



Notes Towards a Theory of Affect-Itself

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abstract

In this paper, we offer a series of notes toward a rethinking of affect in response to recent debates about the (im)measurability of value of affective labor. We propose shifting from a perspective that views affect as a property of the laborer to a conceptualization of what we call ‘affect-itself.’ We make this move by following recent rearticulations of matter, energy and information in the life sciences and quantum physics. Recent thinking in science points us to ways in which the value and measure of affect depend upon investments by both science and capital in dynamic matter’s capacities for self-forming. Far from rendering the measure of value irrelevant, an economy of affect-itself suggests that while measures had previously provided representations of value, affectivity itself has now become a means of measuring value that is itself productive of value. Finally, looking toward theorizations of neoliberal governmentality and politics of ‘pre-emption’ in relation to an economy of affect-itself, we offer a consideration of what politics might be, and could be, in such a context.

Introduction

Theorists have recently debated the ability of the labor theory of value to explain forms of ‘affective’ labor. Considered to be ‘immaterial labor’ or labor of ‘the general intellect’, affective labor has raised questions for theorists about the very possibility of measuring value (Negri, 1999; Hardt and Negri, 2000). In his critique of Michael Hardt and Antonio Negri’s treatment of the immeasurability of the value of immaterial or affective labor, George Caffentzis has taken the position that value is still measurable, and that its measurability is central to anti-capitalist projects. Caffentzis not only proposes that measuring exploitation depends on being able to measure the value of labor. He also argues that capitalism “imposes an extremely quantified form of life on its constituents, so that those who would resist capitalism must have quantitative capacity to deal with such an obvious feature of its antagonist” (2005:10). Caffentzis goes further and underscores the precariousness of claims of immeasurability, pointing to the ways in which mathematics has again and again met the challenge of developing measures for what is at first thought immeasurable.

Exploring the mathematics and sciences of measure has been important to Caffentzis’s analysis of labor, energy and value; noteworthy is his treatment of the oil crisis of the

early 1970s as a work-energy crisis, in which he returns to late 19th century thermodynamics. Caffentzis argues that thermodynamics was *the* science informing Marx's theorization of abstract labor power as the potential energies of workers abstracted to hours of expended energy in the production of surplus value.¹ About thermodynamics Caffentzis concludes: "physics... provides definite analyses of work and new plans for its organization. Its models may appear abstract, but they are directly related to the labor process" (Caffentzis, 1992: 220).² In underscoring the relationship of measure, value and science, Caffentzis inspires us to rethink affective labor in terms of the sciences that have informed contemporary understandings of affect.

Following Caffentzis's turn to the science of thermodynamics for an understanding of the processes of generating and measuring value, we offer a set of notes about value, labor, measurement and affect in relationship to information theory being developed in physics and the life sciences (especially biology). In these sciences, information is understood as a capacity of matter to self-form and to engage in self-measurement; information is itself, along with matter and energy, presumed to be physical. As such, thermodynamics is now proposed to be a special case of information theory (Peat, ND; Seife, 2006). In addressing value, labor, measurement and affect in terms of the subsumption of thermodynamics into information, we aim to rethink the assumptions of the labor theory of value inherited from Marx.³

We are proposing that the assumptions of the labor theory of value must be problematized even more than they have been in discussions of affective labor, which move beyond the individual laborer in favor of a 'general potentiality' of humanness,

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- 1 Cf. Caffentzis, this issue. The laws of thermodynamics generalize energy (as being neither created nor destroyed, that is, conserved in every transfer) to such a high level of abstraction that capitalists could begin to imagine all sorts of not-yet-imagined sources of energy, allowing them even to dream of ways to transmit energy from one form to another without expenditure or cost. The second law of thermodynamics, however, deflates this dream with the concept of entropy, the heat death of a steam engine that points to the impossibility of using energy without cost. Energy dissipates or becomes unavailable for work in a closed mechanical system. Additional work is needed to reenergize the machine, which, however, further increases entropy. Thus, a response to entropic heat death is called forth in the ongoing development of technology to make production or the use of energy as efficient as possible while allowing capital to become more impervious to workers' refusal to work. Today, information is thought in terms of a new law that is: 'information can neither be created nor destroyed', which speaks to the physicality of information and to what below we will take up as the informational measuring of matter. See Seife (2006).
 - 2 Caffentzis also has argued that just as thermodynamics provided a uniform approach to energy in industrial labor, with the invention of the Turing machine, computers provide a uniform approach to the computational procedures of all labor usually identified as skilled labor, but which are "implicit in all parts of the division of social labor" (Caffentzis, 1997: 52). However, Caffentzis does not imagine how digital technologies would permit us to 'see' information at all levels of matter, that is, realize the computational skills immanent to organic and non-organic matter alike, that is, matter as self-measuring.
 - 3 Karl Marx introduces the labor theory of value in Chapter One of *Capital* Vol. 1. He explains that "what exclusively determines the magnitude of the value of any article is therefore the amount of labor socially necessary, or the labor-time socially necessary for its production" including the qualification that "the labor that forms the substance of value is equal human labor, the expenditure of identical human labor" (Marx, 1990: 129).

but do not question the embodiment of this potentiality, its form of mattering.⁴ We attempt to do so in order to reconceptualize labor power in relation to affectivity, or pre-individual capacities to affect and to be affected. In contrast to discussions of affective labor, our discussion situates affect at all levels of matter, such that the distinction between organic and non-organic matter is dissolved.

We are moving beyond the laborer's body assumed in the labor theory of value – what we will refer to as the body-as-organism – in order to speculate about the ways in which capital is setting out a domain of investment and accumulation by generalizing or abstracting affect to affect-itself. We are questioning the assumption of the body-as-organism neither to dismiss human labor nor to propose alternatively that machines, let us say, produce surplus value, but rather to suggest that if the distinction between organic and non-organic matter is dissolving in relationship to information, as we are suggesting it is, then labor power must be treated in terms of an abstraction that would be befitting not only organic and non-organic bodies but bodies that are beyond the distinction altogether, that is, bodies that are conceived as arising out of dynamic matter or matter as informational. Affect-itself is admittedly an underspecified concept because it is meant to address the becoming abstract, and therefore becoming subject to measure that which is seemingly disparate – that is, pre-individual capacities ranging from pre-conscious human bodily capacities, to human genetic materials functioning outside the human body, to the capacities of computer programs to elaborate levels of complexity beyond the specifications of the program, to the capacities of bacteria to cross species now leading to a reconceptualization of evolution as well as becoming a model of bioterrorism.

As we shift focus from affective labor to affect-itself, then, we follow theorists whose conceptualizations of affect draw on the life sciences and physics. These theorists, who we take up below, have opened the human body to matter's informational substrate, drawing on the bioinformatics of DNA in biology, or quantum theory's positing of information as a form of measure. We explore the ways in which these sciences have enabled theorists of affect to conceptualize it as a matter of virtuality, indeterminacy, potentiality, emergence and mutation. Like these theorists of affect upon whom we draw, our engagement with the sciences is not meant to be a full explication of particular scientific fields, theories or propositions. Not only are the scientific theories to which we turn themselves debated in their respective fields, but our purpose is not an application of scientific theories to social criticism. It is rather to recognize that these

4 Because the labor theory of value also speaks to the production of surplus value extracted from the human laborer's waged work, theorists who have taken up Marx's labor theory of value have emphasized the importance of the human laborer. There is a resonance of this in those theorists of affective labor who often point to a general potentiality but only in relationship to humanness. For example, Akseli Virtanen argues that the potential of labor power has always implied that there is something which remains potential. Affective labor only makes this potentiality more visible as the "general potentiality and linguistic-relational abilities which *distinguish* human-beings". As Virtanen puts it: "For the first time the common mode of existence of human beings, the potential dimension of human existence as the power to do anything appears to us without the mediation of a meaning, product or common cause" Virtanen (2004). This "without the mediation of meaning" suggests to us that there needs be a rethinking of the mattering of potentiality, the potentiality of matter in terms of information, given that information, as we will discuss below, is a matter of form, not meaning.

scientific theories have contributed ideas about affect which have made it a nodal point for the shifting direction of social criticism. There are philosophical resonances between the ongoing elaboration of information theory in developments of the life sciences and physics, and recent social, political and economic transformations; the scientific conceptualization of affect has led social criticism to rethink matter, energy, measurability, value and information on one hand, and on the other, labor power, capitalist productivity and governance.

We are not however merely making metaphorical use of certain scientific borrowings. For one, we assume that the sciences employed by theorists of affect are sciences with which capital is also entangled. That is to say, scientific discourse and capital participate together in setting a field of investment by abstracting affect to affect-itself and engaging information as measure. Caffentzis (1992) reminds us that from the beginning, capital has been implicated in the sciences because of its engagement with the abstract potential of labor power. If in the nineteenth century science and capital were engaged in efforts to manage workers' bodies as a thermodynamic control of entropic energy, we propose that now science and capital are engaged in efforts to directly modulate the pre-individual or the potentiality of the indeterminate, emergent creativity of affect-itself. This means that we are rethinking the relationship of science, governance and productivity, speculating that a tension between control on one hand and indeterminate emergence on the other constitutes the problematic at the heart of a radical neoliberal governance of productivity. We will propose that governance is now a matter of pre-emption, but not only to anticipate and control the emergent but rather to precipitate emergence and thereby act on a future that has not yet and may not ever arrive. As our notes conclude with the discussion of affectivity and radical neoliberal governance, we want to recognize the ambivalence embedded in our conceptualization of affect-itself, as our treatment of it moves back and forth between preconscious human bodily capacities and affective capacities at all levels of matter. This ambivalence is part of the ongoing process of the abstraction of affect to affect-itself; it also is part of the effort of a radical neoliberal governance to modulate potential and emergence.

Note 1: We conceptualize affect somewhat differently than a number of theorists of affective labor do, leading us to speculate about affect-itself.

By the 1990s, theorists used the concept of affective labor as part of an effort to account for what they saw as important shifts taking place in capitalism and its organization of labor. Building on debates which had primarily been taking place within the Italian Marxist tradition of *Operaiismo* (Hardt and Negri, 2002), some theorists went on to examine kinds of labor which have not typically been thought of as work, and which involve the production of activities rather than consumable commodities, for example, "defining and fixing cultural and artistic standards, fashions, tastes, consumer norms and, more strategically, public opinion": in short, the labor of communication and cooperation (Lanzarato, ND). Some theorists have treated the work of communication and cooperation more broadly, defining affective labor in a way that highlights certain

capacities of laborers, those linked to ‘thinking and abstract knowledge’, or ‘the general intellect’, to use Marx’s (1973: 706) terms.

Akseli Virtanen for one argues that affective labor “is neither direct human labour the worker performs (shaping materials of nature, producing new objects, etc.) nor the time he or she expends, but rather ‘the appropriation of his [sic.] own general productive power, his [sic.] understanding of nature and his [sic.] mastery over it by virtue of his [sic.] presence as a social body... – it is, in a word, the development of the social individual which appears as the great foundation-stone of production and of wealth” (Virtanen, 2004: 223). Similarly, Paolo Virno argues that the “primary productive resources of contemporary capitalism” lie in the “linguistic-relationship abilities of humankind...,” that is, “the complex of communicative and cognitive faculties (*dynameis*, powers) which distinguish humans” (2004: 98). For Virno, the general intellect is the foundation of a social cooperation that exceeds the cooperation of laboring. This cooperation moves from a “preliminary sharing of communicative and cognitive abilities” to “the life of the mind,” which is in excess of the individual in that these capacities are heterogeneous (2004: 67).

These heterogeneous capacities, Virno argues, are an ‘interweaving’ of pre-individual elements and individuated characteristics. Drawing here on Gilbert Simondon to elaborate what Marx referred to as ‘the social individual’, Virno goes on to propose that the labor power of the social individual is pure potential, something ‘non-present’, ‘non-real’ (2004: 82). Yet this potential is bought by capitalists, under the law of supply and demand; it is here that Virno locates “the genesis of surplus value...the mystery of capitalistic accumulation” (*ibid.*). For Virno then, labor power is productive because it “incarnates potential; it actualizes it” (*ibid.*).

But how is this incarnation conceived? Is potential actualized only through the work of human laborers? While Virno’s and Virtanen’s analyses of affective labor imply that abstract labor-power is in excess of any one laborer’s body, our question is, is it in excess of the body conceived as human organism? As Virno and Virtanen move us into a realm of affect that supercedes the individual, they begin to problematize the dominant conception of the laboring body as a self-enclosed, bodily totality possessed by a human subject to whom affect belongs, what we are calling the body-as-organism. The point we want to make is that the objective existence of bodies whose energies can be measured and administered under capitalism should be understood in the context of the effects of historically specific modes of administration and measurement. This is not to say that the body is simply a construction, but rather that bodies and techniques of administration and measure all arise out of dynamic matter as part of a network of capital and scientific discourse. Given this, we are proposing that the body-as-organism is generated by a system of measurement and administration which does not adequately characterize the workings of capitalist economy and governance at this time.

Instead of looking to the body-as-organism to actualize labor-power, we are proposing that a dynamic, indeterminate matter is presently being configured in capitalism with corresponding techniques of administration and measurement aimed at a level below, above, or perhaps beyond that of the bounded body-as-organism. Therefore, while we are also concerned with the ‘dynamic powers’ to which Virno refers (2004: 98), we

conceive them not as a matter of general intellect, a disembodied matter, but as a generalized matter beyond the laborer's body, a matter of affect- itself. We are proposing that there is an abstracting of affect to affect-itself, which disregards the bounded-ness of the human body, thus troubling the conceptualization of the body as the body-as-organism.

Note 2: We are proposing that the conceptualization of affect-itself troubles the conceptualization of the body assumed in the labor theory of value, the body-as-organism, defined as autopoietic. We are thus led to speculate about the connections between different levels of matter.

What is the bounded human body which affect-itself bypasses or disregards? Recalling Umberto Maturana and Francisco Varela's (1980) notion of autopoiesis, we can describe the bounded human body as a closed system; it is closed to information that would compromise the body's organizational integrity while remaining open to energy needed to maintain the body's drive to homeostasis and equilibrium. As Maturana and Varela describe it, the autopoietic organism is a complex relation of parts, structures, and functions – genes, organelles, cells, tissue, bodily fluids, organs, and organ systems – all working together to reproduce the life of the body by preserving the functional relationship of the organism's parts to its environment. The organism selects its environment with the aim of maintaining its internal equilibrium, such that chance occurrence, mutation or the creative transmission of information across species boundaries can only be destructive or threatening to life.

The autopoietic body is strictly confined to the laws of classical thermodynamics, which connect human finitude to a conception of the human body as driven by equilibrium and homeostasis. It is a body organized for production and reproduction within a thermodynamic cycle of energy accumulation and expenditure. However, moving beyond the closure of the body-as-organism and its drive to maintain equilibrium and homeostasis, our conception of affect-itself points to a mode of production and reproduction for which affect need not be confined to the body-as-organism, but rather may be described as a property of matter generally, disregarding distinctions between the organic and the non-organic, the open and the closed, the biological and the physical, even the simple and the complex.⁵ In conceptualizing affect-itself, we situate a body “within a wider field of forces, intensities and duration that give rise to it and which do not cease to involve a play between non-organic and organic life,” as Keith Ansell Pearson (1999: 154) argues. Our conceptualizing of affect-itself follows theorists of affect who in defining it as the pre-individual capacity to affect and to be affected attribute to affect the ontological dynamism of matter generally.

Theorizing affect as the pre-individual capacity to affect and to be affected, Brian Massumi for one takes as an example of affect those bodily responses, autonomic

5 For further critique of the body-as-organism, see Clough (2007).

responses, which have been defined as in-excess of conscious states of perception and therefore point to a ‘visceral perception’ preceding perception (Massumi, 2002: 25) If this reference to autonomic responses seems to make affect the equivalent of the empirical measure of bodily effects registered in activity, such as dilation of pupils, intestinal peristalsis, gland secretion, and galvanic skin responses, Massumi goes on to use such measures as a philosophical flight to think affect in terms of the virtual as the realm of potential, unlivable as tendencies or incipient acts, indeterminate and emergent.

For Massumi the turn to affect is about opening the human body to its indeterminacy, for example the indeterminacy of autonomic responses. It is therefore necessary for Massumi to define affect in terms of its autonomy from conscious perception and language, as well as emotion. He proposes that if conscious perception is to be understood as the narration of affect – as it is in the case of emotion, there is, nonetheless, always “a never-to-be-conscious autonomic remainder”, “a virtual remainder”, or what we would describe as an excess that pertains to the virtuality of affect itself (Massumi, 2002: 25). Massumi’s turn to the body’s indeterminacy, then, is not a return to the ‘pre-social’. Arguing that affect is not to be misunderstood as pre-social, Massumi proposes that it is “open-endedly social”, that is, “social in a manner ‘prior to’ the separating out of individuals” (2002: 9). So, affect is pre-individual and remains so; with each actualization, there remains a virtual remainder of affective potential. It is in this sense that affect refers to the openness of bodily matter to its own unstable, pre-individual capacities, which relate to it in a non-linear, non-deterministic way. Affect is to be understood in terms of potentiality, indeterminate emergence and creative mutation – that is to say, in terms of the ontologically real virtual remainder that enfolds and unfolds space-times implicated in matter.⁶

If thermodynamics enables the articulation of the human body as an autopoietic, equilibrium-seeking organism, then what science speaks to the virtuality of affect as it escapes this body? Following Massumi, we are drawn to David Bohm’s discussion of quantum physics and ‘the implicate order’ (2002: 37). As the essential feature of the implicate order is its ‘undivided wholeness’, where everything is enfolded in everything else and as well enfolded in the whole, Timothy Murphy argues that quantum phenomena are real even though they have no “continuous material existence”; quantum phenomena “themselves do not so much exist as *insist* or *subsist* in an enfolded form of space-time that is real despite its apparent ideality or abstraction” (Murphy, 1988: 222). All things unfolded in what Bohm calls ‘the explicate order’ emerge from the implicate order and return to it. While they exist, they are in a constant process of unfolding and re-enfolding. Bohm refers to ‘active information’ as a way to understand the potential of enfolding – the potential of any thing to affect itself and to be affected by its quantum field – what he refers to as ‘quantum potential’. In our

6 We are following Timothy Murphy who draws a comparison between the work of David Bohm, which we take up below, and Deleuze’s conceptualization of the virtual. Deleuze distinguished the virtual-actual circuit from the possible-real circuit: in contrast to the possible, which is to be realized, the virtual calls forth actualizations which have no resemblance to the virtual. Actualization is not a specification of a prior generality. Actualization out of virtuality is creation out of heterogeneity. Actualization is an experiment in virtuality, an affecting or materializing of a virtual series (Murphy, 1988).

conceptualizing affect in terms of the implicate order we are proposing to attribute to affect what Murphy describes as ‘quantum’ or ‘virtual ontology’ (Murphy, 1988). We are proposing to think affect as inhering not only in the human body but in matter generally, that is, to be at every level of matter as that which is potentiating or informational.⁷

Note 3. Theories of information are crossing from thermodynamics to bioinformatics to quantum theory. Quantum theory’s treatment of information leads us to propose that affect-itself is not beyond measure because it is involved in the process by which dynamic matter informs and measures itself.

Bohm’s conception of information differs from the conception of information as a representation, proposed by theorists such as Niels Bohr and Werner Heisenberg. For these theorists, quantum phenomena are *known* only through experimental frameworks and are thus inseparable from the apparatuses of measure (or representation).⁸ The phenomena are only endowed with real existence through the measuring apparatuses that represent them; they have no ontological status apart from these representations, which can only describe them “analogically by probability” (Murphy, 1988: 15). Murphy notes that theorists like Bohr and Heisenberg argue that at the quantum level, “a mathematical representation is all that remains of the physical world” (Murphy, 1988: 216). In this argument, any ontological attribution of physicality to what is below the threshold of probability is thought to be merely metaphysical. While Bohm argues that the measuring and the measured ‘participate irreducibly in each other’, it is not a matter of epistemology, of how things are known, but a matter of ontology. As such measuring for Bohm is a question of matter informing itself, where information is to be understood as physical. While quantum phenomena are indeterminate, they are real and their existence does not depend on their relationship to representations or measuring apparatuses. Rather, quantum phenomena are ontologically indeterminate in relationship to all that they are determinately implicated with.

In refusing a phenomenology that reduces quantum phenomena to consciousness or a measuring apparatus, Bohm instead points to “the existence of subquantum factors that affect events...that requires the assumption of an infinitesimal wave pattern that simultaneously links all aspects of an extended field of forces” (Murphy, 1988: 216). Therefore, all things affect each other through the quantum potential of the quantum field, even when the elements are separated by long distances, a feature of the implicate

7 A number of Bohm’s commentators point to his use of the holographic image to further elaborate the way in which unfoldment explicates the implicate at various levels of matter. While the holographic image is one in which all of its parts contain the whole, Bohm prefers the more dynamic term ‘holomovement’ (rather than static imagery of the hologram) to suggest that the whole of the material world is continuously including our sense experiences, nervous system and brain etc. See Talbot (1991)

8 See Murphy’s (1988) discussion of Bohm, Bohr, and Heisenberg. Also see, Bohm and Hiley (1993).

order that Bohm refers to as ‘non-locality’. This action at a distance points to a common pool of information belonging to the quantum field as a whole, what Bohm (1990) calls ‘active information’ (see also: Bohm and Hiley, 1993).

Active information is measure in matter, an in-forming, where the measuring and the measured constitute a specific case of the undivided wholeness of the implicate order. Given non-locality (or action at a distance), the effects of measure do not depend upon the strength of the quantum potential of the field but only on its form. Matter is a process of self-informing raw energy, an explication of the implicit with a remainder. As Bohm (1990) puts it, “One may think of the electron as moving under its own energy. The quantum potential then acts to put form into its motion, and this form is related to the form of the wave from which the quantum potential is derived.” A form, having very little energy, “enters into and directs a much greater energy. The activity of the latter is in this way given a form similar to that of the smaller energy” (Bohm and Hiley, 1993: 35). Bohm also sees this in the action of the DNA molecule that acts in the living cell to give form to the synthesis of proteins such that only the form of the DNA molecule counts “while energy is supplied by the rest of the cell and indeed ultimately by the environment as a whole.” Bohm concludes that “at any moment, only a part of the DNA molecule is being ‘read’ and giving rise to activity. The rest is potentially active and may become actually active according to the total situation in which the cell finds itself” (Bohm and Hiley, 1993: 36).

In relationship to in-forming, Bohm proposes that it is inappropriate “to say that we are simply measuring an intrinsic property” of the measured. What actually happens is a participation of the measuring and the measured that “reveal[s] a property that involves the whole context (of measuring or informing) in an inseparable way” (Bohm and Hiley, 1993: 6). Indeed, Bohm proposes that, “the ordinary classical and common sense idea of measurement is no longer relevant” (*ibid.*). Rather the participation of measuring and measured in one another is affective; that is, it produces a multiplier-effect, with quantum effects feeding forward and back through all levels of matter.⁹ In-forming or measuring, as Murphy might put it, “registers the whole configuration of field becomings and interactions and communicates this constantly shifting configuration to all of the constituent fields and singularities” (Murphy, 1988: 225). Drawing on the thought of the implicate order, active information and quantum potential, our conceptualization of affect signals an investment in the emergent at every level of matter and as such, a dissolution of the distinction between organic and non-organic life. It is not surprising then that the conceptualization of affect has drawn to it, along with the discourse of physics, the discourses of the life sciences and genetic engineering technologies as well.

In her treatment of affect, Luciana Parisi (2004) draws on the discourses of genetic engineering and theories of evolution. She shows how genetic engineering works in ways reminiscent of what evolutionary theorists describe as the informational work of mitochondrial DNA, an informational relic originating from a virus billions of years ago but which now replicates without the body of the virus. Drawing on Lynn Margulis and

9 Massumi (2002: 36-37) offers a discussion of quantum effects and the way they feed forward and back through all levels of matter.

Dorion Sagan (Margulis, 1981; Margulis and Sagan, 1986), Parisi engages their treatment of the replication of mitochondria in a process called endosymbiosis. In this process, mitochondria take up residence in a cell body of another organism without changing their own method of informing. Like bacteria, mitochondria have no immune system, so they assemble across phyla without fidelity to relations of genus and species; they communicate horizontally, assembling through contact or contagion rather than through a linear transmission respectful of species and genus. Parisi (2004: 175) argues that endosymbiosis therefore adds “microbial memories and cellular parasitism” to reproduction through nucleic DNA.¹⁰ Endosymbiosis models a process of precipitating an uncertain future by proliferating mutation, a process which is descriptive of genetic engineering as well.

Taking mammal cloning as an example of genetic engineering, Parisi proposes that what occurs in cloning is that the cell is “brought back to a virtual stage of growth also defined as zero degree of development” (2004: 157). However, while this suggests that the “ageing time of adult cells can be reversed and reprogrammed for new functions,” Parisi goes on to argue that this does not mean that molecular time is either progressive or regressive, where “a return to zero is a return to... ground zero out of which life grows” (*ibid.*). Rather Parisi sees in cloning an example of the nonlinear relationship of causes and effects which “indicates the proliferation of unpredictable differentiation, the actual becoming of cells whose implications are yet to be realized” (*ibid.*).

Usually meant to control mutation, the genetic engineering of cloning instead “triggers an unexpected cellular becoming rather than engendering a mere copy of an original” (Parisi, 2004: 157) This kind of replication, “the contagious fabrication of life and ultimately the continual variation of matter,” is descriptive of genetic engineering which is provoking or precipitating emergence, rather than only preventing it (*ibid.*: 159). In light of Bohm’s formulation of active information, Parisi’s treatment of genetic engineering suggests that it is a measuring in matter, an informing that actualizes what was only potentially active in the form of nucleic DNA. It is a manipulation of the time-spaces implicated in matter, a modulation of capacity or affect that might be described in terms of what Parisi, with Steven Goodman, calls ‘mnemonic control’ (Parisi and Goodman, 2005).

Note 4. We are proposing that affect-itself works along with power through mnemonic control, a manipulation of the

10 Parisi’s comparison of genetic technologies and mitochondrial replication points to the creative mutation possible in technological processes of genetic engineering. Melinda Cooper has also drawn on the work of microbiologists, including Margulis and Sagan, to show how microbial communication offers a model for the ‘biological turn’ in the war on terror. She argues that the ability of bacteria to exchange sequences of DNA across species and genera has only recently been recognized to be useful for biological warfare. This ability of bacteria also has led to a general mode of governance and economy based on the precipitation of random mutation, which we will discuss below (See: Cooper, 2006). Both Parisi and Cooper complexify those treatments of genetic technologies which link them to what Kaushik Sunder Rajan (2006) calls ‘biocapitalism’ by arguing that genetic technologies are reductive of life rather than being seen as a complicated productivity

unfolding and re-enfolding of space-times implicated in matter. Critical engagements with this power, what we will refer to as ‘pre-emptive power’, necessarily engage the reconfiguration of matter, energy, affect and information that is presently being invested by science and capital.

By mnemonic control, Parisi and Goodman (2005) mean to rethink the relationship of memory and power in the context of the ubiquitous computing of a distributed system of memory storage devices across the planet. They argue that “power no longer leaves the future unoccupied and open. It doesn’t merely operate on probabilities, i.e. actual forms of living that already exist in the present-past.” Rather, they propose that power is now engaged with memory and its working at the informational level of matter and therefore that power “engages... the virtual entities and their active agency within actual, living processes” (2005: 2).

In pointing to the technological context of memory, Parisi and Goodman mean to emphasize the use of control technologies to both anticipate and precipitate contagion which Parisi considered in her treatment of mitochondria. She and Goodman point to “the contagious virtual residue of memory”, potentials of the affective or the informational to be actualized in a deployment of what they call ‘preemptive power’ (2005: 3). As Parisi and Goodman see it, the aim of preemptive power is to manipulate memory by bringing the future into the present. Taking as an example genetically engineered manipulation of space-times as in cloning, Parisi and Goodman argue that preemptive power actualizes the future by foreclosing creative mutation, seeking to anticipate or control emergence; but it also therefore precipitates emergence and produces more uncertainty. Preemptive power “tackles a universe of micro temporalities enabling the future not to be predicted by means of probabilities but to actively occupy the present by means of immediacy” – that is, affectively. “Such a sense of present futurity entails how uncertainties cannot be calculated in advance” (2005: 6). Uncertainty is made an experience of futurity in the present. “The future yet to be formed is actively populating the sensations of the present anticipating what is to come, the feeling of what happens before its actualization” (2005: 3) This, in order to be able to trade on uncertainty, to trade on a future at its most unpredictable, at the limit of the calculable – to trade on emergence.

Preemptive power means to foreclose the potential of ‘mnemonic mutation’ by making uncertainty a means of controlling the present with an affective experience of the future. In that preemptive power drives itself to time-spaces beyond the measure of probability, mnemonic control also allows for mnemonic mutation, a production of affect, the informing of quantum potential. Thus, preemptive power aims at the not-yet actualized or affect-itself, to find a resource for energy in the virtuality of the implicate order. Since the implicate order is an ‘an-entropic order’, where the entropy produced in the energy expended by active information is profoundly deferred throughout the various levels of matter, the investment of capital and science in the virtual or affect-itself may be understood as a strategy for meeting the work-energy crisis of contemporary capitalism. It may well be the dream of capitalists to be able to apply small amounts of

energy in the expectation of a multiplier-effect in the reverberations of active information across all levels of matter.

Such a dream may already be giving productivity a different measure, the one we have been exploring as information immanent to matter, which when taken as a measure of value, proposes that the imperative of capitalism to extract value from human laborers is reaching a threshold beyond which preemptive power is realized as a way of governing life or affect-itself, where, as Massumi puts it, “productive powers shade into powers of existence.... Productive powers are now growth factors, power to be, becoming” (Massumi, ND). As such, affect has become an economic factor, an action on the future whose value is measured affectively, “not in labor time but in life time” (Massumi, 2004: 4).

Note 5. While affective labor has been theorized in terms of changes in capitalism in the early 1970s, our conceptualization of affect-itself is befitting to conditions of productivity and its governance in the early twenty first century when practices of speculation dominate not only for anticipating the future but precipitating it as well.

The conditions of possibility of affective labor set out in the early 1970s are usually described in terms of a shift to a service economy, as well as a globalization of financialization which follows on the formal subsumption of the reproduction of the laborer into capital in the post-World War II economy of mass production and mass consumption. As reproduction becomes a matter of market exchange, the reproduction of labor becomes a force of production. There is the resulting collapse of the distinction between production and consumption and an intensification of capital circulation. The development of digital technologies serves to replace workers and also to help augment the networking that becomes necessary for a globalized circulation. There is increased investment in the capital-intensive industries of technoscience and communication technologies which necessitate and make possible the transfer of surplus value extracted from the low-investment sector of the service industry to the high-investment sector, for example the capital-intensive industries of information and communication. Under these conditions, usually analyzed as effects of the break-up of the Fordist-Keynesian regime of capital accumulation, laboring is more readily described as affective, a matter of linguistic, communicative, or intellectual capacities.

This transfer of surplus value from labor-intensive to capital-intensive sectors, and usually from one part of the globe to another, was to be protected or secured by what would come to be called neoliberal policies of institutions like the World Bank and the International Monetary Fund. This included the structural adjustment of debt, privatization or the decline of government supported security nets for populations, the manipulation of worldwide fiscal and monetary policies meant to create and manage crises, and, finally, a redistribution of populations through immigration and forced migration. While these characteristics continue to describe the global economy, we are proposing that capitalist productivity is not just in the state of a flexible ‘accumulation

by dispossession', as David Harvey (2003: 137-182) would have it. Along with financialization, privatization and the management and manipulation of economic crises, capitalism meets a threshold beyond which a plane of investment and accumulation is laid out in the domain of affect-itself, along with what is referred to as the real subsumption of life itself, for which the relationship of governance and economy is reenvisioned in what can be referred to as a radical neoliberalism.

In taking up a radical neoliberalism, we are following conceptions of the relationship of governance and economy which build on Michel Foucault's treatment of biopolitics and governmentality and address affect and power of a radical neoliberalism.¹¹ Massumi, for one, sees the early elaboration of a radical neoliberalism in present conditions brought on by crises of governing capitalist productivity such as Katrina, the war in Iraq, and the war on terrorism. Exemplified by these events, a radical neoliberalism is characterized by a strategic oscillation in governing between regulation that exerts a downward pressure on the productivity of life, and sovereign command, which moves in when there is catastrophe or crisis. But when it does, it does so in order to provoke life, urging it to intensify its own productivity.

Command is better understood as 'negative command', a command that withdraws after life systems are restarted. Negative command, therefore, must necessarily operate in adjacency with the self-organizing processes of technical systems, where the technical is engaged with the informational substrate immanent to matter. While regulation and command work in oscillation with each other, both command and regulation are to leave the field once life is 'normal' again or when life has been jump-started again. Once government has guaranteed economic activity in the productivity of life, then it is passed back over to the business of capitalism so that capital might make more out of life. At least, that is what is expected (Massumi, 2006).

Others have described neoliberalism as the extension of an economic rationality to all aspects of society, including life-itself, where indeed the market is the organizing and

11 In many of the treatments of affective labor we explore, there is an implicit or explicit recognition of the importance of Foucault's notion of biopower as well as his treatment of economy in relation to governmentality. This is because Foucault recognized the tie between the state, power and life. He traced the entrance of the life of the individual and of the species into politics at the moment when the managing of the household became a model for managing the state, when the sovereign's power shifted from the principality or the territory to the concern and management of the people, that is, the art of governing. In Foucault's account this occurs from the 16th through the 18th century, when the model of the good father overseeing the working of the family, its economy, becomes the managerial model for the state. In his essay, 'Governmentality', Foucault (1991) argues that the art of government requires the entrance of economy into political practice: "to set up an economy at the level of the entire state which means exercising towards its inhabitants and the wealth and behavior of each and all, a form of surveillance and control as attentive as the head of a family over his household and his goods." The economical state is engaged in the different flows and relationships of population/territory/things in terms of health, wealth and a general security of the people. Here the state intervenes in the economy, where the economy relies on statistical measures of the population's needs, regularities and irregularities, and where subsets of the population such as the family become objects and vehicles of discipline. More recently, theorists like Massumi have drawn on Foucault's work on neoliberal government to further address governmentality. Massumi makes use of *The Birth of Biopolitics* to outline the relationship of governance and economy in order to capture the workings of what we have been referring to as pre-emptive power.

regulative principle of the state and where the state legitimizes itself by behaving ‘like a market actor’ (Brown, 2003; Lemke, 2001). But what Massumi argues is that life-itself is involved in this political economic process in the sense that the rationality characterizing the turn from neoliberalism to radical neoliberalism is a rationality of affectivity. He refers to the political production of ‘affective facts’, when public fear and anxiety are stimulated by the State, and these affects begin to operate on their own, as when airports are closed because of a threat that may later be proven to be unfounded. In this case, “Threat triggers fear. The fear is of disruption. The fear is a disruption” (Massumi, ND: 8).

The affective fact displaces empirical facticity and prompts the “breakdown of logico-discursive reasoning” (*ibid.*: 8). While neoliberalism made use of indexes to prevent what was forecasted as coming from the future, reading the past as harbinger of the future, radical neoliberalism, by contrast, does not rely on prevention. It means to effect: for example, when fear of the future is stimulated in the present, the fear brings the future into the present in the form of an affective fact (*ibid.*: 8). Massumi, like Parisi and Goodman, treats this affective modulation of futurity as a deployment of preemptive power (*ibid.*: 8).

In a radical neoliberalism, affectivity functions beside command as “a component of passage between mechanisms, orders of phenomena, and modes of power” (Parisi and Goodman, 2005). Affectivity fuses the formerly separate spheres of so-called liberal democracy, causing them to function as one, “woven into the economy, making a directly economic mode of power the motor of the process as a whole: the ontogenetic power productive of becoming” (2005: 8). Affect holds together disciplinary and biopolitical regulatory mechanisms, along with command in its sudden flashes of sovereign power. It does so to modulate futurity and operate on what Foucault referred to as populations, a heterogeneous massification of singularity, which differ from historically constituted agents such as classes. Populations are subject to the management of the social, biological and economic conditions of the reproduction of life. But they are not simply populations of individual subjects, but more populations of capacities appearing as data in touch with the informational substrate of matter. These are populations referring to affect-itself and the way in which data is autoaffective, stirring up matter in the measure of exploitation, domination and mistreatment. The challenge for theories of affect, then, becomes how to articulate a politics in the present, when what constitutes the present is set in relation to a preemptive modulation of futurity. We offer some initial thoughts on this challenge in our conclusion.

Conclusion

We have situated the questions of measure and value in the context of those sciences that along with capital have brought forth affect as an economic factor central to a radical neoliberal governing of productivity. We have been mindful that science and capital have always been bound up in an effort to make the expenditure of energy more productive, more valuable. In other words, there can be no measure or value, and therefore no capitalist productivity, without science. Modes of evaluation and

measurement necessary to capitalist productivity depend on the intelligibility that science brings forth in the world, constituting the world.

In focusing on affect-itself in relationship to information, we have been engaged in rethinking value and measure in the context of a shift in governance. We consider this to be a shift away from a State project to temper, direct, and regulate the economy through consciously calculated intentionality (as in Keynesian economics) and toward a radical neoliberal governance of economy where the value of productive activity is no longer found in conscious and calculated intention, but rather in the play of uncertainty and the direct manipulation of affectivity. Whereas a post-World War II economy was subordinated to the calculations, goals, and intentions of the State, a radical neoliberal governmentality now subordinates its activities to the logic of a market economy and a rationality of affectivity. Here, the value of affect emerges adjacent to the production of use values for exchange and where the distinction between laboring and activity can no longer be maintained.

Thus the economy is no longer directed and regulated with regard to the particular social goals of the State that would necessitate the disciplining of laborers on behalf of social cohesion. It is no longer taken for granted that such activity will cause in any determinate way the achievement of a State plan of calculated intentionality. Rather, a radical neoliberalism submits social life to the imperatives of a market economy, which are uncertain. If value still refers to activity that might be described as ‘socially necessary’, this is only under conditions in which the socially necessary is a variable to be determined after the activity can be deemed productive; thus, what is of value is always uncertain or deferred.

We have argued that this does not mean that there is no measurement, or that questions of measure are irrelevant in contemporary capitalism. Rather, we have been engaged in a re-articulation of measure and its relationship to value. We have offered notes toward exploring this changed relationship in which we have proposed that affectivity is central to the present relationship of measure and value. Whereas measure had previously provided a representation of value, now affectivity has become a means of measuring value that is itself autoaffective, producing affect in a multiplier effect across metastable levels of matter. This is to think in terms of affective measure, to understand measure and affect not simply as related, but as occurring simultaneously in relations of metastability. Focusing on the affective circuit of fear and (in)security in the deployment of preemptive power, we have proposed that there is a measure of affectivity produced in the uncertainty or deferral of value. Rather than economic indicators establishing confidence in economic futures, the affective production of (in)security has become itself an economic indicator. That is to say, an increased sense of security or insecurity becomes a prospective evaluation of the economy’s future behavior. As such, the value of an action or commodity is affective rather than its being a matter of known effects of a calculated intentionality. In an economy of affect-itself, value is that which endlessly unfolds from all action and this is the nature of its measure: it feeds forward and backward across all levels of matter – what we have described as matter measuring itself.

If for Caffentzis the politics of measure involve the estimation of the exploitation of laborers in the production of surplus value, we have been arguing that rethinking measure in relationship to value at this time also speaks to questions of the political. While the measure of value still can be said to provide estimations of exploitation, it is not in terms of hours of energy expended by laborers in activity that is distinguishable from living. Rather exploitation must be measured along with oppression, domination, mistreatment and misrecognition as matters of affective capacity, a politics of the differential distribution among populations of capacities for living. These are not simply populations of individual subjects but also populations of capacities appearing as data or information without reference to individual subjects. Thus, in an economy of affect-itself, data of disease, terror, poverty, illiteracy, and criminality all become players in a politics of affect, a matter of information, an in-forming in matter. For us, politics within a radical neoliberal governance of affect-itself must engage with the modulation of futurity at all levels of matter. How data about capacities for living feeds back across all those levels (genetic, human, populational, and otherwise), or how the measure of capacity sets off multiplier effects that precipitate future life capacities and their value, are the questions that remain for developing a political ground adequate for responses to capitalism today.

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