the case of a well-made die, the six faces have an identical probability of appearing, *because they appear identical in the representation that we have of them. They are interchangeable.* . . . The link between the structure of the die and the series of results is a logical link, although of a different kind from what is typically understood under the term.”<sup>31</sup> The key point here is that knowledge of probability is a priori: it is rooted in an a priori understanding of the equipossibility of each outcome. To this a priori knowledge of equipossibility corresponds the experiential notion of “frequency”: a frequency results when series of moves tend toward a limit value. Although they are *experiential verifications* of something known a priori, frequencies remain bound to the two essential conditions of the calculus of probabilities: they are a function of equipossibility and independence of outcomes.

It goes without saying that the operation of predictive analytics concern open and incomplete “datasets” that are vastly more complex, and less discretely articulated, than the six possible outcomes of a dice roll. Indeed, the passage from the rarified domain of pure chance (Vernes’s a priori aleatory reason) to the real world would seem to yield an ontological transformation of probability itself: probability ceases to function on the basis of mere possibilities and instead comes to operate as the index of “real propensities.” Such a transformation is precisely what is at stake in Karl Popper’s “propensity interpretation of probability.” As Popper explains in *A World of Propensities*, “There exist weighted possibilities which are *more than mere possibilities*, but tendencies or propensities to become real [or, as I would prefer to say, that are real]: tendencies or propensities to realize themselves which are inherent in all possibilities in various degrees. . . .” Still more emphatically, Popper

claims that propensities “*are not mere possibilities but are physical realities*. They are as real as forces, or fields of forces. And vice versa: forces are propensities.” “We live in a *world of propensities*,” and in real world situations, Popper concludes, there simply are *no equal possibilities*—and indeed, no meaning whatsoever to the notion of equal possibility; hence, “we simply cannot speak here of probabilities in the classical number sense.”<sup>32</sup>

Whatever explanatory and causal value predictive analytics of large datasets have is, I suggest, ultimately rooted in this ontological transformation whereby probabilities are understood to be expressions of the *actual propensity of things*. In this respect, Popper’s conceptualization of probability as propensity provides a bridge to link Whitehead’s account of worldly propensity as causal efficacy, as an expression of the present’s impinging on the future (or the future’s operating in the present), with the predictive condition informing contemporary life. Indeed, Popper’s conceptualization helps us translate Whitehead’s understanding of data as dynamically oriented to the future into the terminology of probability theory so central to contemporary technocultural mediations of worldly process.

More than any other element of Whitehead’s neutral philosophy of experience, it is the probabilistic underpinnings of “real potentiality”—the way that present data already implicate their potential future power in its present operability—that makes him *the preeminent philosopher of twenty-first-century media*. “Real potentiality” designates the potentiality of the settled universe that informs the genesis of every new actuality along with the incessant renewal of the “societies” that make up the world’s materiality (worldly sensibility); as such it instigates a *feeling of the future in the present*: an experience of the future exercising its power in anticipation of its own actuality. Because this power remains that of potentiality—and indeed of an incredibly complex network of potentiality, a network inclusive of the potentiality of *every datum comprising the universe’s current state*—it can only be fixed or arrested probabilistically, though to be sure in a quite singular sense. The force of the future—the future force of every single datum informing the universe at a given moment—is felt in the present in a way that can only be represented probabilistically and where such

representation designates neither a purely abstract likelihood nor a statistical likelihood relative to a provisionally closed dataset, but a properly ontological likelihood: a propensity, which is to say, a likelihood that is, paradoxically, real.

Indeed, Whitehead's striking decision to include the total situation of the universe as determinative of each and every moment of its becoming lends depth to our conceptualization of propensity; specifically, it manages to capture the open-endedness of propensity: propensity names what in the present is always-already on the way toward its own future, but crucially on its way to a future that is itself not yet determined, that remains open to multiple possibilities. In this sense, the probabilistic dimension of Whitehead's concept of "real potentiality" differs starkly not simply from the a priori calculus of probability but from all empirical probabilistic systems: because of its grounding in the total situation of the universe's becoming, it is resolutely speculative in Whitehead's understanding of the term.<sup>33</sup>

It is precisely because of its speculative status that Whitehead's conception of potentiality furnishes the ontological basis of prediction. Insofar as it designates the future propensity of the present, real potentiality grounds the power of probability that informs the operation of today's predictive industries and that lends a certain credibility to cultural fantasies of control over the future. This is because, in Whitehead's understanding, *probabilities are expressions of real forces*, of actual propensities rather than empty statistical likelihoods. Rather than predicting the likelihood of future events on the basis of present and past data that are effectively inert, Whitehead's account foregrounds the emergence of the future—and specifically of novelty in the future—on the basis of the real potentiality of the settled world at each moment of its becoming. If the future is felt in the present, that is precisely because the future literally is (or will be) produced from out of the real potentiality—on the basis of the superjectal intensity—of the present settled world in all of its micrological detail. The key point is that the connection between future and present proceeds by way of efficacy, or better, propensity, and not of prediction. The connection is real and not just statistical, or, in Whitehead's terms, *actual without being actualized*.

That superjective intensity explains the power of the future in the present becomes clear in Whitehead's description of the Eighth Category in *Process and Reality*:

(viii) *The Category of Subjective Intensity.* The subjective aim, whereby there is origination of conceptual feeling, is at intensity of feeling ( $\partial$ ) in the immediate subject, and ( $\beta$ ) in the *relevant* future. This double aim—at the *immediate* present and the *relevant* future—is less divided than appears on the surface. For the determination of the *relevant* future, and the *anticipatory* feeling respecting provision for its grade of intensity, are elements affecting the immediate complex of feeling. The greater part of morality hinges on the determination of relevance in the future. The relevant future consists of those elements in the anticipated future which are felt with effective intensity by the present subject by reason of the real potentiality for them to be derived from itself.<sup>34</sup>

To understand the full force of this claim, and specifically its promise to open a novel perspective concerning prediction, let us introduce philosopher Judith Jones's account of how intensity generated by data in the present is itself the source for superjectal subjectivity.<sup>35</sup> For Jones, the subject referenced in the final line of the previous citation simply *is* the agency of the contrast yielding intensity: "The agency of contrast *is* the subject, the subject *is* the agency of contrast. To be a subject *is* to be a provoked instance of the agency of contrast, and that *is all it is*."<sup>36</sup> This important interpretation underscores how the real potentiality of the future is already felt *as intensity in the present*—is felt, that is, *prior to its actualization and in its full force of potentiality*: this feeling of potentiality *for the future* generates—indeed, simply *is*—the subject.

Jones's point here is crucial: subjectivity, insofar as it *is* the intensity produced by contrasts of settled data, simply *is* a distillation of real potentiality for the future that is felt in the present. As such, subjectivity cannot be restricted to the status of inert force in the present, but literally upsurges *in and as* the transition *from present to future*: by effectively introjecting the future—the force

of historically achieved potentiality—into the present, subjectivity arises in the *in-between-present-and-future*. It is the force that makes the future arise continuously out of the present, as possibility already (partially) contained in real potentiality. This, indeed, is the deep meaning of Whitehead’s assertion that by “subject” he always means “subject-superject”: subjectivity always arises on the basis of the power of the settled world, from “real potentiality”—which is to say, from the superjective forces of present, the constraint the present exercises over the future. For Whitehead then, the future *is already in the present*, not simply as a statistical likelihood, however reliable, but because each new concrescence is catalyzed into becoming by the superjectal intensity or real potentiality—the *future agency*—of the universe itself!

### Recording the Future?

In sketching a broad shift from preemption through fear to pre-emption through prediction, Brennan’s testimony addresses much more than the issue of drone killings. Indeed, as I have sought to suggest, it effectively foregrounds the sweeping intrusion of predictive analytics into the daily life of ordinary citizens that comprises the mandate of the November 2011 Department of Justice white paper. To begin to grapple with this intrusion—and with how Whitehead’s ontology of probability might help us understand it better—let us focus on an example of predictive technics—a “third-generation” search technology that promises, quite literally, to *record the future*. Recorded Future is a small, Swedish intelligence company that sells a data analytics service for predicting future events. Initially financed by small venture capital grants from the CIA and from Google, Recorded Future has developed algorithms that make predictions about future events entirely based on publicly available information, including news articles, financial reports, blogs, RSS feeds, Facebook posts, and tweets. Recorded Future has a client base that includes banks, government agencies, and hedge funds. What it offers is a service designed to monitor the likelihood of future events or, as the company’s press puts it, a “new tool that allows you to visualize the future.”<sup>37</sup>

What most distinguishes Recorded Future is its status as a

“third-generation” search engine. Rather than looking at individual pages in isolation, as did first-generation engines like Lycos and Alta Vista, and rather than analyzing the explicit links between Web pages with the aim of promoting those with the most links, as Google has done since the introduction of its PageRank algorithm in 1998, Recorded Future examines *implicit* links. Implicit links, or what it calls “invisible links” between documents, are links that obtain not because of any direct connection between documents but because they *refer to the same entities or event*. To access the power of *implicit* links between documents, Recorded Future does not simply use metadata embedded into documents, but actually separates the content contained *in* documents from what they are *about*; Recorded Future’s algorithms are able to identify in the documents themselves references to events and entities that exist outside of them, and on the basis of such identification, to create an entirely new network of affiliations that establish relations of meaning and knowledge between documents rather than mere associations.<sup>38</sup>

What is most crucial here is *what* Recorded Future does with the references it identifies, *how* it manages to construct those shadow references into a meaningful knowledge network with predictive power. To do this, Recorded Future *ranks the entities and events* identified by its algorithms based on a myriad of factors, the most important of which include the number of references to them, the credibility of the documents referring to them, and the occurrence of different entities and events within the same document. The result of this analysis is a “momentum score” that, combined with a “sentiment valuation,” indexes the power of the event or entity with respect to its potential future impact. For example, as journalist Tom Cheshire notes, “Searching big pharma in general will tell you that over the next five years, nine of the world’s fifteen best-selling medicines will lose patent protection”; the basis for this knowledge, which of course is only a heavily weighted prediction, is the high momentum score of the event, a score due to its being supported by thirteen news stories from twelve different sources.<sup>39</sup>

We can perhaps best appreciate the substantial predictive power of Recorded Future by focusing on another, equally crucial feature: its temporal dynamics. Recorded Future includes a time and space

dimension of documents in its evaluation, which allows it to score events and entities that are yet to happen *on the basis of present knowledge about them*—what, in Whitehead’s terms, we would call data of the settled universe. “References to when and where an event . . . will take place” are crucial, observes Staffan Truvé, one of Recorded Future’s cofounders, “since many documents actually refer to events expected to take place in the future.”<sup>40</sup> By using RSS feeds, Recorded Future is able to integrate publishing time as an index for this temporal analysis. Such temporal analysis affords Recorded Future the capacity to weight opinions about the likely happening and timing of future events using algorithmically processed crowdsourcing and statistical analysis of historical records of related series of such events. The result: differentially weighted predictions about the future.<sup>41</sup>

### The Power of the Future in the Present

What accounts for Recorded Future’s specificity as a third-generation search engine—its focus on data that implicate the future in the present—is precisely what constitutes the potential pharmacological recompense of today’s predictive technologies: the open-endedness of data’s potentiality. Whatever power it is that allows Recorded Future to make reliable predictions of future developments is a power *that is not specific to it and that is not created by its algorithms*. Rather, it is a general power—the power of the future in the present—that operates at all levels of the universe’s continual becoming. It is, in short, an ontological power—the very ontological power Whitehead seeks to explain—and as such it is rooted in the total situation of causal efficacy that is captured with such precision (though of course, only partially) by today’s technical data gathering and predictive analytical systems. The crucial point here is that this causal efficacy, despite its immense complexity (remember it encompasses the superjectivity of *every* datum of the current world), is both “neutral” regarding its future use and always excessive in relation to any targeted deployment of it.

This means, to put it slightly differently, that surrounding any delimited predictive system is a larger field of data—what I elsewhere call a “surplus of sensibility”—that, viewed speculatively,

indexes the causal efficacy of the total situation within which this delimited system operates.<sup>42</sup> (Effectively, the latter gains its reliability from closing off this larger surplus of sensibility, thereby transforming an always excessive propensity into a [provisionally] closed dataset.) Because it affords data that exceed whatever any given predictive system might include, the data of the world's causal efficacy—the data constituting its real potentiality—always and in principle facilitates knowledge that cannot be restricted to any particular agenda. In this sense, reclaiming the surplus of sensibility from today's data industries—liberating it from capture in concrete networks of predictive power—comprises the first task of a pharmacology of media that would restore data's potential to offer broad insight about future tendencies that implicate humans;<sup>43</sup> to the extent that it potentially counteracts the control instituted through provisionally closed predictive systems, such insight would constitute a recompense that lies at the very heart of our contemporary predictive condition.

This pharmacological recompense, let me emphasize, is an intrinsic, structural element of contemporary technical mediations of the future: any system for data gathering and predictive analytics—because it operates on a “total situation” that it cannot hope to encompass in its entirety and that it can only speculatively intend—only ever actualizes a small part of a potentiality *that continues to remain potential despite this actualization, that continues to exert its ontological power in the “environment” of this system*. Whitehead's ontology of real potentiality forms a kind of check against the imperative to close off this surplus—the very imperative driving our predictive culture—at the same time as it explains the very power that grounds prediction itself. Thus, as we seek to understand and to criticize the forms of predictive power that increasingly enframe—and constrain—our experience, it is imperative that we welcome—on this score, in concert with the very predictive industries that are at issue here—the technical interface to the data of sensibility making up the potential for our future experience. For it is only by recognizing the immense power of the data networks to which contemporary technologies afford access—and also by accepting the accompanying demotion of historically human modes of experience (sense perception, conscious

awareness, etc.)—that we can make good on Whitehead’s fundamental contribution toward theorizing our predictive condition.

In this context, what the example of Recorded Future underscores is the very potential of Whitehead’s ontology of real potentiality: in Recorded Future’s weighting of present predictions concerning the future—but also, and more fundamentally, in the ontological source of these weighted predictions, the future’s status as “real component of what is actual”—we encounter the power of the future to shape the present, and with it, the power of prediction as more than a mere statistical entity.<sup>44</sup> With third-generation search capacities, the mining and analysis of data takes a “Whiteheadian turn” in the sense that it ceases to ground the power of prediction in a recursive analysis of past behavior, and instead—taking full advantage of recently acquired technical capacities for text analysis—channels predictive power through the reference of present data to future entities and events. In this sense, we might say that Recorded Future—and the technical innovation it exploits—concretizes or instantiates Whitehead’s understanding of how the future is felt by the present, that is, by reference. Recorded Future indexes the fundamental insight of Whitehead’s ontology of potentiality: “Actual fact includes in its own constitution real potentiality which is *referent beyond itself*.<sup>45</sup>

A Whiteheadian understanding of Recorded Future reveals a “positive” dimension of prediction: more than a mere extrapolation of the causal force of the present and the past to future possibility, prediction concerns the potentiality *contained in* the transition from present to future. The key point is that this potentiality, despite being imperfectly reliable as a ground for prediction, has ontological power: indeed, it is precisely this power that informs Whitehead’s specification of real potentiality as the mode through which the future is *felt* in the present. Whitehead’s contribution thus encompasses a critical and a constructive element, both of which are crucial to our efforts to understand and to live with our predictive condition.

By furnishing a *speculative* account of the total situation informing the genesis of every new actuality, Whitehead’s account in effect foregrounds the *impossibility* for any empirical analytic system—no matter how computationally sophisticated and how

much data it can process—to grapple with the entirety of real potentiality, or anything close to it. Rather, systems like Recorded Future can—and no doubt will—get more reliable by including more data, but their reliability will always be purchased at the cost of inclusiveness: reliability, in short, is a function of the capacity to close off some data from the larger universe of data surrounding—and complicating—it. Accordingly, there will always be a surplus of data that remain available for the future in the mode of potentiality. In this sense, Whitehead's speculative account serves as a critical check on the totalizing impulses of today's data industries, a guarantee of sorts that the future, insofar as it can be felt in the present, can never be fully known in advance.

By facilitating a model of technical distribution of sensibility rooted in an expansion of perception beyond consciousness and bodily self-perception, Whitehead's philosophy makes room for the technical innovation at the heart of Recorded Future—the capacity to search the present for predictions about the future—to impact human experience in ways that go beyond the narrow and largely instrumental purposes that inform governmental and corporate deployments of it. The capacity to predict future events by way of present reference introduces a means to access more data that is relevant to human behavior—but that remains inaccessible through human modes of perception; as such, it makes more data available for the shaping of human behavior in the future.

Isn't this twofold investment in the power of potentiality precisely the source for the appeal of *Person of Interest*, in the sense that it features superhero-like characters who have imperfect knowledge of the predictions of an all-knowing but fully mysterious “machine” and who must become involved in situations—and must embrace the uncertainties of acting—if they are to prevent predicted future murders? With its obsessive concern for the imperfections of predictive knowledge, *Person of Interest* dramatizes both the negative and the positive elements just described. Its plots develop from the tension between the machine's knowledge and the characters' need to become involved to discover, always through a gradual and circuitous process, how the predictive information (a social security number) relates to events that are in the process of developing. In this sense, the information the machine gives is not

a “premediation” of a future scenario or event, but the final output of a complex and mysterious process of predictive analysis that does not forecast a preordained event with any degree of certainty but that operates incrementally on data relevant to broader situations in which events might come to occur.

The show’s ideological work is focused less on gaining public support for military surveillance than it is on acclimating us to our predictive condition, and it performs this work precisely by insisting on the relevance, indeed on the centrality, of human action and decision making in the midst of situations in which human agents would seem to have no cognitive overview or mastery whatsoever. If the show depicts prediction as intrinsically partial, it does so in relation less to the concrete limitations of any finite predictive system than to pragmatic concerns that explain the poverty of the machine’s output (e.g., the need to keep the “back door” from being discovered) and at the same time serve to guarantee the continued relevance, indeed centrality, of human actors. The show would seem to assure us, at the very moment when a military predictive engine has acquired apparently total knowledge of the present, that real life will continue to require our distinctly human modes of deliberation and agency. With this assurance, we find ourselves more willing than before to allow today’s predictive technologies to operate as agents in an expanded grasp of the world’s sensibility: as long as they don’t threaten our relevance, these technologies can be invested with the power to ameliorate human existence. We can now see why *Person of Interest* provides a counterpoint to *Minority Report*. Whereas the latter focuses on a magical technology for recording the near-future before it happens, the former focuses on the new model of distributed technical agency that, I suggest, has increasingly become the reality of our predictive condition.

### From Premediation to Prediction

To conclude my exploration of the ontology of prediction, let me simply introduce *Person of Interest* into Grusin’s threefold account of temporality in *Minority Report*. Grusin’s characterization of the three regimes of temporality takes shape in relation to his mistaken characterization of prediction as “a future determined by the

sequence of past events.” Grusin deploys the “idea of prediction” to discount two forms of predictive temporality: one in which the future is simply added onto the present and past in accordance with the operation of “rules, laws, and habitual behaviors”; another in which this same schematization of time is undercut by an ineliminable margin of indetermination, the “free choice” available to individuals “at every moment.” In their place, Grusin champions a regime of premediated temporality: aligned with the fictional perspective of Agatha, the precog who provides the minority report, this account invests in the “virtuality of premediation,” “the idea that there are multiple potential futures, and that these future events always and already impinge upon the present.”<sup>46</sup> Grusin telescopes the key distinction between prediction and premediation through the contrast between “majority” and “minority” positions as they are represented in the film: in the precrime version of things, “the future seen by the precogs *determines* the present in the same way that the past would”; in Agatha’s version, on the other hand, “the weight or force of these futures impact the present *but do not determine* it.”<sup>47</sup>

I would concur with Grusin as far as this contrast goes: clearly the film is an allegory of the power of the future to impact the present. But I would strongly resist Grusin’s dismissal of prediction as either incompatible with or irrelevant to this indeterminate mode of impact. Indeed, I suggest that prediction, once liberated from its orientation toward static and inert past data, is in fact *necessary to make the “virtualities” of premediation “real.”*

The passage from which I excerpt these key words makes clear just how much Grusin’s argument depends on his dismissal of prediction:

*Minority Report* exemplifies that to see premediation as the remediation of virtuality or potentiality is to recognize that there are always multiple competing and incomplete reals—multiple actualities which can emerge from any potential present, but which emerge not by negation or addition but by differentiation and divergence from other potential but never realized actualities. What is key here is that these virtualities are real, these premediations as virtualities have a

reality in the present, a force in the present, no matter how the future might turn out. That is, the model of possibility or prediction in scenarios, game-planning, or simulation ultimately involves the creation or determination of distinctions between false or illusory possibilities on the one hand and the real or the actual on the other—only those possible scenarios that come true are real, while the others are proved false or illusory or wrong. To think of premediation as virtual, and therefore as real, is to refuse this metaphysical distinction and to insist instead on the efficacy, or force, of the multiplicity of premediations in and of themselves—no matter how the future might actually turn out.<sup>48</sup>

Where Grusin goes wrong is in his characterization of prediction as bound to a repertoire of predetermined possibilities. However, before we take stock of the significance of this fundamental mischaracterization—and before we foreground the necessity for a different model of prediction here—let us follow out the logic of what Grusin does claim. If, that is, prediction can do no more than present a choice between false and real possibilities, then it is left to premediation itself—premediation as the presentation of a host of virtual futures—to explain how the future arises from the present. This seems to be precisely the position that Grusin adopts—or, as I shall claim, *is compelled to adopt*—at the end of this passage (which concludes his chapter on “Premediation”): in contrast and as an alternative to inert predictions that carve up the future as a repertoire of extensions of the past, premediations engage the future not as a single, predetermined outcome that can be known from the position of the present, but as a virtuality that can encompass different present projections, different premediations, all of which (allegedly) engage the reality of the future in the present. The ultimate culmination of this logic—one which Grusin cannot himself resist—involves the transformation of causality from the real to premediation—the substitution, *for the causal efficacy of the world*, of the “efficacy, or force, of the multiplicity of premediations *in and of themselves—no matter how the future might actually turn out.*”

Against this conclusion and the logic it culminates, let us highlight the error on which it relies: by attributing causal force to the

*premediations themselves*—which are, after all, representations of the future in the form of media events—Grusin mistakes allegory for the real that it allegorizes. Even though he is right to insist on the virtuality—or, as I prefer to call it, the “real potentiality”—of the future, Grusin’s decision to channel its causal force through the form of the premediated event not only imposes a particular, and in this case particularly limiting, unit (the integral event) on the causal force of the real. But it also, as a consequence of this imposition, leads him to overlook the distinction between this causal force and its expression. That is precisely why Grusin finds himself compelled to champion premediation itself *as cause*—or more precisely, to recall Massumi’s argument, as virtual quasi-cause—though as cause *not* of the actual future (since it doesn’t matter how the “future might actually turn out”), but rather of a host of premediations of the future, which is to say, *of nothing other than premediation itself*. With this development, we are, in effect, returned to the solipsism of Baudrillardian simulation: for what are premediations if not the circulation of representations *in the place of* an absent or unknowable real?

If, by contrast, we retain the distinction between the future-implicating causal efficacy of the real *and* the premediation of how that efficacy might produce the future, we will be able to see premediation for what it is—a representation or allegory of the future that abstracts from the actual causal efficacy Whitehead locates in the world in order to produce an immunologic designed to ward off the possibility of the unexpected. Once restored to its representational status, premediation—far from providing a causal explanation of the future—cannot help but beg the question of what grants it causal force. And the answer, as I hope my discussion here has made clear, can only be the causal efficacy (or real potentiality) of the world itself that can never be known in its entirety, but that can be partially, if imperfectly, predicted and represented as discrete probabilities in the wild.

To the extent that it allegorizes prediction *as the future’s inherence in the present*, *Person of Interest* introduces what we can only consider to be a fourth regime of temporality that extends or supplements Grusin’s threefold account. As the force at the basis of this allegory, prediction on the basis of real potentiality or

“prediction in the wild” seeks to grasp the propensity that carries the present world into the future. The access that large-scale data mining and predictive analytics gives to this propensity is precisely what allows prediction in the wild to “premediate” the future, not as a set of represented media events, but as a partial glimpse into the present operation of real forces that will produce—that are already producing—the future to come.

## Notes

1. Julia Angwin, “U.S. Terrorism Agency to Tap a Vast Database of Citizens,” *Wall Street Journal*, December 13, 2012, <http://online.wsj.com/>. Holder’s decision appears in the unclassified document, “Guidelines for Retention, Use, and Dissemination by the National Counterterrorism Center and Other Agencies of Information in Datasets Containing Non-Terrorism Information” (hereafter NCTC Guidelines 2012), which is available as a sidebar in Angwin’s article.
2. Jesselyn Raddack, “Minority Report: Govt Can Now Spy on Innocent Americans for Future Criminal Behavior,” *Daily Kos* blog, December 13, 2012, [www.dailykos.com/](http://www.dailykos.com/).
3. John Brennan, cited in “Innocent Until Proven Guilty; Imminent Until Proven—Too Late,” *Empty Wheel* blog, February 11, 2013, [www.emptywheel.net/](http://www.emptywheel.net/). The position outlined here marks a distinct radicalization of the policy set forth in the November 2011 Department of Justice white paper. (The white paper is available at [www.documentcloud.org/documents/602342-draft-white-paper.html](http://www.documentcloud.org/documents/602342-draft-white-paper.html).) Whereas the white paper implies (although without actually requiring) that, in the case of American citizens, involvement in past crimes is important for assessing the imminence of a threat, Brennan’s rationale preserves no such implication, and indeed presents the latter not simply as a key point of difference between the courts and the military, but as a part of the threat itself! The rationale here is quite simple: if the military were constrained to exercise its force, its right to kill, only in cases where evidence of involvement in past crimes existed, it would very possibly, indeed almost certainly, miss crucial opportunities to save American lives.
4. *Empty Wheel* blog, “Innocent until Proven Guilty.”
5. Brian Massumi, “Potential Politics and the Primacy of Preemption,” *Theory & Event* 10, no. 2 (2007): para. 23, [http://muse.jhu.edu/journals/theory\\_and\\_event/](http://muse.jhu.edu/journals/theory_and_event/).
6. Brian Massumi, “Fear (*The Spectrum Said*),” *Positions* 13, no. 1 (2005): 35.

7. Massumi, "Potential Politics," para. 13, emphasis added.
8. Massumi speaks, in addition to the "unknowable," of "indeterminacy," "indeterminate potentiality," and "objective uncertainty," "Potential Politics," paras. 20, 13, 24.
9. And Massumi is unequivocal on this point: "The lack of knowledge about the nature of the threat can never be overcome," "Potential Politics," para. 13.
10. Massumi, "Potential Politics," para. 13; and Massumi, "Fear," 35.
11. Massumi, "Potential Politics," para. 13.
12. Massumi, "Fear," 36.
13. Massumi, "Potential Politics," para. 23.
14. Massumi notes the Bush administration's disdain for "reality": "Truth, in this new world order, is by nature retroactive. . . . The reality-based community wastes time studying empirical reality, the Bushites said: 'we create it.' And because of that, 'we' the preemptors will always be right. We always will have been right to preempt, because we have objectively produced a recursive truth-effect for your judicious study. And while you are looking back studying the truth of it, we will have acted with reflex speed again, effecting a new reality" ("Potential Politics," para. 20).
15. Oscar Gandy Jr., "Data Mining, Surveillance, and Discrimination in the Post-9/11 Environment," in *The New Politics of Surveillance and Visibility*, eds. K. Haggerty and R. Ericson (Toronto: University of Toronto Press, 2007), 369–70.
16. Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, corrected ed. (New York: Free Press, 1979), 66.
17. One key element that the executive-military context adds to this general pattern of prospective data mining is a temporal instrumentality: it renders probability a function of time. Rather than existing in relation to a fantasized total knowability, and conversely, an equally fantasized total unknowability, information is always a compromise, an arrest of an ongoing world (the process of what I've called "worldly sensibility"), that reflects the confluence of multiple, and, to some degree or other, incongruous factors. That such a pragmatic approach becomes all the more significant in the context of today's terrorist threat is a point not lost on the Justice Department. Consider the following passage from its November 2011 white paper, which meditates on the key concept of "imminent threat": "By its nature . . . the threat posed by al-Qa'ida and its associated forces demands a broader concept of imminence in judging when a person continually planning terror attacks presents an imminent threat, making the use of force appropriate. In this context, imminence must incorporate considerations of the relevant window of opportunity, the possibility of reducing collateral damage to civilians, and the likelihood of heading

off future disastrous attacks on Americans" ([www.documentcloud.org/documents/602342-draft-white-paper.html](http://www.documentcloud.org/documents/602342-draft-white-paper.html)).

Interestingly enough in the present context, the white paper goes on to correlate this broadened concept of imminence to the widespread use of technology, as if to position data-gathering and predictive analytics as a new theater, or rather a new "behind-the-scenes," of war itself: "We are finding increasing recognition in the international community that a more flexible understanding of 'imminence' may be appropriate when dealing with terrorist groups, in part because threats posed by non-state actors do not present themselves in the ways that evidenced imminence in more traditional conflicts. After all, al-Qa'ida does not follow a traditional command structure, wear uniforms, carry its arms openly, or mass its troops at the borders of the nations it attacks. Nonetheless, it possesses the demonstrated capability to strike with little notice and cause significant civilian or military casualties. Over time, an increasing number of our international counterterrorism partners have begun to recognize that the traditional conception of what constitutes an 'imminent' attack should be broadened in light of the modern-day capabilities, techniques, and technological innovations of terrorist organizations." John Brennan, "Remarks of John O. Brennan, 'Strengthening Our Security by Adhering to Our Values and Laws,'" address to Harvard Law School, September 16, 2011, [www.whitehouse.gov/the-press-office/](http://www.whitehouse.gov/the-press-office/).

18. Richard Grusin, *Premediation: Affect and Mediality after 9/11* (Basingstoke, U.K.: Palgrave Macmillan, 2010), 39.

19. Ibid.

20. To underscore this connection, let me cite the entire passage from which I excerpt this phrase: "Premediation insists that the future itself is also already remediated. With the right technologies—in this case the distributed cognition made possible by the hybridized institution of Pre-Crime, with its three precogs, nurtured in the appropriate physical environment and attached to the correct hardware and software—the future can be remediated before it happens. This remediation of the future is not only formal but also reformative. Insofar as capital crime can be prevented, precognition allows for the remedying of the future, the prevention of the crime of murder through premediation" (Grusin, *Premediation*, 39).

21. Ibid., 46, emphasis added.

22. In my book, *Feed-Forward: On the "Future" of Twenty-First-Century Media* (Chicago: University of Chicago Press, 2014).

23. To his credit, Grusin appears to grasp how the operation of premediation he describes ultimately forms nothing more nor less than a component in a larger system whose aim is to stimulate the production

of ever more data in the service of ever more effective prediction: "The affective life of media and the anticipatory gestures of mediaphilia operate to encourage, make possible, and proliferate an ongoing flow of everyday media transactions, which provide the raw material to be mined so that future, potentially disruptive events of terrorism or other violent attacks can be pre-empted before they ever happen" (Grusin, *Premediation*, 134).

24. Angwin, "U.S. Terrorism Agency."

25. Hansen, *Feed-Forward*. My understanding of the *pharmakon* derives from Jacques Derrida's reading in "Plato's Pharmacy," as well as Bernard Stiegler's more recent developments of the concept.

26. A much misunderstood notion, in large part due to Whitehead's own descriptions, the superject designates the mode of subjectivity that an actuality takes on when it is added to, that is, becomes part of, the objective, settled world. As such, it is as superject that a completed actuality is able to act, not on its own genesis or becoming, but on the becoming of other new actualities and societies of actualities. On this understanding, which incidentally owes much to the work of philosopher Judith Jones, the superject is the mode of subjectivity and the source of power of the "real potentiality" of the settled world, which is to say, of its power to impact the future. The crucial point here, following Jones's identification of subjectivity with intensity, is how the real potentiality of the future is felt as intensity in the present, *prior to its actualization and in its full force of superjective potentiality*.

27. This is the central argument of *Feed-Forward*.

28. Éric Sadin, *La Société de l'Anticipation* (Paris: Éditions inculte, 2011), 13. Translations mine.

29. Jordan Crandall, "The Geospatialization of Calculative Operations: Tracking, Sensing and Megacities," *Theory, Culture & Society* 27, no. 6 (November 2010): 75.

30. Laplace, cited in Jean-Rene Vernes, *Critique de la raison aleatoire, ou, Descartes contre Kant* (Paris: Aubier-Montaigne, 1982), 87. Translations mine.

31. Vernes, *Critique*, 88.

32. Karl Popper, "'Two New Views of Causality," in *A World of Propensities* (Bristol, U.K.: Thoemmes Antiquarian Books, 1990), 9, last two emphases added.

33. Whitehead's project in *Process and Reality* (and related texts) is to provide a speculative account of the universe that explains how it must be structured in order for experience to be what it is. One key point that often gets forgotten by Whitehead's commentators is that the speculative is not accessible from the perspective of experience.

34. Whitehead, *Process and Reality*, 27, last emphasis added.

35. Jones's important book, *Intensity*, is effectively a reading of Whitehead's speculative empiricism from the perspective of the Eighth Category. Judith A. Jones, *Intensity: An Essay on Whiteheadian Ontology* (Nashville, Tenn.: Vanderbilt University Press, 1998), especially chs. 1 and 3.

36. Jones, *Intensity*, 130.

37. Home page, *Recorded Future*, /www.recordedfuture.com/.

38. Journalist Tom Cheshire pinpoints the significance of this capacity for reference when he compares Recorded Future with Google: "Recorded Future *knows* who Nicolas Sarkozy is, say: that he's the president of France, he's the husband of Carla Bruni, he's 1.65m tall in his socks, he travelled to Deauville for the G8 summit in May. If you Google 'president of France,' you'll get two Wikipedia pages on 'president of France' then 'Nicolas Sarkozy.' Useful, but Google *doesn't know how the two*, Sarkozy and the presidency, *are actually related*; it's just searching for pages linking the terms." Tom Cheshire, "The News Forecast: Can You Predict the Future by Mining Millions of Web Pages for Data?," *Wired UK*, November 10, 2011, www.wired.co.uk/, emphases added.

39. Ibid.

40. Ibid.

41. Despite its superficial similarity to Bernard Stiegler's account of how today's media industries support empty pretensions, the predictive mechanism at issue in Recorded Future opens to a future that is not simply a function of expectations rooted in past experiences. For Stiegler, there can be no viable future because industrially manufactured memories have taken the place of "lived" secondary memories, and thus provide a false or empty source for projections of future possibility. Whereas Stiegler's model operates in relation to a static source of fixed possibilities, a situation reinforced by his discretization of memory and the past as tertiary—that is, recorded and inert—*contents* of experience, Recorded Future operates in terms of probabilities that are generated not simply through a processing of the repository of past, inert data of experience, but—crucially—through the *power of present data* to lay claim on the future. In this sense, it invests in the future as open to possibility, even if it seeks to control how the future will be produced.

42. Hansen, *Feed-Forward*.

43. I develop such a pharmacological account of the "surplus of sensibility" in *Feed-Forward*.

44. What ensures that potentiality implicates the future in the present is the *solidarity* that Whitehead attributes to the extensive continuum: "The extensive continuum is 'real,'" he writes, "because it expresses a fact derived from the actual world and concerning the contemporary actual

world. All actual entities are related according to the determinations of this continuum; and all possible actual entities in the future must exemplify these determinations in their relations with the already actual world. The reality of the future is bound up with the reality of this continuum. It is the reality of what is potential, in its character of a real component of what is actual" (Whitehead, *Process and Reality*, 66). On this account, what implicates the future in the present is nothing less than the entirety of causal nexuses operative at any moment in the ongoing process of the universe, or more concretely, in any given settled state of the superjectal world: this is the wellspring of "real potentiality."

45. Whitehead, *Process and Reality*, 72, emphasis added.

46. Grusin, *Premediation*, 59, 60.

47. Ibid., 60, emphasis added.

48. Ibid., 60–61.

# Crisis, Crisis, Crisis; or, The Temporality of Networks

WENDY HUI KYONG CHUN

HOW ARE CODES AND SAFETY RELATED? How can we understand the current proliferation of codes designed to guarantee our safety and of crises that endanger it?

Codes, historically linked to rules and laws, seek to exempt us from hurt or injury by establishing norms, which order the present and render calculable the future. As Adrian Mackenzie and Theo Vurdubakis note, “Code systems and codes of conduct pervade many registers of ‘safe living.’ . . . Many situations today become manageable or tractable by virtue of their codeability.”<sup>1</sup> Although codes encompass more than software—they are also “cultural, moral, ethical”—computational codes are increasingly privileged as *the* means to guarantee “safe living” because they seem to enforce automatically what they prescribe. If “voluntary” actions once grounded certain norms, technically enforced settings and algorithms now do so, from software keys designed to prevent unauthorized copying to iPhone updates that disable unlocked phones, from GPS tracking devices for children to proxies used in China to restrict search engine results. Tellingly, trusted computer systems are systems secure from user interventions and understanding. Moreover, software codes not only save the future by restricting user action, they also do so by drawing on saved data and analysis. They are, after all, programmed. They thus seek to free us from danger by reducing the future to the past, or, more precisely, to a past anticipation of the future. Remarkably, though, computer systems have been linked to user empowerment and agency, as much as they have been condemned as new forms of control. Still more