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TOO-BLUE: COLOUR-PATCH FOR AN EXPANDED EMPIRICISM

Abstract

This essay is in part a response to the rhetoric of the 'two cultures' revived by the 'science wars' conducted in recent years through the mass media against humanities disciplines, especially 'post-modern' art, cultural studies, and non-analytic philosophy. The essay focuses in greatest detail on the relation between science and philosophy, arguing that they are in fact complementary activities effectively partaking of the same reality. Although knowledge practices in the humanities draw from their partaking radically different orders of result from those of science (and from each other), they have claim to an effective connection to a shared reality. Humanities disciplines, and even 'informal' or 'traditional' knowledge practices, can be argued to be realist, empirical enterprises generating modes of validity specific to their manner of result – provided that the definition of empirical reality is generously broadened. An 'expanded' empiricism is a 'radical' empiricism in William James's sense of taking relations to be as real and as fundamentally given to experience as discrete objects or sense-data. Recognizing the reality of relation nudges empiricism in the direction of process philosophy. The essay reviews concepts of cause and discovery, nature and culture, affect and virtuality, truth and constructedness, taking the experience of colour as a prime example. It combines elements of James's radical empiricism with Whitehead's process philosophy with the poststructuralism of Deleuze and Guattari with chaos and complexity theory. The resulting perspective converges with Isabelle Stengers' vision of a non-judgemental political ecology of knowledge. An expansive ethics of relationality, of mutual differential belonging, is the natural correlate of an expanded culture of empiricism.

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> It's very simple. The researcher asks a subject to match the blue of a certain friend's eyes. The friend, of course, is absent. The procedure is repeated with the black of the subject's hat, the red of his own lips, the brown of the bricks of the house he lived in. The idea is to test the effect of memory on colour constancy. The researcher is David Katz, working in the first decade of the century.
>
> (Katz, 1911[1935])

IT ISN'T REALLY THAT simple. As an uncontrolled experiment, unaccounted for variables entered in. All of the things Katz asked to be colour-matched were intimate everyday objects, and could thus be expected to be charged with layers of interest and affect. What was being tested, then, was less memory than the co-functioning of affect with memory. Further, Katz assumed that language was operating neutrally. The word 'blue' is assumed to play the role of a transparent designator of what two particular things have in common, a pair of eyes in the world at large and a test patch in the laboratory. Language is assumed to be a medium of commonality, in two senses. First, in the sense that it is posited to harbour a generality capable of effectively subsuming two particulars. Secondly, in the sense that the experimenter and the subject are assumed to have equal access to its operations of neutrality, or to stand in the same relation to 'blue' as deployed in the laboratory. The word is used by the experimenter to stage a match or mismatch. The role Katz assigned to language is standardizing: to deploy and guarantee a standard of comparison in order to test a response against it.

Under the circumstances, however, the experimenter and the subject do not stand in the same relation to 'blue'. There is an asymmetry in their relation to the word, due to the asymmetry of their respective stances in the laboratory context. Language is playing a primarily standardizing function only for the experimenter. For the subject, it is primarily operating as a trigger – for affect and memory. So what Katz has staged is a co-functioning of language, affect and memory. From his stance as experimenter, this *complex* co-functioning appears *simply* as a one-to-one correspondence (or lack thereof) between a present test patch and a past perception. Katz hasn't reduced experience to another level, for example physiology or the physics of light. But he has extracted a simplicity from a complexity of experience. He has extracted a narrow correspondence-effect from a more encompassing asymmetry. What he has done is perform a reduction of experience operating on the level of experience itself. This kind of endo-reduction of experience might be argued to characterize the

Gestalt approach to experimentation, of which Katz was an important forerunner.

You could say that this is bad science, and dismiss it out of hand. Or, you could say that it is proto-science or perhaps semi-science, and ask what precisely it semi-did and proto-how. For Katz's procedure does constitute a kind of empirical investigation, and it did generate a repeatable result with some claim to factuality. The semi-fact is: under these circumstances, a match does not take place. What does the generation of this factoid allow one to think about the co-functioning of language, memory, affect, asymmetrical social relations, lived complexity, and produced simplicity? If you resituate the factoid in that encompassing co-functioning, the stakes change. The problem for the traditional scientist would be how to convert the factoid into a full-fledged fact: to verify it. This would involve purifying the experiment of uncontrolled variables. Language, affect, and social position would have to be neutralized to the greatest extent possible. In other words, ways would have to be found to make memory and colour perception approach the physiological limit of bare brain-functioning. This is a more severe reduction than Katz's. It is no doubt possible to carry out, and would quite possibly yield something of value, perhaps to neurophysiology, which down the line might in turn prove profitable, for example, to medicine, by supplementing its diagnostic or therapeutic techniques.

But there are other ways of approaching the situation than bare-braining it. For one thing, you could try to *think* it. Again, you could resituate the factoid in its encompassing co-functioning, and ask what that co-functioning demands or allows one to think. The question is no longer whether the 'fact' is truly a fact, or how it might profitably become one. The question bears on the encompassing *co-functioning* from which the fact or factoid, such as it is, was *generated*. In other words, what is at stake is no longer factuality and its profitability but rather *relation* and its *genitivity*. The question is: what new thoughts does this nexus of productively experienced relation make it possible to think? This is a philosophical question. This is the positive problem of the philosopher. Included in it is the further question: under what circumstances and to what effect might that new-thought relationality and genitivity be extracted from this nexus of experience and inserted into others, variationally? That is the pragmatic problem of the philosopher (or the pragmatic moment of the philosopher's positive problem). In this second moment philosophical method segues into ethics and politics, just as scientific method relays in periodic fashion into technique and its capitalization.

Now it just so happens that the way in which Katz's subjects positively produced their mismatch is quite telling. They 'almost always' selected a colour that was 'too bright to match a bright object', 'too dark to match a dark object', and 'too saturated to match an object which is known to have a distinct hue'. The co-functioning of language, memory and affect 'exaggerates' colour. The exaggeration, Katz remarks, results from the 'absolute striking character' of certain

'colour-peculiarities'. The remembering of a colour is not effectively a reproduction of a perception, but a transformation or becoming of it. Matching, it would seem, is not inherent to the mechanism of colour memory. Testing a correspondence between a past perception and a present one is what the *experimenter* does with the memory he is given. He takes the memory-colour generated by his subject and submits it to a test of identity. He tests it for standard. What the subject does, it turns out, exceeds the standard. While the experimenter is representing standards, the subject is surreptitiously trucking with singularity. He or she is exaggeratedly conveying an 'absolutely striking *peculiarity* of colour'. The memory of the friend's eyes is in some way *too* 'blue': excess. The remembered colour exceeds the testable meaning of the word. In the name of colour constancy, the subject has expressed a singular and excessive becoming of colour. Between 'blue' used as the trigger for the production of a memory, and 'blue' used to test the identity of that memory, something extra has slipped in which the colour-word, as the common property of the experimenter and the subject, does not designate. The too-blue of the friend's eyes dodges the standardizing language that triggers and tests it. It is spoken or written only negatively, as a miss. It is on that basis that it enters language, in the experimenter's reporting of the test results, and becomes generally available for conscious elaboration. A normative deployment of language has provoked the production of a singular excess of meaning. Then in a second moment, of reporting about the production, that deployment brings the excess-over-itself into itself. Language is operating simultaneously to standardize (reduce) and convey (express) an ineffable singularity of experience.[1]

If, in the interval between triggering and testing by 'blue,' the subject is not doing what the experimenter is doing – setting up a correspondence between a past and present perception – then what exactly is he or she doing with colour? Or is that even the right question? Isn't the question rather: What is colour doing to the subject? For the subject is not even aware of the excess she is producing until the experimenter reports the results. Until then, she is left in the belief that she has made the match. The exaggeration that she effectively produces is the result of some 'absolutely striking' peculiarity of colour. The subject has been singularly struck by colour. Colour has *struck*, and without either the subject or the experimenter willing it so, it has exceeded. It has gone over the instituted line, pushed past the mark set for it by the laboratory set-up, as unwilled as it is unmatched by its human hosts.

This pushiness is what Hume (1969: 147) called the 'vivacity' of an 'impression'. It attests to a *self-activity* of experience. When colour is interrogated by language, it displays a self-insistent dynamism that commands itself to the instituted context, into which it breaks and enters, delivering itself to the questioning. This self-delivery or ingressive activity of experience is neither a common property of the language acts that end up expressing it, nor the sole property of any of the language-users involved. The excess of colour slips into language

between the experimenter and the subject. *It belongs to their joint situation*. More precisely, it *enters* their situation. It is an impersonality of experience that makes social ingress. It *becomes* personal; when another confronts the subject with evidence of his exceptional miss and has to own up to it. *The colour experience is not fundamentally personal*. It is more accurate to say that it becomes personalized, and that it does so only in the playing out of a very particular situation enveloping a social asymmetry: the differential in status and power between the roles of the experimenter and the subject. *Experience becomes personal socially*. This is attested to by the fact that its pushiness, as personalized, is struck by the social asymmetry. The produced excess is personally owned up to only by the 'subject'. The experimenter keeps a distance on its owning. He cleaves to the neutralizing, standardizing operation of language as reportage. For him, the excess appears as an 'object' of experience, however unexpected. The 'subjectivity' of the experimentee emerges in co-functioning with 'objectivity', maintained against surprise, at a different pole of the same asymmetry. The emergence of the subjective, in this personal sense and the maintenance of the objective are co-results of the same event.

The event lies at the intersection of at least two (and in reality many more) process lines. One is the adoption and imposition by the experimenter of the institutional set-up of the experiment, as defined linguistically, architecturally, and on any number of other interlocking levels. Call this the *context*. Context pre-exists. The possibility of maintaining objectivity in the face of surprise comes from the context's relative stability as a more or less determinate given. The second process line is the self-insistence of an autonomy of experience. Reserve the term *situation* for the *event* of an autonomy of experience pushing into and moving across a context. The colour-singularity, by virtue of its self-motivating experiential autonomy can, in and of itself, be considered a kind of impersonal subjectivity. The owned subjectivity with which the experimentee leaves – the public memory of having personally misremembered – is a contextual expression of the insurgent, impersonal subjectivity that is the singularity of colour. The personal and impersonal poles of subjectivity lie at two ends of the same process line. At the beginning of the line, a self-activity pushes in from outside. By the end, that vivacity has settled into a stable structural coupling that gives it reportable meaning, as the asymmetrical opposite of the objective. Except that there is no beginning, because the insistent singularity is immemorial, arriving, as far as this context is concerned, out of nowhere. The beginning is an *indeterminate givenness*, which by virtue of its indeterminacy cannot be said exactly to have pre-existed. But neither can it be expected to end. The next time the subject remembers his friend's face, those familiar eyes will still be too-blue. Think of Frank Sinatra. The structural capture of the vivacity of colour co-exists with its continued autonomy: dead, objectified . . . *but still*:

> Headline: 'Sinatra Remembered Can't Match Old Blue Eyes'.[2]

Although the singularity of experience has no assignable beginning or end, it does pass thresholds, arriving unbidden into a context, then settling in and no sooner slipping out to seek ingress elsewhere. Its travelling across thresholds from situation to situation may prove to have a periodicity, which if followed provides a more ample expression of its self-activity. Upon that expression a speculative narrative can be built. The narrative is 'speculative' because even though the ambulation it follows exhibits a periodic consistency, at each departure the singularity disappears into itself, into its own pure activity (uncontextualized and inter-situational). The next arrival is always across the threshold of that subjective indeterminacy. This makes thoroughly reliable prediction impossible. It is the philosopher's job to tell the story of that impossibility.

There is a certain slippery eternity to the colour's experienced singularity. Nothing is subtracted from experience when the singularity appears asymmetrically in a given context as a standard-beholden 'object' of investigation. Something is added. What has happened is that a reportable (and thus intentionally repeatable, institutionally controllable, stabalizable) structural coupling has been added to a travelling autonomy (an unintended, automatic repetition). In any case, *experience continues.* Experience is an additive 'form of transition',[3] a continual motion of intersecting process lines: a co-motion (commotion) of mutual non-exclusion. As William James puts it, experience never stops 'streaming', and its streaming snowballs.[4]

The snowballing is transformative. The singularity of colour struck the prepared context, yielding an unexpected result; and the context structurally struck back, capturing the result for control purposes. The 'impression' was mutual. It is this mutuality of transformation that makes it possible to hold, without a hint of contradiction, that the colour was produced in context *and* eternally 'insists' on itself, in pushy independence.[5] The blue belonging to the situation is both 'constructed' by the context, which in large part is language-determined, *and* insists or persists outside linguistic determination (*ex*-ists). Constructed *and* self-standing: far from being an indictment of 'reality', as an anti-speculative 'science-warrior' of the Alan Sokal variety might have it, the philosophical story I have just told suggests a human definition of it. The real is that which expresses itself in language upon forcibly breaking-and-entering from an immemorial outside. Again in James's words (1996: 67–73), the 'ultimate fact' is the certainty of a 'really-next-effect' whose nature cannot entirely be foreseen: an indefinite ever 'more' 'fringing' every determinate context with a timeless margin of chance and newness. Reality is not fundamentally objective. Before and after it becomes an object it is an inexhaustible reserve of surprise. The real is the snowballing *process* that makes a certainty of *change*. To be expected: the arrival of the new, the uninvited ingress of the singular. Produced and eternal, constructed and self-standing, unaccountably old and ever-changing, captive to context and eluding it, verified and storied, sitting true and in fictive travel to a future context – sci-fi (*sci-phi*). The fable of the real.

Katz's colour-singularity appears in and to the context structurally stabilized as an object of discourse susceptible to subsequent verification by fine-tuning the experimentation. It is in the same stroke that singularity enters discourse and is structurally stabilized as a proto-or semi-scientific object. The object has a life cycle. It passes from the 'ultimate fact' of its unexpected arrival to the status of a 'factoid' that is felt to be, and can be meaningfully discussed, but requires further investigation to determine precisely what manner of object it is and what is to be done with it. In certain contexts, such as Katz's, the factoid has a distinct calling to mature into a verified 'bare' fact. The life cycle of the object is from active indeterminacy, to vague determination, to useful definition (tending toward the ideal limit of full determination). What we call *common sense* is the field of the factoid. *Anecdote* is its characteristic content as a genre of thought. Not all objects complete their life cycle, passing from the status of factoid to bare fact. However, *all bare facts are born factoid*. Every new object of science emerges from a 'mangle' of practice in which the specialized procedures and discourses of science, confronted with an ingress of reality and drawing on all available resources to grapple with it, remix with common sense and anecdote operating inside and outside the laboratory and passing freely across its walls. A factoid that cannot, will not, or hasn't yet matured remains a mangled object of anecdotal discourse, or *gossip* – as it is, again, after it matures, in addition to being a scientific object and to the precise extent to which it is noteworthy. Gossip is the archaeology of science. It is in no way to belittle or criticize science to point this kinship. After all, it is no mean feat to transform the vagueness and changeability of anecdote into a dependable fact. All of technique rests on that transformation.[6]

When the feat has been accomplished, a life cycle has been completed. A stream of experience has, in James' and Whitehead's vocabularies, reached a 'terminus'.[7] It is important to reiterate that a 'terminus' of experience is not necessarily a beginning or an end. It can be a threshold: the object has an afterlife. A technical object continues to evolve, but within the bounds of its definition. It changes but not noticeably enough to merit a new official name. If it does jump the bounds of its nominal identity, it is because an event has transpired. Something new has arrived in the world. In a very particular context, a new singularity has irrupted, making the context a genitive 'situation' again. 'More' has come. A new life: more to reality.

The birth of a new technical object is never a linear progress. It is knotty, a mangle-prone emergence across a threshold of surprise. A new cycle begins, from active indeterminacy, to vague determination, to 'full' determination (nominal identity deployed within a conventional sphere of practical dependability). The life of a technical object must always pass through the stages of ultimate fact of experience (rupture/irruption/threshold of existence) and merely-talked-about factoid (semi-objective elaboration) before finally baring itself through experimentation (verification/profitable deployment). For this reason, the history of

science is never linear and never pure of context and situation. The history of science cannot be contained in 'intellectual history'. It is always 'dirtied' by an unavoidable genealogical link to chance event, common sense, and gossip. In short, recounting its story, describing its effective form of transition, demands a broadly Foucaultian genealogy of the kind practised by Bruno Latour and supported philosophically by Isabelle Stengers. As both authors emphasize, that genealogy must include 'transversal' linkages to non-scientific spheres of practice (especially commercial and governmental, most crucially concerning questions of regulation and funding) as well as to proto-or semi-scientific spheres. These latter may not be as formalized as what is recognized as Western science, but are far more elaborated and dependable than common sense and gossip. They attest that there are many degrees of reality or forms of transition populating the interval between factoid and bare fact. Each degree has its own contextual habitat, conventions of technique, and modes of transmission from one more or less controlled context to the next. There are degrees of factuality, corresponding to species of science, Gestalt is one such species, as are 'traditional knowledges' and informal, 'alternative', or 'folkloric' knowings of many kinds. These species co-exist, co-adapt, and mutually influence one another. In short, there is a global *ecology of knowledge practices* (Stengers, 1996: 51–72).[8]

These are some ways of thinking about the singularity of experience from the angle of its loquacious capture for objectivity and technique. But what of its reserve? What of its self-insistent 'stillness'? What of its eternally mercurial subjectivity? Talking about that dimension of the situation requires a different story, with different protagonists, following other lines of process entwined with the one just followed.

The colour blue figured in Katz's experimental situation in divergent capacities. It was a *differential* object. Along one axis, or in one of its differential dimensions, it was matched standard assignable by common consensus to things other than itself and to which it equally inhered: a retina and a test patch. It figured as an *attribute* (or common property incumbent in standardized language use). It was also an asymmetrically owned mis-memory that was assumed to be knowable but whose exact nature was yet to be determined by follow-up experimentation. In this dimension, it was a multivalent *content*, at once of inalienable personalized memory and of a public discourse of knowing capture. When we speak of 'an' object or thing, what we are referring to is a complex interweaving of attributes and contents, as subsumed under a nominal identity (a name). 'An' object subsumes a multiplicity that evolves situationally. Every object is an evolving differential: a snowballing, open-ended variation on itself.

But there is more to the object than attributes and contents. There was the Sinatra dimension: ole too-blue eyes. This was the axis of escape, along which the differential object 'blue' slipped quietly away from its own growing objectivity. The 'too' of the blue was an excess marking the certainty that a line of experiential self-activity or impersonal subjectivity that has made ingress into the

situation will overspill it, going on to enter other situations, across other thresholds of indeterminacy. The excess was a reserve of recurrence in the situation, vaguely palpable but not definable or confinable. It was the direct presence, in the collective experience, of a 'more' of experience: the presence of process.

It was stated earlier that the object owes this elusive excess to an accumulation of familiarity and fondness that the triggering of the friendly memory automatically brought out. But that is not the whole story. As it transpires, the excess of blue is owned by the experimentee only retrospectively. It makes ingress in excess of its expressibility as a personal feeling. The 'excess', then, is less the quantity of feeling than the surprising manner in which the feeling preceded itself into the context: it is the contextual *precession* of ownable feeling. That is why the 'excess' is not simply a quantity of feeling, however great. It is a *qualitative* surplus over any quantity of personal feeling. It may well not have come about without an antecedent accumulation of familiarity and fondness. But it is not reducible to that personal 'investment'. This is all the more apparent when it is considered that the ingress of the excess was rigged into being by the experimental set-up.[9] Too-blue is collectively contextualized as a content of a personal life. As a discursively defined content, it is a retrospective, collective, contextual artefact. As a discursive content, it comes to be. As excess, it continues. It runs through this containment, jumping to the next contextual rigging. Its precession proceeds apace. The excess is the *quality* of continuing activity by which the differential object 'blue' escapes its contextual containment – its objectivity.

Reserve the term 'emotion' for the personalized content, and *affect* for the continuation. Emotion is contextual. Affect is situational: eventfully ingressive to context. Serially so: affect is *transsituational*. As processional as it is precessional, affect inhabits the passage. It is pre-and post-contextual, pre-and post-personal, an excess of continuity invested only in the ongoing: its own. Self-continuity across the gaps. Impersonal affect is the connecting thread of experience. It is the invisible glue that holds the world together. In event. The world-glue of affect is an *autonomy of event-connection* continuing across its own serialized capture in context.

The true duality is not the metaphysical opposition between the subject and object. Subject and object always come together in context. They tightly embrace each other in their reciprocal definition in discourse, as the owner and the ownable of conventional content. The true duality is between continuity and discontinuity (transsituation and context). This is not a metaphysical opposition. It is a processual rhythm, in and of the world, expressing an ontological tension between manipulable objectivity and elusively ongoing qualitative activity (*becoming*). Much useless theoretical fretting could be avoided by deflecting issues customarily approached by critiquing or deconstructing the subject-object 'divide' onto pragmatic inquiry into modes of *continuity* and *discontinuity*. These also are in embrace. Their embrace is operative, not metaphysical or definitional. It is a contemporary proverb that walking is controlled falling. Continuity

embraces discontinuity as walking includes falling. The momentum of walking is the excess of its activity over each successive step. The ongoing quality of walking is that trans-step momentum. Each next step is momentous, in its own little way: it is the event of a caught fall. The catch renews the walking's functional context. The rhythm of falling and catching organizes an indefinite series of varying contexts for the walking-event's continuation.

There are other connecting threads besides affect. The interlocking pre-given levels mentioned earlier as defining the context also have their lines of continuity. These are levels of conventionalized discourse and institutional practices like architecture that are heavily discourse-delimited (following Foucault's analyses). Discursive and institutional practices manage a certain regularity and predictability in the passage from context to context. This contextual continuity is in a different mode from the affective. It pertains to nominal identity. Identified subjects and objects are considered, in principle, to cross the affective gap between contexts essentially unchanged. It is admitted that they appear in the successive contexts in which they figure under continual modification, but the change is understood as occurring within acceptable bounds of recognizability and predictability. This gives their progress the appearance of an ordered, even necessary, evolution (or *history*). The bounds of recognizability and predictability are already implicit in the nominal identities: already discoursed upon and institutionalized; already in place; social givens. Any as-yet-unidentified irruptions that may occur are pre-channelled toward recognition and prediction. They are grasped, pushiness aside, from the docile angle of their *identifiability* as objects or subjects. Their nomination may be a work (or walk) in progress, requiring experimentation, but their contextualization, their eventual induction into already operating discursive and institutional practices of regularization, is a foregone conclusion. The foregoneness of the conclusion is called the march of *discovery*. After all, what is there to history but contexts progressively falling into order?

Besides context? There is situation. There is the unbiddenness of qualitative overspill. There is self-activity qualitatively expressed, presenting an affective order that is not yet 'yours' or 'mine'. There is event. There is anomaly. There are jilted expectations.

All of this can be conventionally dispatched by cleaving expressive quality along an assumed subject-object divide. A share of the liveliness that the quality presents may be apportioned to objects as properties or attributes ('blue' to colour patch and eyes). This share is deemed useful, because its apportionment is verifiable (match-testable) and thus manipulable. The remainder will fall to the subject side, where it may be dismissed as merely personal, lacking in dependable function and in many contexts even of general interest. Affective 'exaggeration' is now contained. One share has been functionalized, the remainder relegated to the tawdry status of a private 'emotion'. The subjective share is conventionally considered arbitrary: fluff to be shucked. Or in extreme cases, to be dealt with by the appropriate professionals.

A passing note: this is where capitalism exceeds objectivity and capitalism's own constitutive links to the technologized knowledge-products of 'hard' science. Even something that is by definition dysfunctional can still be made profitable. Capitalism's genius is not so much its fostering and feeding off of the 'rationalization' of the world accompanying the emergence and dissemination of technology. To valorize technology, all it has to do is extract more value from an already recognized value – a surplus-value from a use-value. Its true genius, and its tenacious staying power, has to do is its capability of absorbing the qualitative remainders of that rationalization: extracting surplus-value from uselessness. This profit-conversion of the functionally residual is the fundamental growth industry of contemporary ('late' or 'postmodern') capitalism. Capitalism fosters and feeds off of both sides of the affective divide. It should be noted that on both sides, capitalism *goes for excess*: surplus-value. The surplus-value extracted from both sides of the cleavage is formally identical. In a certain sense, capitalism *restores the unity or continuity of excess self-activity*. Capital doesn't just valorize technology. It is itself an abstract technology of excess, as qualitative in its operations as it quantitative; as subjectively restorative, in an impersonal, maniacal kind of way, as it is objectively destructive ecologically. But that is another story. Back to the more restrained story under way . . .

Affective cleavage, utilitarian triage, subjective remaindering. The overall effect is to enclose experience in the *determination* of regularized context. Situation submerges. The gap of uncontained affect disappears from view. The world's vivacious charge of indeterminacy recedes into the unperceived from which it came. The world's processual openness, its self-activity, recedes at the same rhythm. Now it really does appear that the only activities in the world are the regularizations of discourse and institution. 'Truth', some will say. Finally, things are usefully named, disciplined to mean what they are and act how they mean. 'Construction', others will retort: all a ruse of power. But 'self-standing *and* constructed'? The 'and' will not stand. Enter the reign of the excluded middle.

Context. History. March of technical knowledge. Useful – if a bit dead. If instead of cleaving the affective line of continuity you cleave to it, if you include the middle of the impersonal, insurgent connecting thread of every 'too', the world takes on a different hue. The line of uncontained affect reinjects unpredictability into context, re-making it eventful. Affect is vivacity of context: situation. Affect enlivens. Its vivacity, ever on the move from situation to situation, strings context-orderings together in eventfulness, holding them together from the angle of what new and unpredictable enters into them. Its context-rocking transsituational drift is the life-glue of the world – a world capable of surprise (surplus-value of being).

It was stated that uncontained affect was a quality of self-activity. The too-blue that was actually perceived was a contextual expression of it. This is 'quality' in a sense closer to the everyday notion of it, as a property attributable to an

object or failing that, something that can still be personally contained. The quality is an integral expression of the world's amalgamated liveliness. It always retains at least a tinge of that liveliness, even when it is propertied or personally contained, in a collectively rigged conscious perception available for discursive elaboration. A quality, by nature, is a perceptible expression of uncontained affect. It always retains a sense of openness – if your sensing and speaking retains an openness to it. Ultimately, the question is not whose? Whose mistake, whose mismatch, whose truth? The question is of what? Answer: *the world's*. Altogether, and openly.

A quality is a perceptual self-expression, an expressive self-perception, of the world's holding-together: its affective self-adhesion. This is a given. We all adhere, impersonally, in a *lived belief* in the world's continued holding-together across its gaps. This belief is 'lived' because it is prior to any possible verification, having been always already experienced by the time it is tested. It is a surplus belief that evidences itself, appropriately, in exaggeration. As a kind of belief that enters conscious awareness only in surprise, it can never itself be the object of a recognition.

Is it accurate to say that it 'enters' consciousness? *Is it not its coming-as-a-surprise that constitutes consciousness?* What are recognized object attributes and owned emotions if not old surprises to which we have become more or less accustomed? Aren't the perceived unity and constancy of the object and of the subject – co-snowballing differentials both – just habitual, even institutionalized, exaggerations? Is recognition anything more than the habit of no longer seeing what's new? Is scientific and technical knowledge radically skewed against newness, for all its rhetoric of discovery?

Belief, as 'ultimate fact' of experience, is in the world's continued ability to surprise. It is our automatic adherence to the world's adherence to its own autonomous activity. Those ol' eyes are blue. This is true. But blue needs more than eyes for seeing. It needs relation – a sight in itself. Altogether, now:

> The sense-awareness of the blue as situated in a certain event which I call the situation, is thus exhibited as the sense-awareness of a relation between the blue, the percipient event of the observer, the situation, and intervening events. *All nature is in fact required*.
>
> (Whitehead, 1964: 152, emphasis added)

A quality is an actual presentation of lived relation. World-glue made visible. See it, be surprised, live it and like it (or not). But don't just emote it. Above all, don't take it personally.[10]

The exaggerated 'too' qualifying experimental blue expressed something besides world-glue: an 'absolute striking color-particularity' or *singularity*. Objectively, colour is traditionally said to comprise three dimensions: brightness, saturation, and hue. Each time Katz asked one of his experimental subjects to

make a match, one of these dimensions pushed itself so forcibly into experience that it falsified the match. Both the chosen test-patch and the retina were blue. But they were not true blue. The memory was a patch of a different colour from the verifiable attribute. The experience isn't reducible to the objective truth of it. Or, the truth of the experience isn't reducible to its objectification (and personification). What 'more' is there? The answer is the same as before: situation. Let's re-answer the question, humouring objectivism by cleaving more closely to its side of things.

What is there besides the objective ingredients of colour? Is it an affront to objectivism to say that there is, in addition to the ingredients, their interaction and its effect? In a word, their event. The event of blue's appearance has something the ingredients themselves don't have: an ability to do without them. The event of the interaction has a certain independence vis-à-vis its ingredients. It can repeat in the absence of any *particular* set of them. *Any* particular set will do. The ingredients and their interaction are generally necessary for the event of colour. Their repeated objective presence – their re-production – defines the *general conditions* of the event. But: there is no general event. There is only *this* event – and *this* one, and *this* other one – none of them exactly alike.[11] Each event is unique. It only stands to reason, then, that the event's general conditions do not fully account for its repetition, as it happens: different at each iteration.

The problem is that the general conditions only account for what is *necessary* for the event to happen. In any event, contingencies creep in. The necessary ingredients are always accompanied by contingent ingredients. The accompaniment of the necessary by the contingent is so unfailing that the surplus of ingredients introduced by contingency must be considered as necessary as the necessities. The singularity of the event is not in contradiction to its generality. The singularity is in necessarily contingent excess over the generality. It is an unfailing ingredient surplus, above and beyond the appearing object's possibility of being certified a true case of its general category – a singularity above and beyond its particularity as a representative of a class defined by the reproducible presence of certain standard objective properties. The general, necessary conditions define the event as belonging to a recognizable class of events. The singular, contingent ingredients give it its uniqueness, its stubbornness in remaining perceptibly itself in addition to being a member of its class – its quality. The event retains a quality of 'thisness', an unreproducible being-only-itself, which stands over and above its objective definition.

Both the test patch and the remembered retina were certifiably blue. This much is true. But there was a singular excess in the retinal memory. This excess of effect was not attributable to any coloured object. It was attributable to the uncontrolled conditions of the memory's emergence in *this* experimental situation. This much 'more' is also true. The interaction of the objective dimensions of blue was *interfered* with and *modulated* by a previousness of familiarity and fondness: by an unconsciously ingredient emotional charge. This affective modulation

was as effectively conditioning of the memory-colour's emergence as the objective properties of the light that might be scientifically confirmed as have been reflected by the friend's retina. Affective modulation was the colour's condition of anomaly. Anomalous is precisely how the blue really appeared. The *real* conditions of *this* repetition of blue included not only its conditions of reproducibility, its objective conditions, its conditions of possibility for being a particular case of a general rule, but also its conditions of anomaly.[12]

The interfering charge of affect invested itself in one objective dimension of colour. It made that dimension stand out excessively: absolutely strikingly. In that surplus standing-out, the affect itself was brought out, for all to know, in the form of a miss. The contingency of the affect's selective ingredience was contextually *expressed* in a surprise modulation of the objective conditions' collective effect. The expression of the affect is what made the colour unmatchably, mistakably 'lively', imbued with *life directly*, *qualitatively perceived*, amiss in conventional discourse.

The example of memory-colour can easily be misconstrued as necessitating just the kind of foundational subject-object split that has repeatedly dismissed as irrelevant here. Even if it is acknowledged that the affect in play was 'impersonal', it can still be argued to have resided in an unconscious of emotional content contained in a single human brain. To construe the situation this way would be to ignore the insistence of the 'more'. Every event, of whatever kind, carries conditions of anomaly. There is always a really-perceived miss in every context. There is always something really amiss in contextualized language use. No anomaly, no thisness: it's as simple as that. The necessary 'more' than objective ingredience is never subjective in the narrow, personalized sense, even when it has to do with emotion. Emotion was able to make the difference (between particularity and singularity) because it made ingress: because it was operating transsituationally, in the gap between its entering the experimental context and its leaving the contexts of previous friendship. It effectively interfered and modulated because it was operating pre-expressively, in the affective manner in which it precedes itself. It had proceeded to phase back into affect.[13]

The fact that emotion figures in any capacity is likely to disqualify this account in many eyes. If there is emotion involved, how could it seriously be argued that the excess is not subjective in a most banal sense? An example from chaos makes the same point, without the involvement of anything personal: that there is a something more than objective ingredients and their interaction that is contingently necessary to the reality of a happening.

In Prigogine and Stengers' analysis of the Bénard stability, a liquid chaotically dissipating heat entering it at certain rate suddenly self-organizes into an ordered population of convection cells. The transition from chaotic disorder to dynamic order occurs when the dissipative system suddenly 'senses' the force of gravity. Up until that point, the influence of gravity is negligible. Suddenly, the dynamic between the liquid's molecules makes them 'sensitive' to gravitational

interference (1988: 59–61; 1984: 163, 165). They have acquired the collective ability to be *affected* by gravity. In response to that new-sensed interference, the interaction changes in nature, passing a threshold from chaotic disorder to turbulent order. A qualitative difference has singularly struck the liquid.

The molecular ingredients were not to begin with open to gravitational influence, either taken individually or en masse (as a collection of discrete elements). It was the molecule's *interacting* that opened them to qualitative change. It was their coming-together dynamically, their unity in movement, that 'sensed' gravity and allowed it to interfere – and that also made 'more' of the interference than a simple negativity or 'perturbation'. The ingredient's coming-together extracted from gravity a surplus value of being, an excess of effect: an emergence of order, a belonging-together in the same event of global qualitative change.

Call the openness of an interaction to being affected by something new in a way that qualitatively changes its dynamic nature *relationality*. Relationality is a global excess of belonging-together enabled by but not reducible to the bare fact of having objectively come-together. Relationality cannot be accounted for by the objective properties of the actual ingredients in play considered as discrete elements. It cannot even be reduced to the interactions that might logically be predicted according to those properties. The order-out-of chaos effect was entirely unexpected by science: a major surprise. In fact, by classical standards, the probability that it could happen is vanishingly close to zero. It is as good as impossible.[14] Yet it happens. Its practically impossible occurrence is and will remain outside the purview of classical laws of nature. This is so even though the 'something new' that interferes with the liquid is as old as can be: an already-operating, scientifically established, general necessity (the previousness of the force of gravity to any interaction of any physical system). The liquid, it must be emphasized, in no way contradicts the objective laws of nature. Rather, it adds a surplus ordering effect to their already-in-operation. It is that surplus of effect that is the 'something new'. The sensing of gravity by the liquid's interaction *adds* effect to its old-as-can-be objectivity, rather than in any way contradicting objective causality. Relationality is the potential for singular effects of qualitative change to occur in excess over or as a supplement to objective interactions. Relationality pertains to the *openness* of the interaction, rather than to the interaction per se or to its discrete ingredients.

The reality of self-organizing relational events in nature requires an expanded notion of causality. In addition to classical, linear causes, operating locally in part-to-part connections between discrete ingredients, there are relational causes operating directly upon ingredients' coming-together – on their dynamic unity. This kind of cause may be termed a *quasicause*, since it concerns openness rather than determination, and dynamic unities rather than parts. It is best thought of as a global surplus of effect, a kind of booster-effect, rather than as a 'cause' in any traditional sense of the word.

The quasicause is the condition of newness or anomaly. Classical, linear cause

pertains to the generally predictable context within which newness irrupts. The laws of classical causality express the 'conditions of reproducibility' of the event in general, or as a particular instance of its general class (in this case, the class of dissipation-events). Quasicause must be added to account for the 'conditions of repetition' of the event as singular, qualitative transition (dissipative self-ordering). Classical cause concerns context; quasicause concerns situation. Classical cause is reactive, in other words active-passive (stimulus-response, action-equal reaction). Its effects are quantifiable and under controlled conditions regularly dependable. Quasicausality is sensitive-affective, or creative (adding a surplus-value to response). It expresses a global ability to sense and be affected, qualitatively, for change. It injects a measure of objective uncontrol, a margin of eventfulness, a liveliness. Objectively causal conditions are general conditions of possibility. Quasicausality is practically 'impossible'. But chaotic self-organizations not only happen, they can be repeatedly induced. What they cannot be is faithfully reproduced. There is always an element of unpredictability, making it uncertain whether the effect will actually transpire in any given case and if it does occur, whether it will be the same or whether a different terminus or 'attractor' will have spontaneously 'captured' the system.[15] That is why 'laws of chaos' are not classically determinist, but must be expressed as laws of probability.

Although the mathematical modelling of chaotic ordering events is probabilistic, the reality of the events they model is not. In science, probability is conceptualized in terms of differently weighted but equally co-present logical possibilities. Quasicausality concerns something very different: practically absent material *potential*. A potential does not pre-exist its emergence. If it doesn't emerge, it's because it wasn't really there. If it does, it really only just arrived. Potential is an advent. It is the contingency of an event in the future imperfect: 'will have' (precessive processing). It just will have come, that's all there is to it. Always, just: a hint of eternity arriving. Before coming, it will have been objectively indeterminate. Really. Not a calculable co-presence of already-possibilities: a *virtuality*.[16] The virtual is not quantifiable. Quasicausality expresses a real, material reserve of unpredictable potential; a virtual 'always just will have' in excess of the possible; a non-objectifiable kernel or qualitative remainder of self-producing impossibility in matter, anomalously apt to irrupt in even the most closely controlled contexts. Surprise. Matter boost. In effect, uncaused. Self-creative activity in and of the world.[17]

This inverts the relation between the general/particular and the singular. Singularity is no longer a particular case inexplicably, and uninterestingly, deviating from its general rule. Rather, the general rule of law generates particularity by limiting singularity. The excess of singularity is primary. Scientific discourse missed spontaneous self-organization and the primacy of singularity for so long because of the controls it classically imposes on its experimental contexts. Self-organization, like emotion, was actively ruled out. The qualitative expression of self-organization was hampered by the assumption informing classical

scientific discourse that only a controlled context, in other words closed context, could generate useful results. A closed context is one in which energy is largely conserved (input equals output). Unexpected ingresses of activity are laboriously barred. Likewise, dissipation is minimized. It's all rigged. And it's true. Closure and control – the rule-generated limitation of the particular experimental context to what appears quantifiable under the sign of equality, to the exclusion of lopsided qualitative anomaly – this is indeed necessary to ensure maximum reproducibility of results. But that is exactly the point: the limitation narrows the results to the reproducible, or to bounds of the possible. To approach potential, other assumptions and other riggings are necessary which welcome ingress and dissipative activity: other truths.

Taking into account the quasicausality or relational causality contingently necessary to self-organization involves a willingness to find in matter itself the incipiency of distinctions more comfortably restricted to the human cultural level: liveliness, context/situation, quantitative/qualitative, subject/object (creative/reactive), sensation/affect (global openness to change). Most especially the latter. There are few things all chaos theorists agree upon. One of them is that chaotic self-ordering depends on a 'sensitivity to initial conditions', no matter how far the system has drifted from its initial terminus. What is this continued openness to being affected by a previousness of process? Is not this enduring 'sensitivity' a connecting thread of affect meandering impersonally through the world? World-affect: life-glue of matter.

This liquid detour enables a further clarification of the notion of affect. From the point of view of a given context, affect is the quasicausal openness of a characteristic interaction under way in that context to sensing 'something new', the arrival or irruption of which is expressed in a global qualitative change in the dynamic of the interaction, to sometimes striking effect.[18] Applying this to Katz's experiment, it becomes all the clearer that the 'affect' in play was not so much the personal 'familiarity and fondness' already felt by the experimentee for the owner of the eyes of blue. These were already operating emotions, personalized contents. The affect was more accurately the openness of the context to an anomalous expression of those emotions.

The previousness of the emotions triggered the uncontainment event. But their trigger ability did not inhere in them alone. Considered alone, as already constituted, they are discrete ingredients among others, but unwanted. They were determined to play a triggering role by the interactive set-up of the experimental context. Their power to enter the context absolutely-singularly-strikingly was due as much to the nature of the interaction under way in that context as by any property they may retrospectively be recognized as already having had. They were determined, by the context, to be undetermined, for the context. Their role as event-catalyzers was rigged by their contextual unwanting. In many non-scientific contexts of everyday life, the same eyes would be no more than musty old part-friends, incapable of the least surprise. It was the scientific will

to exclude emotion from this situation that gave it its irruptive power. No longer in the context of the friendship from which it came, unauthorised entry into the experimental context, the emotion was thrown back into the gap of indeterminacy of the in-between of contexts. It was re-virtualized. The attempt at an interactive exclusion of emotion's ingredience gave it a relational right of return. The flip from regulated interaction-in-context to relational-resituating-event hinged on an unwilled *return of the removed*: revenge of the re-virtual. Nothing in the prepared logic of the context could account for the excess of effect with which the uninvited return expressed itself. The shock of the re-virtualized's return thus figures in the context as an autonomy from it: a mode of self-activity. In better-controlled scientific contexts, the relational effect of emotion would have been successfully ruled out. All resulting activity would then have duly appeared as a predictable effect of knowing context control, attributable by cognitive right to the subject who organized the controls, while at the same time being recognized as a property of matter ('discovery'). In a sense, integrating quasicausal efficiency or relationality makes for a more materialist (if less objective) account than that of science. It acknowledges organizing self-activity as a rightful expression of matter. Matter appears as a self-disclosing activity rather than as a passive object of discovery: a singularly self-disclosing activity passing through context, rather than a general object of discovery whose disclosure at the hands of science is contained in context.

Everything that contributes to how an interaction goes – including what it laboriously isn't, what it attempts to exclude, its attempted mode of closure – is in some capacity ingredient in the surplus-effect of its openness. The asymmetry of language use, the differential of power, the conventions of scientific experimentation and the rigorousness of their application (or lack thereof), the architectural norms of the laboratory, all of these levels of previous determination positively contributed to the affectivity of the Katz colour context, to its situation, by working to close context, attempting to hold potential effects at a remove. The affect that runs into and through the context, in the event, cannot be pinned on a single ingredient. It may well be that a certain too 'lively' element stands out in a catalytic or event-inducing capacity, giving it a privileged role in forcing open the context, in the threading of affect through the world's in-betweenness. But the openness itself is not attributable to that ingredient alone, or to any particular property of any determinate class of ingredients (emotional or otherwise). Only directly relational notions, such as quasicause, interference, modulation, catalysis, and induction, are embracing enough to begin to grasp the effective reality of affect in-and-of the material world: always in contingent return, at a necessary remove.

The still-suspect status of chaos theory in the eyes of the established scientific disciplines may have everything to do with its verging on ideas considered more 'properly' to be of the province of philosophy: relationality, affect, creativity, and virtuality. The whole difference between science and philosophy fits

into the gap suggested above between probability and potential, the possible and the virtual. Chaos theory approaches that gap, coming close enough to intuit that there is something on the philosophical side but steadfastly refusing to make the leap. It approaches the qualitative limit of science, taking painstaking probabilistic care *not* to cross over. It is not the only science to make the approach. Quantum physics and cosmology have for many decades tread on territory dangerously close to the virtual and the anomalously relational. It has already been a century since Poincaré introduced 'resonance' into Newtonian physics, in connection with the infamous forerunner of chaos theory, the 'three-body' problem.[19] Thermodynamics made the approach only three decades ago, with the arrival of Prigogine's 'dissipative structures' (of which the Bénard instability is just one example). The very notion of catalysis comes from chemistry, which has also had to contend with qualitative events of self-organization in such phenomena as 'chemical clocks'. More recently still biology and brain sciences have found themselves in steady approach to relational thresholds.[20] Even acoustics is currently labouring under the non-linear shock of 'stochastic resonance' and the surplus of effectiveness it brings.[21] The list could go. Everywhere for example, there is an operative 'field', from embryology to relativity, relationality is nigh.

Every science, as its observations accumulate and its paradigms complexify, may be expected to approach the qualitative limit of relationality. The virtual is a limit of objectivity, which sciences approach *from within* their own operation. It is the immanent, philosophical limit of science, one every science must and does approach as it multiplies its ability to integrate variables, moving from general laws to greater and greater particularity, coming within striking distance of the singular, in flirtation with event. But it is also a limit sciences must refuse to cross if they are to remain scientific. Which is to say objective. Which is to say dealing with specifiable objects, in their discreteness; then producing dependably reproducible results across a range of actual contexts in which the specified objects may figure (attributing to each particular object in a class general properties more-or-less predictably defining their conditions of possibility, or functional parameters of emergence and lawful interaction); then formalizing those peer-reviewed results in quantitative terms. To fail to recoil at the relational limit is to risk becoming philosophical.

Horror. We know how high an opinion many scientists have of philosophy. Just how widespread and vehement is the hostility can only be taken as an indication that the slide toward relationality is a proximate danger from which science must dramatically save itself. Turn back, yes. Perfectly understandable, where there is a will to science. But why such horror? Is the surplus of hostility toward philosophy really necessary? Or is it an excess of effect? Has philosophy ever really been in a position to threaten science from without? Psychoanalysis tells us that horror is always at an other within. But that is yet another story. The materially indeterminate protagonist of this story may be nonconscious, but it is

not Freud's unconscious. This not about personal fantasy. This is a story of the real and the empirical, and of the really, empirically 'removed'. The 'return of the repressed' is another matter.

The 'real': there's the rub. The philosophy bashing that has become such a blood sport among some scientists justifies itself on the grounds that non-analytic philosophy ('French' for short) and its poor cousin, cultural theory, are anti-realist. This is not the place to rehearse all the reasons why indeterminate is not the same as 'arbitrary'; why relational is not the same as 'relative'; and why contextual irruptions of the qualitatively new are not reducible to 'cultural constructions'. The rebuttals could also go on as indefinitely as the list of horrors thought to have been carried to American shores by the contagion of what it pleases some to call the latter-day 'French disease'. Instead of entering into a tit-for-tat on these charges of degenerative thought-disease, I would like simply to suggest: philosophy, art, even cultural studies, are *empirical enterprises* in effective connection with the *same reality* science operates upon, generating results with their own claim to validity. The astonishingly workable results science regularly generates gives it a well-earned claim to realism and validity. But it does not give it a monopoly on them. This argument is perhaps best developed using the resources of the only home-grown *American* philosophy: pragmatism.

William James had another name for pragmatism: 'radical empiricism'. What makes his empiricism 'radical' is that it considers relations to be givens of experience. According to James, relations are no less fundamentally given, no less directly given, than discrete objects and their component properties.[22] That they are directly given means that they are directly perceived. Relation is immediately perceived *as such*. A relation is not a secondary product of association. According the association theory adopted by classical empiricism, what are given in experience are collections of discrete, unconnected appearances or 'sense-data'. Their connection is added by a subsequent mental operation (following an inductive logic). James counters this, arguing that relationality is already in the world, and that it registers materially in the activity of the body before it registers consciously. This is the sense of his famous dictum that we do not run because we are afraid, but that we are afraid because we run. We become conscious of a situation in its midst, already actively engaged in it. Our awareness is always of an already-ongoing participation in an unfolding relation. It is only after we have stopped running and can look back that we are clearly cognizant of what it was that set us dashing. Participation precedes recognition. From this point of view, the surprise coming-to-consciousness of the too of Katz's blue is much less the anomaly. It is in fact the norm. Awareness always dawns as a fright, surprise, pain, or shock, of varying intensity, from the mildest (most habituated) to the severe.

Participation precedes recognition: being precedes cognition. The separately recognizable, speakable identities of the objects and subjects involved in the unfolding event come into definition only retrospectively.[23] In the event, they are

inseparable from the immediacy of the relation. Their coming-together precedes their definition. And it is their definition that culminates the event: only after it has run its course can the situation be fully contextualized, accurately determined to have been a particular case of a certain general class of happening. Coming-together, or belonging-together, takes logical and ontological precedence over discreteness of components, and in particular over the subject-object separation. Subject and object are embedded in the situational relation in a way that cannot be fully determined in advance. As long the event is ongoing, its outcome even in the slightest uncertain, their contextual identity is open to amendment. In other words, they are embedded in the relation as the real potential to be exactly what they will have effectively become when the event will have run its course. Their identities figure virtually.[24] Chances are, when all is said and become, the subjects and objects involved will be largely what they were in previous definitions. Largely the same, but with some difference – if only by virtue of their having come to be themselves *again*. They will be at least as different as last is from next.

The point is that the being that precedes cognition is always actively engaged in a defining actualization of potential. It is a being in becoming. As such, it carries a certain vagueness. The vagueness is the way in which potential presents itself in the unfolding of experience. The degree of vagueness corresponds to the margin of uncertainty in the situation. It carries over into the actual outcome of the event as the difference the event will have made in the identities of the subjects and objects that have come together in it: their share of 'newness'. The vague is the newness, the 'nextness' of what will be again – but already, as it is under way. It is the difference in the *process* of repetition. It is the perception of continuation. It is what relation looks like in action. This is not the kind of vagueness that can be reduced to a simple lack of information. It is constitutive. It is existential. It is a being on the way to identity (again). Every experience, as it happens, carries a 'fringe' of active indetermination. Experience under way is a constitutionally vague '*something doing*' in the world. Something-doing is a participation that is logically and ontologically prior to its participants: the doer and the done in their separate, contextualized identities. It is a coming-together prior to the divisibility of its own components. A being-in-relation prior to the cognitive terms of the relation.[25] Something-doing is what was described earlier as 'lived belief'. The difference it makes as it unfolds in context is experienced as a quality of liveliness striking the context as a whole. Objective 'properties' are knowing containments of the lively. With the right organizing effort the 'something' doing the new can almost always come to be defined as an added class of object with its own particular complement of properties. The vague is open to determination.

If being-in-becoming precedes cognition, then the determining procedures of science jump in at a certain point in the world's already-under-way-again. Scientific endeavour begins in the after-strike, at the point when enough distance

from the situation's liveliness can be taken that it becomes practical to *suspend lived belief*. The inaugural gesture of science is the suspension of lived belief.

If scientists are heroes in a horror story, as some of the most militantly anti-philosophical like to think, then what they do starts when the running stops. Science kicks in when the frightened protagonist has dashed far enough ahead that he can *look back* and wonder what he saw. Alien? Mutant? Philosopher? I didn't recognize it. But I feel safe now. Time to plan. I rig things so that I may come to recognize it. I track it, bait it, and eventually trap it. Then I pinch it, probe it, and in the end dissect it. Laboriously, bit-by-bit, I cobble together an identity for it. The next time a monster is sighted, I run *toward* it, with new-found confidence. Now I know. I can recognize it. I can say whether the next one is the same as the last. I apply the identity I produced to test my recognition: match or mismatch. I eagerly share my observations. Others using the same methodology confirm my findings. The results of the investigation are reproduced and verified. Now preventive measures can be taken to save the planet from invasion.

There is one catch in using this horror story to retell the philosophical story this essay set out to narrate. Philosophically, the world is the monster. The monster is not an invasion from outer space, it is an ingress from immanence: an emergence from or surprising self-disclosure of the world's already-in-process. The flight is of course also in the world. What scientists do when confronted with the world's relational surprises is more like running in place than running away. It consists in cleaving to a limited, and limitative, trajectory. When a surprise arrives, the scientist is already looking back. Her store of accumulated knowledge, the availability of techniques and methodologies, and the corroborating company of her peers place her immediately in a posture of confidence. The surprise has been converted into an anticipation of recognition: this shall be known, following these steps . . . Scientific method is the institutionalized maintenance of *sang froid* in the face of surprise. Properly scientific activity starts from a pre-conversion of surprise into cognitive confidence. Science takes off from a priori posture of recognizability: a knowledge-ready pre-contextualization of any and every situation. From there it runs through reproducibility of results to utility (saving the world from its own lack of boundary control). In the best of all possible worlds, it continues past making-useful, or functionalization, to the point of profitability. At profitability, science passes a threshold. Now it is science that becomes something new: capitalized technique, technologization, with all its spin-offs. Beyond functionalization lies intensive capitalization (which as we saw entertains a privileged connection to the patently useless and unabashedly excessive that is as foreign to scientific activity, as it officially defines itself, as philosophy is).

Science confidently jumps into the world's ongoing downstream of relation, and stops shy of its excessive expressions of self-activity as it appears in and through context. Scientific recognition is not extended to excesses of effect such as too-blue, except to the extent that they are containable in an old identity or if a new class of nominal identity can be produced to render their monstrosity

recognizable after all. Otherwise, they are discounted as irrelevant and even lacking in reality. The trajectory of science stretches from the worldly step just after quasicause to the step before quality; from just after unquantifiable potential to just before the supernumerary expression of excess reality; from just after the virtuality of having-been-already-in-relation to just before extra-being, amiss in the orderings of conventional discourse; from just after the ingress of affect to just before its missed qualitative expression jumps context.

It was said earlier that every mode of knowing was a 'process line' running between 'termini'. It was also said that affect or relationality was the immanent limit of science's processing ability. It is now apparent that science also has an outside limit, in what has been termed 'quality'. If we take 'empirical' in its etymological meaning as 'experienced'; and if we accept that relation is directly if impersonally experienced; and if we remember that consciousness is a verbose staging of the missing-in-discourse of also-sensed quality – then it becomes evident that science is operating in a restricted empirical field. It is choosing a limited itinerary between carefully policed processual termini: recognizability and functionalization (determinable factoid and fully determined bare fact). It cannot surpass these limits. Where it surpasses itself is in the afterlife of its own products: the many eventful spin-offs attendant to the dissemination and implantation of the capitalizable techniques it 'discovers' into the world's every available relational niche. Where science continues is into the world-imperialist movement of capital. Through capitalization it flows back into a transsituational world-tide of manic self-organizing activity reunifying excess-effect in an impersonal-subjective mode again. In a way, capital is the 'return of the removed' most successfully haunting science. You need only listen to the vehemence of the protestations that scientific research remains 'pure' in spite of the ubiquity of corporate financing to understand both how much of a danger capital represents to science's self-definition and how integral it is to science's continuation. The more vigorous the attempts to remove capitalist modulation of research, whether by wishful thinking, vociferous protest, or increased vigilance in the application of the scientific method, the more strenuously it returns, by virtue of the thoroughly 'mangled' relational situation of science.

Processually, science is defined by two limits it cannot cross in principle, and one threshold it cannot but cross to the precise extent to which it succeeds at its own self-assigned task of functionalization. Continually crossing its threshold, it becomes self-consciously other than itself in a way that enables it to do more of what it does best, as a portion of the profit its successes generate is fed back into it as funding for research. Pointing out science's self-limitations is not an accusation. It is in fact an acknowledgement of its ability to define itself as a self-organizing process. Pointing out that it crosses a threshold of becoming-other that sets in a motion a feedback effect of corporate complicity is not necessarily an accusation either. It is a realistic reminder that the rightful autonomy of science is not a 'purity' or watertight enclosure but an 'autonomy

of connection' subject to modulation (no autonomy is ever a purity of disconnection – other than that of death). Science generates results by imposing controls designed to close its contexts as much as methodologically possible. But the results of its own method, the very effects its closure enables it to produce, flow back around to create a qualitative global situation that makes reopening ingress into and interferes with its every contextual exercise. You don't need to visit many laboratories to discover that funding looms large in scientific gossip. In spite of all of this, pointing out the limitations and thresholding of science is a roundabout way of testifying to its processual staying power – its ability to remain its own activity even in connection with ineluctable processes whose operative bounds encompass it.[26]

Another way of stating the processual parameters of scientific activity is to say that it trips in at the first glimmers of particularity as it emerges from the singularity of the event, and carries through to the point that a general, quantitative formulation of the particular's conditions of possibility is developed (within a structurally stabilized, institutionally guarded subject-object/knower-known framework). This implies two things. First, if you allow a role in your story of the real for singularity on the one hand and for its expression in quality on the other, then you are confronted with an *expanded empirical field*. The classically empirical assumptions and methods of science operate selectively in a limited range of empirical reality. The question then arises as to what modes of knowing can connect with the regions of empirical reality science studiously leaves out, and to what effect the connections can be made. Second, it becomes hard to argue that science has a monopoly on understanding nature. In fact, it can be argued that science *misses nature by design*. From the very beginning, science operates in investigative contexts that are highly culturally, socially, and economically pre-determined. Anything unforeseen that transpires has made forcible ingress. From the moment a newness irrupts, procedures already ready-at-hand clamp down for the knowing capture. The scientific process line thus inaugurated is a co-function of the cultural-economic-social pre-determinations and the determinability of the ingressive. What is the qualitatively transformative force that makes social ingress? Is it not nature? What is nature 'in itself' if not the world's dynamic reserve of surprise? The 'real'? *Nature in itself is the actively indeterminate*. The moment it begins to come out of itself, it has made social ingress. Scientific activity begins at a point at which nature has made social ingress and is already on the road to some form of determination. As Bruno Latour strenuously argues, the 'raw' objects of science are already nature-culture 'hybrids'.

Science is not the only nature-culture mix that begins at this same point. Habit does also: habits contracted by the body (as basic as looking or reaching). 'Normal', everyday knowing begins at exactly the same point science does. Every ingress meets a habitual reception. The 'surprise' that has been repeatedly invoked in this essay is the effect of a miss in habitual reception. The cognitive miss or mismatch is preceded by a pre-cognitive failure to recognize. The

processing of the ingress-event begins to trifurcate at that point, where recognizability becomes an issue. Following one path, it runs into common sense, anecdote, and gossip. These are practices of language whose job is to rehabituate the shocking: to give it at least an air of recognizability (if not always usefully making it understood). This terminally factoidal route is the discursive equivalent of a collective sigh of relief. Following a second path, the ingress runs into more cognitively elaborated, but still more or less informal, knowledge practices producing semi-facts that in their own context have a recognized use-value. Finally, it may take a turn down the royal road of science, toward the cognitive sanction of full and formal factual determination: official recognition. Habit lies at the hinge of nature and these divergent process lines of culture. Habits are socially or culturally contracted. But they reside in the matter of the body, in the muscles, nerves, and skin, where they operate autonomously. Although they are contracted in social/cultural context, they must be considered self-active autonomies: spontaneous self-organizations that operate on a level with movements of matter. But in that case can't the self-organizations of matter described by chaos theory also be considered habits? Aren't they inhumanly contracted habits of matter? Habit is at the matter-hinge between nature and culture. But where is the hinge? Is there a difference in kind or only a difference in mode or degree between the inhuman habits of matter and the human ones?

There are incipiencies of cultural hinge-activity everywhere in 'nature', in the even the brutest matter. The border between nature and culture is actually unassignable. This is why science must make so strict a procedural cut-off point at a certain level: that of recognizability in specific-controlled social/cultural contexts lending themselves to certain regulated modes of discursive elaboration. As a matter of fact, the 'strict' cut-off point is an indistinct gradation: a continuum. Science may be able to suspend the liveliness of lived belief. But it cannot suspend habit. And it cannot acknowledge that it cannot suspend it. The *nature-culture continuum* is the ultimate 'removed' of science: the material heritage or 'archaeology' science cannot acknowledge if it is to place itself confidently on the all-knowing-human-subject side of a divide from the natural 'object'. Because it cannot acknowledge it, it leaves itself open to modulation by the removed's return, for example, in the form of capitalist interference. Capital's power to make ingress into even the most closed scientific contexts rides on its ability to operate more and more directly with and upon the nature-culture continuum, as the capitalized technique more and more intensively rejoins the self-organizing levels of matter, the very levels at which nature contracts its incipiently cultural, inhuman habits (biotechnology being the most obvious example, but by no means the only one).[27]

If the border between nature and culture is actually unassignable, then what authorized the preceding reference to nature 'in itself'? The key is 'actually'. If nature is the actively indeterminate, then 'in itself' it is virtual. But there is still a problem: the virtual does not exist. It comes into being, as becoming. Its

'nature' is to come to be: to make ingress. Its ingress injects potential into habitual contexts. Nature is not really the 'given'. It is the giving – of potential. The giving always holds back from what it gives, so that it does not exhaust itself and can come to give again. Nature always holds itself in iterative reserve. Its continually repeated holding-in-reserve might be considered an 'in-itself'. Except that 'it' is not. 'It' is not an object, but a reserve of relation, a surplus reserve, for the giving. In the end, nature is not well described not as an 'in-itself'. It is an *of-itself*. It is partitive, giving always *of* 'itself' – of relational potential – while holding back a remainder on which to draw again. 'Of-itself' – and 'more'. This is Spinoza's 'naturing nature': nature as an inexhaustible, impersonal reserve of giving self-activity. Naturing nature is 'subjective' nature, if that word can be used in a sense prior to the actual distinction between subject and object: a radically inhuman 'subjectless subjectivity' as endlessly generous in its giving as capitalism is manic in its taking (if capitalism culturally rejoins nature, it is with a change of polarity). Something's doing in the expanded field.[28]

Nature is partitive. Science (like every actually determining process) is limitative. The expanded empirical field within which science sets its limits broadens to include relation. As argued earlier, the real world is not reducible to its necessary conditions, or conditions of possibility or reproducibility. The 'real conditions' of any event include anomalous or necessarily contingent 'quasi-causal' efficiencies. Call necessary conditions *requisites*. Call everything that effectively enters the event but cannot be reduced to requisite part-to-part causal interactions between discrete ingredients an *accompaniment*. This is Whitehead's plea for an expanded empiricism:

> Everything perceived is in nature. We may not pick and choose. For us the red glow of the sunset should be as much part of nature as are the molecules and electric waves by which men of science would explain the phenomenon . . . The real question is, When red is found in nature, what else is found there also? Namely, we are asking for an analysis of the accompaniments in nature of the discovery of red in nature.
>
> (Whitehead, 1964: 29, 41)

When too-blue is found in the laboratory, what else is found there? This essay began by asking for an analysis of the accompaniments in nature-culture of the self-disclosure of excess liveliness in the laboratory.

'What we see', Whitehead concurs, 'depends on light entering the eye'. Light is a requisite of vision. But there's a hitch: 'we do not perceive what enters the eye'. 'The wave theory of light is an excellent well-established theory; but unfortunately it leaves out colour as perceived' (1964: 27, 46). Whitehead is referring to effects that can only be explained relationally. The classic examples are colour complementarity, coloured shadows, and spectral halos. These are whole-field effects irreducible to part-to-part interaction between discrete

elements.[29] The objective colour-dimensions of hue, saturation and brightness that can be defined in terms of wavelengths properties of light cannot account for the full range of real colour-experience. The scientific truth of light accounts very well for the possibility of colour in general. But the reality of colour extends to objectively impossible effects of relationality, as they figure in *this* perception . . . and *this* one . . . and *this* other one. By shunning those singular quasicausal effects, science usefully limits its empiricism. It pays a price for that functionality: the glow. The glow does not exist for it. The unique colour-quality of a sunset does not exist for the scientific observer. But then what can you do with the glow of *this* sunset anyway? Just wonder at it.

Wonder. This is where philosophy comes in. Philosophy is the activity dedicated to keeping wonder in the world. It has its job cut out for it, drowning as we all are in a techno-sea of utility and profitability. Philosophy, then, starts with accompaniment: the perceived effects of relational quasicausality.[30] It starts with the glow. Or the too-of the blue. Understood specifically as whole-field effects. That is philosophy's first terminus, the point of departure of its process line. It works back from there, 'against the stream of perception' as Bergson used to say, toward relationality 'in itself'; toward the virtual. Philosophy is a labour of decontextualization. It distils singularity from its contextual expression. It subtracts the relation from its actual terms. After it has distilled the relation, philosophy goes on to connect the singularity with another similarly decontextualized singularity, distilled from other contextual expressions. Its second terminus, its point of arrival, is the connection between singularities. Philosophy makes virtual connections: pure *linkage* without the links.[31] Its process line is for the production of transsituational linkage, or *affect*. This is what Deleuze and Guattari mean by 'consistency'. A philosophical concept, they say, doesn't have an object. It has only consistency: pure holding-together (minus the held). Its 'object' is the gap between contexts into which the world's self-activity recedes as it pushily continues-across on the way to a next ingress. The activity of philosophy is the thinking of the reserve of context-rocking potential. It is the activity of rejoining the resituating movement of the new – through a decontextualizing counter-current of thought. It is human thought endeavouring to flow back on nature's self-activity.

Running counter as it does to the actuality of contexts, philosophy is an *anti-history*. It is the affirmation of the transsituational potential that runs through history and is contained in it, but never without remainder. Its not-an-object is the indeterminate excess of self-active, connective potential continuing through and renewing history. Without that potential-injecting trans/connective flow history would only be able to repeat its own bare fact. It would be self-identical. Unmodulated. It would simply lack the relational resources to qualitatively self-differ in its order of repetitions. In other words, it wouldn't be history at all. It would be all order. Stasis. Nothing doing. Philosophy runs anti-historical in order to flow back on the *life* of history's iterative self-ordering: its eventfulness. Philosophy's non-object is change. It is the counter-thinking of the new.

Philosophy engages with history to attain its *nature*: the reserve of surprise lurking inhumanly in history's gaps of renewal.[32] Philosophy is *nature philosophy* by vocation. It is nature philosophy when it is doing what no other knowledge practice cares to do; when it goes where no other can go, due to the self-policed limits it processually observes. It was just asserted that nature is as a matter of fact the immanent limit of scientific knowledge. Philosophy operates at that immanent limit. It continues where science turns back. As the references to history implies, the 'science' whose immanence concerns philosophy must be broadly defined. 'Soft' sciences modelling themselves on the 'hard' sciences in key ways are included. 'Social' or 'human' sciences that aspire to be quantitative; or even if they describe themselves as 'qualitative', that claim any form of predictive validity for their results; that claim to produce verifiable truths about actual contexts; that operate with notions of causality privileging part-to-part interaction between ingredient elements; that think of their elementary units of description as having determinate properties prior to the event of their coming-together; that see themselves as usefully expressing what is necessary to the world; that consider thought to begin with conscious object-recognition; in short, that adopt a classically empirical view of reality, whether implicitly or explicitly – these are included. Philosophy wonderingly parts company with them all.

What philosophy tries to articulate are *contingencies*: potential relational modulations of contexts that are not yet contained in their ordering as possibilities that have been recognized and can be practically regulated. Philosophy's back-flow is to a point of pre-possibility. It is a form of *contingent reason* whose '(non) object' is the practically *impossible*. The impossible is not the opposite or simple negative of the possible. It is the indeterminate but positive potential for possibilities to be added to particular contexts. This can only occur through a qualitative excess-effect of the kind discussed earlier in relation to the Bénard instability. The impossible is potentialized when interactions sense themselves open: when, to use Derrida's term, an unpredictable margin of 'play' strikes a singular coming-together, for more (or, to use the vocabulary suggested at the opening of this essay, when relation and genitivity go together). What actually takes effect as the situation plays out its potential is the *emergence* of a possibility. What has transpired is that a potential has actualized. A positive indeterminacy has come to be a determinate possibility. Actualized potential may be automatically captured by habit, and from habit may pass into language to become one of the acquired attributes and contents whose discursive dissemination pre-determines context. An actually captured potential is an acquired possibility: a recognized permutation captured in matter and functionally contained in an already-operating order. Possibility is function-ready enculturated nature, from the iterative moment of its first emergence.

Just as science pays a price for recoiling at its relational limit, philosophy pays a price for following its own vocation to approach it. Since philosophy only allows

itself a virtual non-object, it is an utterly *speculative* undertaking. Its moving against the grain of nature's cultural expression is a highly artificial movement of thought. It is an utterly contrived thought-fiction. Specifically, since its fiction concerns the impossible, it is a *fable*. The nature it rejoins is frankly fabulatory. It is pre-functional. Thus attaining it is a supremely useless gesture. Philosophy makes itself useless to the exact extent to which it succeeds at its self-chosen task. It is the glow of understanding (without the *actual* understanding). The sunset of practical reason – with an uncanny resemblance to its dawning.

A philosophical concept can make no claim to correspond to anything real. But it can claim to *be* something real. The 'empirical' was taken earlier in its etymological meaning of 'experienced'. James was cited as having argued that relations are directly sensed alongside their actual terms, and in a way irreducible to them. For James, relation is directly sensed as a 'fringe' of ongoing, a residue of potential or newness marginally accompanying every determinate perception (the virtual as it actually presents itself). Philosophy is the movement of thought to the virtual fringe of things. It is the labour of making relation 'more' sensible; of making the 'more' of relation sensible, in a movement occurring purely in thought, logically prior to the point at which relation has actual terms. Its terminus of departure is quality, the virtual as actually presented in the fringing of given contexts. Its terminus is the reserve expressed by that 'moreness'. In other words, philosophy rigs thinking to make singular connections in fictional *anticipation* of their actualization. It is fabulously portentous (which is why it was earlier implied to be close to science fiction, which as a genre specializes in straddling the divide between hard science and speculative philosophy). The portentousness is *thought itself becoming sensible*: however systematic or precise is its logic of consistency or pure linkage, philosophy's non-object remains ontologically vague: vague by nature. Philosophical thinking, even (especially) the most rigorous, is a conceptual *groping* of potential-to-be.

Katz's experiment drew attention to the fact that the dawning of consciousness is always collective and expectant – that experience becomes personal socially, when something absolutely-strikingly-singular has irrupted in context in way that is just asking to be determined. Awareness dawns in a collective, expectant reception of something whose entry into context has preceded its possibility of being determined. Expectant reception: wonder. Consciousness dawns amiss in wonder. In a very real sense, any act of wonder is already a philosophical act. Wonder is pre-philosophical, in the same way that habit is pre-scientific. Science formally prolongs habit (the reception of the new in an a priori mode of recognition). Philosophy speculatively prolongs wonder (the remainder of surprise persisting across its a priori capture by habit). The thoroughly collective nature of any event of consciousness authorizes Deleuze and Guattari to say that although the prolonged wonder of philosophy has no object it still has a subject of sorts. Philosophy addresses its thought-sensed non-object to the collectivity capable of determining it. That collectivity is as anticipated as the potential

self-activity dawning for it. Philosophy addresses itself to a *community to come*. Or as Agamben (1993) says, a coming community: a community in potential ingress.[33] Philosophy has no object, but it has a virtual subject. It is portentous, but never predictive, for it must wait for the coming, collective determination of the community. Philosophy is forever in suspense. In many societies, philosophy is practised as the most intensely solitary thought-activity to which a body can lend itself. This only pushes it deeper into collective suspense. The farther it recedes bodily from its subject, the more intensely it approaches it virtually.

Philosophy is gloriously useless. But it can feed into useful activity. If science makes recognizability useful by preparing closed contexts, it stands to contingent reason that by preparing an openness of contexts to each other the potential portented by philosophical speculation may actualize, adding determinate possibility to the world. This would involve tweaking the regulated connection between contexts, their already-ordered interaction, in such a way as to reopen their coming-together to a relational quasicausality. The result would be an excess self-organizing effect, as the intercontextual order readjusts itself around the shock of the new, possibilizing the surplus of potential that has vaguely presented itself by contracting the new habits and discursive contents, even new discourses, that will determine what will have been when all is said and become. This amounts to a whole-field modulation of the nature-culture continuum – a qualitative shock to the world-historical system (or at least a connectively autonomous region of it). The groping of philosophy will have given way to pragmatic tweaking, a hands-on experimentation in contextual connectivity. The modulation that occurs will not resemble the pure, virtual linkage produced by the counter-contextual movement of philosophical thought. When it re-enters the contextual realm, the consistency of the concept will be necessarily inflected by the grit and friction of the already-actual outside philosophy. What the effect will turn out to be will be functionally determined as contextual orderings already in operation adjust their comings-together under its ingressive impetus: as they *resituate* themselves. By its very (ontologically vague) nature, a philosophical concept is incapable of serving as a model of resemblance for actual objects and interactions. It can take actual effect only in self-differing. There is only one word for the activity of using philosophy's offer of resituating self-difference to produce global self-organizing effects: *politics*.

Politics is philosophy continued by other means. Correction: an exploratory politics of *change* is philosophy pursued by other means – a radical politics equal to the 'radicality' of the expanded empirical field itself. Radical politics is an inherently risky undertaking because it cannot predict the outcome of its actions with certainty. If it could, it wouldn't be radical but reactive; a movement dedicated to capture and containment, operating entirely in the realm of the already-possible, in a priori refusal of the new. Radical politics must tweak and wait: for the coming, collective determination of the community. Its role is to catalyze or induce a global self-reorganization: tweak locally to induce globally

(to modulate a slogan). Speaking of slogans, repeat this one: 'be realistic, demand the impossible'. Under what conditions could that be a formula for a *political empiricism*?

It is precisely when nature philosophy becomes politically useful that it ceases to be itself. Just as science crosses a threshold when it feeds into technological 'progress', so too does philosophy when it lends itself to radical politics. As Deleuze says, agreeing with Foucault, a philosophical concept may be a 'tool'. But it becomes a tool only after it has been picked up by non-philosophical hands actually engaged in collective experimentation. Philosophy needs non-philosophy to make an actual difference in the world. Non-philosophical context is the point of departure to which philosophy differently returns. This is the pragmatic problem of the philosopher referred to earlier.[34]

Philosophy can be useful even when kept at arms length. Even to science. It was asserted earlier that chaos theory is an instance of science approaching its immanent, relational limit. When it first emerged, chaos theory went through a heady period of public basking in the philosophical glow. But it almost immediately pulled back. Most scientists engaged with chaos theory have precious little patience for the philosophical preoccupations still very much in evidence in the current work of some of its founders (in particular, Ilya Prigogine). The scientists who recoil at the danger of becoming-philosophical are hard at work at the task of bringing chaos theory back into the scientific fold in as unambiguous a fashion as possible. This involves formally quantifying the uncertainty factor inherent to self-organization, and building on that formal basis some manner of reproducibility of result or predictive value. Functionalizing chaos in this way is a challenge. The only way to quantify chaotic self-organization, given its native uncertainty, is in terms of probability. The return of chaos theory to the scientific fold requires learning how to make probability useful in a dependable way. This is already occurring in a number of scientific domains, and in not a few cases results are already reaching the stage of technologization. But isn't the unexpungability of probability a niggling philosophical issue tagging along with chaos theory even as it returns to its fold? Probability is a mathematical expression of the practically impossible. Its formal insistence in scientific modelling is an unacknowledged testament to the world's relationality: to the 'many-body' reality that interactions between discrete elements tend naturally toward an openness of outcome expressed in qualitative leaps in mode of activity. However rigorously scientific chaos theory manages to become, it will still carry a philosophical after-glow, radiation burn of the virtual.

It was stated earlier that every science tends inexorably toward its immanent limit of relationality, from which it must periodically pull back in order remain its own activity. This applies to 'soft' sciences as well as 'hard'. All science is philosophically modulated at a distance, from within its own self-defined process line, following its own self-professed movements of approach and repulsion. Science suffers a fatal attraction to philosophy. It needs philosophy, like a poison that

leaves you stronger if you survive it. Philosophy needs science also, in its own way. Philosophy starts from accompaniment (whole-field effects). Accompaniment is what tacitly remains after the requisites are scientifically spoken for. Accompaniment and requisition are reciprocal. This means that philosophy depends for its starting point on science's power to define its own contents. Philosophy, modest activity that it is, gets the leftovers. It doesn't complain though, so wondrous are the sunset scraps. This is to say that nature philosophy must be as scientifically savvy as it can be if it is not to 'miss' its own qualities. It cannot afford to maintain a simply negative or critical stance toward science. It must remain informed of where the bounds of ordered interaction and its functional reproduction have been scientifically set.

Science and philosophy are symbiotic activities. They naturally, continuously feed into each other, in different ways. Science definitionally modulates philosophy's point of departure. Philosophy modulates science across its horrified recoil at its point of no return. Science and philosophy processually complement each other, even in times of declared 'war'. There are not 'two cultures'. There are two (actually many) process lines plying the same nature-culture continuum. Both 'sides' should accustom themselves to the idea of sharing their reality. In any case, that is what they are already engaged in.

The empirically real was defined by its basic etymological meaning of 'sensed' or 'experienced'. To be sensed or experienced is the same thing as having effects: registering a difference elsewhere. The measure of the empirical field is *effective reality*: the ability to make a difference. The point was made that there is a necessarily contingent surplus of effect over cause. Deterministic *causal reality* only covers a portion of the empirical field. Any activity that is capable of producing effects has a claim to empirical reality, and to a mode of validity corresponding to its manner of effecting: to a certain truth-value. That truth is the *power* to produce effects is the pivotal insight of pragmatism.

Philosophical speculation has just as much a claim to empirical truth as science does. It just has a different claim to it. A philosophical concept is true to the extent that can help catalyze change in a movement of ceasing to be its useless self. Its truth is in giving itself up – something science will never countenance for its own part. The real issue between philosophy and science is not the 'relativity' of truth. It is the *plurality of absolute truths*. By 'absolute' is meant simply 'without resemblance', 'comparable only to itself'. Each process line of knowledge plies a unique trajectory through the empirical field, bringing different dimensions of its ceaseless self-activity to pragmatic expression in a way specific to that line. The 'success' of the effects a process line produces can only be judged by its own performative criteria: its way of making 'something doing' something done and determinate. One process line cannot judge another. Process lines can interfere with each other. They can modulate each other. They can capture each other's effects and convert them into more of their own. But they cannot judge each other because they are doings immersed in the empirical field, not

'reflections' of it. There is no neutral outside of shared empirical reality in which to stand in final judgement of its divergent coursings. What a process line of knowledge production does 'corresponds' only to its own activity. When one claims to judge another's truth, it is trying to impose its own activity where it isn't doing. It is not engaging in a noble act of impartial knowing. It is declaring an imperialist war of cognitive cleansing. The 'judgement' is tantamount to an interdiction of existence based on a refusal of empirical difference: this becoming should be mine or should cease; its effects should not be here or how they are; there is not enough room in this empirical reality for the both of us – so get out of my world. This kind of gesture is an attempt to substitute *moralism* for politics. For if process lines can only really interfere with, modulate, and capture each other's effectiveness, then their interaction is always political: a catalysis, battle, or negotiation. Morality attempts to cover up the political reality with an annihilating fiction of one true way of doing something.

A common way of going about this in the name of a universal 'we' that is a thinly disguised assertion of a restricted 'we's' exclusive right to existence based on monopoly-access to the 'laws' or 'principles' 'behind' empirical reality. A strange 'empiricism', isn't it, which claims to act exclusively on behalf of law or principle? What are laws and principles if not *beings of reason*? Any knowledge practice that posits laws behind empirical reality in fact constitutes a strange mix of rationalism and empiricism. Both Hume, the inventor of empiricism, and C. S. Peirce, the inventor of the pragmatism further developed by James, argued that nature does not follow laws. *Laws follow nature*. What nature does is generate surprises and contract habits. Laws come after.[35] They formally model the already-contracted habits of nature in a way that makes them humanly useful. The 'laws' of nature are functional end-products of science. They do not 'correspond' as such to anything 'behind' nature. Nature only goes one way: into *this* world. It has no determinate behind. Laws are human, contextual creations: effective fictions fit for useful service. This is in no way to suggest that scientific laws do not have *general* validity. They are laboriously tailored for validity in as broad a range of contexts as possible. None are valid in all contexts (even Newton's foundational laws are valid only at a certain scale, for energy-conservative systems). But scientific laws are generally true to the extent possible. Their in-bred tendency is to extend themselves to every possible context. However generally they extend, their well-established truth does not exhaust the truth of a single one of its applicable contexts. Simply because every context is struck by singularity. Generality and possibility are not the only things doing. It is precisely by general *extension* that laws miss the really felt *intensity* ('vivacity') of events.

If laws are effective fictions, it appears that philosophy is not the only fabulator. It is just the most 'radical' in its fabulations. The most fabulous thing about law-giving science is that it so easily substitutes the models that it itself so laboriously produces for the more encompassing reality in connection with which it

produces them. That reality is necessarily more encompassing simply because it includes the scientist's activity of formulating laws. Science, like every activity, is *in* the world. Science cannot claim to speak for an 'in-itself' out the far side of the empirical reality science itself is immersed in. Claiming the privilege of an outside perspective *on* the world is religion's fictitious job. It, too, labours extremely hard to maintain its stance. Science is really only in a position to claim for itself a *share* of nature's surprise-giving 'of-itself'. A most powerful share, but a share nonetheless. If it takes its claims too far for 'of-ness', it is at the price of becoming-theological – whether it cares to admit it or not.

Case in point: the classical-empiricist fundamentalist Edward O. Wilson (1998) states what would appear to be the consensus view of 'science warriors' outraged at the current 'excesses' of humanities disciplines. He invokes a universal 'we' sharing the 'common goal of turning as much philosophy as possible into science' (p. 12). Franco-diseased philosophy and its co-carriers of plague, 'post-modern' art and cultural studies, he is confident, will 'wink out in the dimensionless dark' like 'sparks from fireworks' (p. 44). Their demise will be the soon-to-be released 'theory of everything': the reductive law to end all thought-infraction. The empirical science defended by warriors like Wilson and Alan Sokal (with far less intellectual engagement than Wilson) is a sometimes viciously moralizing *rationalist empiricism* which, aspiring to a supreme principle, slips into a becoming-theological even when, as in Wilson's case, it is self-avowedly atheist. The tacit becoming-theological of rationalist empiricism is not so implicit in other scientist's writings. The most revered guru of rationalist empiricism is Stephen Hawking (1988). He claims outright that when science has finally completed the difficult construction of the Theory of Everything (TOE) 'we' will finally 'know the mind of God' (p. 175).[36] TOE: where empirical scientists turn podiatrists of the soul.

By Wilson's own contradictory admission, the glowing 'dimensionless' darkness that horrifies him has at least three dimensions: philosophy, art, and cultural studies. To bring this philosophical story to a close, it will be necessary to consider very briefly how the other two dimensions of non-scientific 'darkness' process reality.

Philosophy operates at the immanent limit of science, 'downstream' of its beginning terminus in recognizability, approaching nature's of-itself. What operates beyond science's outside limit, its end terminus in reproducibility? This is the empirical region of quality, understood as the actual expression in context of the vivacious excess of virtuality or relationality. A quality presents the pushy self-activity of life on the move: the remainder of ingressive potential too ongoing to be exhausted by any particular expression of it. The process line most directly concerned with the qualitative expression of self-transforming life-activity is art.

Mention has already been made of one 'artist': Frank Sinatra. His Katzian eye-colour makes him a good place to start. Sinatra is arguably more of a turning point in popular culture than Elvis or The Beatles. It was in fact Sinatra who made

the artistic connections subsequent icons modulated in their own way. Artists, like philosophers, make connections. But rather than connecting singularity to singularity the artist connects quality of excess to quality of excess. Sinatra connected the too-blue of his glancing eyes to the too-mellifluous of his oscillating voice. Then he connected the too-mellifluous of his voice to the subtly too-smooth of his gestures. He connected qualities by seamlessly linking movements of his body into a carnal melody. The interlinkage constituted a composition of qualities that sensibly repeated the linguistic content of the lyrics. The perceived overall quality of the performance meant romance – again. It *meant* romance and *expressed* a singular way of moving through the world: *My Way*. What was expressed through the words and gestures was a way of circulating through the off-stage world. The movement between contexts notably included heterosexual romance, but was not reducible to it. It also included the homosociality of the interracial 'Rat Pack' and rights of entry into the White House and Mafia hangouts. These were all a part of the Sinatra mystique. The connection between embodied qualities Sinatra performed was intimately associated with a surprising way of connecting contexts that in principle (according to the conventionally accepted order of circulation of that era) should be kept carefully segregated: blacks and whites, presidency and sex, romance and corruption, politics and organized crime.

Sinatra's popularity had a double content. It was a lyrical double articulation. It connected a performative body-melody (itself a connection of qualities) to a way of connecting contexts. The contexts were connected simply by moving the body-melody through them. Both articulations of content were marked by excess. The body-melody meant romance. Love: the driving quality of a person's self-activity that cannot be contained without remainder in any particular domestic context (even in monogamist terms, where love still figures as a kind of qualitative life-glow, a global excess of desired and desiring effect in essential surplus over the banal actuality of life's conjugal details). The moving of the melody between contexts expressed an excess liberty of movement: a greater degree of circulatory freedom than conventionally allowed for.

In the connection of connections – or *composition* – the eyes winked supreme. Everything was summed up in them. All of the content of the performance, linguistic, carnal, and circulatory, was contracted into that ineffable quality of blue. Sinatra's blue eyes gathered all that he performed into a *face*. In other words, it embodied it in a personal way, 'my' way. Sinatra's too blue expressed a life, a singular life. It expressed this life as personal *and* shareable. Sinatra's fans could bask in his personal life-glow. They could feel the quality, in every recess of their swooning, finger-snapping bodies. They could try to carry the glow into their own circulation through life's contexts. Sinatra's too-blue expressed the singularity of a life as a potentially shareable, heterosexual *life-style*. His way of connecting lyrical movements of language to bodily movement to contextual circulations was just that: the creation of a style. However 'low-brow' it might

be by many standards, his singing was a bona fide artistic endeavour because it created a powerfully effective new style. The genius of his style was to *personalize a composed singularity of vital movements in a way that it could collectively spread*. He made his own liveliness collective by force of personality – so forcefully that it that it became literally *contagious*. Popular song had become a technique of life-style contagion. Sinatra lyrically reinvented heterosexuality as a popular culture virus.

This is the mode of connection that the popular music of the 1960s drew upon and modulated. It was not actually that large of a step, in spite of the contrasting political and social polarity of the 'Movement'. The rebellious performers of the 1960s took the musically composed life-style contagion Sinatra invented to greater excess. Their stylistic expressions added degrees of freedom to the anti-conventional circulation between off-stage contexts. They intensified the style of popular music, contracting so many degrees of movement into their straining eyes that they would glaze over in connective overdose or roll Iggy Pop frenetic. But the basic structure was the same: sharing in a collective quality of life-movements personally summed up in the iconic face of the performer. The contagion at issue was not an imitation as such, even in Sinatra's case. Few fans of Sinatra, if any, took his life as a literal model for theirs. Very few actually hung out presidentially with packs of human rodents. Under the felt sameness of expressed too-blue quality was an assumed difference in the kinds of contexts that could be connectively lived. The effective sharing of the felt quality did not preclude major differences in the actual off-stage movements. This differential between expressed quality and actual movements was consciously played upon and widened during the 1960s, when 'imitating' an icon came to be experienced as a liberation not only from conventional orders of circulatory context connection but from fealty to all models of behaviour – even the icon's. The same differential widened yet again a decade later with punk (after which the affective economy of popular music underwent another transformation in the course of which the life-style link was weakened).

Popular art is a collective technology of vitality. Its continued reliance on personalization and its emphasis on shareability means that it retains a connection to common sense, however stretched. However 'counter-cultural' or 'sub-cultural' it gets, popular music it is still playing personally with collective 'imitation' effects. What is often dismissed as 'avant-garde' art involves the creation of styles that: refrain from presenting their qualitative expression as personal (arguing that it is first and foremost critical or cosmic); try to expunge the sense of sameness from the compositions (claiming inimitable singularity); and cut off or undermine the smoothness of the connections between levels (movements of language; bodily movements; movements between actual contexts). The compositional strategies of avant-garde or 'serious' art *disjunctively conjoin* the movement levels that popular art endeavours to connect seamlessly. It sometimes has a tendency to present itself as a 'pure' activity opposite in nature from

mere popular artistry. In fact, like all activity, it is always impure. Its unacknowledged impurity consists in being an operation on popular artistry. Avant-garde artists have a reputation for being hyper-aware of the vagaries of popular life-style 'statements'. They have to be close to popular culture in order to know how to disarticulate it. All-too-popular life-stylized artistry is the avant-garde 'removed' that ineluctably returns. When 'serious' artists neglect to not personalize the styles they create, or when their work is personalized in spite of their best efforts, their art turns into 'high' art. All the excess falls back on the personalization, which greatly intensifies because it doesn't have the outlet of collective contagion and thus carries little or no effective differential, little or no variational connectivity between actual contexts (other than between the contexts of the gallery, museum, and salons of the wealthy). In high art, excess of creative personality ('genius') is converted directly into capitalist surplus-value.

Popular art, for its part, has no complexes about its own capitalist feed-forward. When avant-garde art gets 'high' on society and feeds into capitalist circulation, it rejoins popular art – and scientific technologization. Witness the role of technology-turnover in renewing artistic expression: from analogue to digital media; from vinyl to CD to the Internet and MP3; at each turnover, a new and intensified threshold of profit-making stylistic circulation. Capital is the shared threshold of science and art. (What, by the way, is the relation between capital and philosophy? Both have been described as supremely useless and as reconstituting excess-unities of linkage or circulation. How near, and how far! Is the relation between philosophy and capital a parody? A simulation? Is contemporary capitalism the farce of philosophy's second historical coming?)

The processings of science run usefully from recognizability to reproducibility. The processing of philosophy runs uselessly from accompaniment (actual qualitative expression) to relationality (virtual connection between singularities). Those of art cleave to actual qualitative expression, running from quality to quality in a way that envelops actual movements (in a composition that can be seamless or disjunctive, contagious or off-putting). Philosophy and art bookend science, working from opposite scientific termini. Both art and philosophy, unlike science, are concerned with the eventful expression of singularity. Philosophy presents singularity as virtually expressing (surplus-giving relation, or situation). Art re-presents it as actually expressed (contextual excess or remainder). They both present the singular as the qualitatively transformative movement it is: as *affective* rather than as objectified. But they present it in different modes. Philosophy presents affect as thought-sensed; art, as sensationally performed.

There is one process line in the expanded field that has not been spoken for: from relationality to expressed quality. This is a more ample movement, beginning before the scientific limit of recognizability and continuing past its limit of reproducibility. This is a broad sweep, running from philosophy to art, through a middle region shared, in passing, with science. If a process line succeeded in

following this path, there would be nothing prohibiting it from then turning around and taking the same path in reverse, going from expressed quality to relationality. A process line of this kind would make a bi-directional sweep across the entire nature-culture continuum. Imagine the powers of contrivance, the fabulatory skill, necessary to pull that off. Imagine the ire of science, so easily horrified, at a more ample movement trespassing on its empirical territory, even in passing. A process line of this kind would be most fraught – and filled with its own unique potential. It might even be in a position to draw political effectiveness from its movements, perhaps serving in some way as an arbiter in the mutual interferences, battles, and negotiations between philosophy, science, and art. It would distinguish itself from both art and philosophy by taking their political middle as its eventual terminus. Unlike the other process lines, it would circle around to having only that one terminus. Its movement would be a bi-directional orbit around the terminus of the political middle. What would distinguish it from other political movements would be its base in cultural institutions such as the university, museum/gallery, think tank, and research centre.

This process line could well be cultural studies. But it isn't. Cultural studies has missed its processual boat because it has not had the audacity to sweep far enough in either direction. As it is widely practised, cultural studies falls short of singularity at both limits because it clings to the notion that *expression is of a particularity*. It realizes that expression is always collective. But it takes the collectivity as already-constituted: as a determinate set of actually existing persons (in common parlance, a constituency). This contains expression: it restricts its movement to the manifestation of a content considered to be generally applicable to a collection of particular persons, to an established category or class of human. It treats expressed qualities as general attributes or properties shared by the members of a class by pre-given 'right' (in principle if not in fact). This misses surplus-giving relation and the qualitative excess of liveliness over-spilling every determinate expression. It misses the relational comingness of the community and the qualitative contagion of collective life-movement. It misses the impersonal or over-personal excesses of ongoing transformation. It generally-particularly misses change. Hence the obsession with change that has haunted cultural studies from the beginning.

Practised in this way, cultural studies lacks processual specificity. Containing expression in properties belonging to general classes of beings is science's activity. To the extent that cultural studies generally construes expression to be of a particularity, it begins to pass a threshold toward science: the 'soft sciences'. In recent years, a strong current within cultural studies has in fact pushed it toward more sociological or classically empirical historical methods. Politically, this missing of expression has pushed cultural studies away from whole-field modulation ('radical' intervention) toward advocating regulation in the generally perceived interests of the particular: in short, toward liberal government policy designed to give existing constituencies what is theirs by right. The current most

forcefully advocating this turn is the wing led by Tony Bennett (1998) whose 'post-Marxist' aim is to remake cultural studies as 'cultural policy studies.' The title of one of Bennett's recent books says it all: *Culture: A Reformer's Science*.[37]

There is always room for expansion in the empirical field. The more process lines, the merrier. The point is not to decry these developments, which are doubtless capable of positively producing self-validating effects. The bifurcation of cultural studies does not present a problem for the expanded field unless it plays out in a way that subtracts from the field what cultural studies could be if it pushed itself to its farthest limits and circled back to the political, anomalously modulated simultaneously by philosophy and art. When cultural studies veers toward social science or policy studies, it passes a threshold. It ceases to be its own becoming, becoming something else again. It relinquishes its self-activity.

Were it to push its self-activity into a more ample orbit instead, it might realize its dream of making a unique contribution to political change. There is a potential role for practices of knowledge attentive to particularity, but not limited by its already-constituted contents and attributes. Not being or having a determinable constituency helps. The much-maligned 'isolation' of so-called 'tenured radicals' is potentially a tremendous political resource. It means that in actual fact they 'represent' no one – in the best-case scenario, not even themselves. People burdened with that label are often highly uncomfortable with the privilege attached to their cultural-institutional base. This makes them outward looking, in the hope of connecting with other, qualitatively different life-styles or forms of life: the more ongoingly transformative the better. This habit of looking wistfully away drives a wedge between their objective interests as members of a constituted class and their affective tendencies. The resulting differential is not unlike that between the linguistic level of popular artistic expression and the level of contextual circulation. Except that it lacks contagiousness – to the great relief of the practitioners of radical cultural studies themselves. The last thing they would want is for everybody to become professors like they are. Residually Marxist rhetoric aside, *class interest is the removed of radical cultural studies* (which, like all processual removals, returns to haunt). What is potentially unique about cultural studies is its institutional calling to *substitute affect for interest*, more or less vague affective tendency for sharp class self-defence. This is also not something they would want everyone to do. There are acute contextual differences in many people's lives that make general defences of particular interests or rights a vital necessity. The removal is self-referential: pertaining only to the self-activity of cultural studies.

If radical cultural studies semi-artistically refuses to set itself up as a model of any kind, yet lacks powers of contagion, how can it be effective? What mode of validity can it possibly achieve for itself? Consider that the expanded empirical field is full of mutually modulating, battling, negotiating, process lines liberally encouraged to develop and sharply express self-interest across their collectively

remaindered, ongoing transformations. The anomaly of an *affectively engaged yet largely disinterested* process line could conceivably be a powerful presence if it were capable of conveying its (masochistic?) removal of self-interest. The reciprocal readjustments always under way in the empirical field make the pursuit of politics an *ecological* undertaking, whether it thinks of itself that way or not. This essay began by invoking an ecology of knowledge practices. It is now clear that this is a *political ecology*.[38] The 'object' of political ecology is the coming-together or belonging-together of processually unique and divergent forms of life. Its 'object' is symbiosis, along the full length of the nature-culture continuum. The self-disinterest of cultural studies places it in a privileged position to side with symbiosis *as such*. What cultural studies could become, if it finds a way of expressing its own processual potential, is a political ecology affectively engaged in symbiosis tending. This is what was meant earlier by acting as an 'arbiter'. The word arbitration is not quite right. To retain its singular mode of self-activity, political ecology would have to refuse steadfastly to wield decision-making power, or to act as a moral judge. It would find a quasicausal role for itself, as one modulating instance among others, but different by virtue of its 'masochism' – its taking the *risk* of neither defending its own interests nor claiming to represent any one else's, in general or particular.[39] Deleuze uses the word 'intercessor' for this disinterested but affectively engaged political risk-taking role.[40]

A political knowledge-practice that takes an inclusive, non-judgemental approach to tending belonging-together in an intense, affectively-engaged way is an *ethics* – as opposed to a morality. Political ecology is an amoral collective ethics. Ethics is a tending of coming-together, a *caring for* belonging as such.

All of this assumes that cultural studies is destined to be political. What else could it be, when it does what it can do the best that it can? When it fulfils the potential amplitude of its connectively autonomous movement? Faulting cultural studies for being political is like faulting science for being useful (or philosophy for being speculative). If it wants to live up to its potential, cultural studies has to be as proudly, loudly political as philosophy is glowingly useless. Exactly how that more ample movement will develop, including the extremes of philosophy and art in its orbit, passing through middling science and liberalism without becoming them – that is for a coming cultural studies community to determine. It is not for a useless philosopher to say.

Of course, cultural studies is not the only potential ethically-tending process line.[41] There are any number of other ethics. Every process line described in this essay is endlessly proliferative in its self-variations. The key to an expanded empiricism is additivity. There is always enough room in this world for 'more'. More modulation. More belonging. Only those who say there isn't room to share nature's giving ever-more culturally of-itself deserve to be told to get out. There is only one general principle in ethics: no process line has the God-given 'right' to tell another to 'wink out'. Constituencies interested in annihilation should be graciously encouraged to go first to show how it is done: to make an example of

themselves by 'winking' out before they do ecological harm to other forms of life. Ethics is exemplary.

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Notes

1 'The general case of conscious perception is the negative perception, namely, "perceiving this stone is not grey". The "grey" then has ingression in its full character of a conceptual novelty, illustrating an alternative' (Whitehead, 1978: 161).

2 *Montreal Gazette*, Arts and Entertainment section, 29 May 1999, p. D4.

3 The term 'form of transition' is Alfred North Whitehead's (1968: 82, 89)

4 Experience 'grows by its edges. . . . The unity of the world is on the whole undergoing increase. The universe continually grows in quantity by new experiences that graft themselves upon the older mass' (James, 1996: 87, 90). On James's famous 'stream of thought', see 1996: 95 and 1950: I, 224–90.

5 On 'insistence' and the 'eternity' ('Aion') of the singular event, see Gilles Deleuze, *Logic of Sense* (1990: 21–2, 165–7). Deleuze's account in *Logic of Sense* of the kinship between eternity and event in the genesis of sense can be linked conceptually to Whitehead's 'eternal object' ("essence" in the vocabulary of *Logic of Sense*). 'An eternal object can be described only in terms of its potentiality for "ingression" into the becoming of actual entities; and its analysis only discloses other eternal objects. It is pure potential. The term "ingression" refers to the particular mode in which the potentiality of an eternal object is realized in a particular actual entity, contributing to the definiteness of that actual entity . . . This definition can be stated more generally to include the prehension of an eternal object by an actual entity; namely, The "postive prehension" of an entity by an actual entity [or actual occasion] is the complete transaction analysable into the ingression, or objectification, of that entity as a datum for feeling, and into the feeling whereby this datum is absorbed into the subjective satisfaction [the doubling into "datum" and "satisfaction" is the object/subject "divide" discussed later on in the present essay] . . . Qualities, such as colours, sounds, bodily feelings, tastes, smells, together with perspectives introduced by extensive relationships, are the relational eternal objects whereby the contemporary actual entities are elements in our constitution. This type of objectification has been termed "presentational objectification."' Whitehead (1978: 23, 52, 61).

6 Andrew Pickering, developing Bruno Latour's concept of the 'actor-network',

analyses scientific practice as a 'mangle' in which 'human and material agency are reciprocally and emergently intertwined', with 'existing culture constitut[ing] the surface of emergence' of the scientific object (1995: 21) See Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (1987). The scientific objects of Latour's scientific actor-networks are 'invention-discoveries' that have 'a simultaneous impact on the nature of things and on the social context' while 'not reducible to the one or the other' (1993: 5).

7 On 'termini' see James (1996: 56–63) On termini and the development of 'bare facts', discussed in relation to colour, see Alfred North Whitehead, *Concept of Nature* (1964: 12–13). What are called 'bare facts' here are 'bare objectives' or 'entities' in Whitehead's vocabulary; 'ultimate fact' corresponds to Whitehead's 'fact'. 'Factoid', for its part, is meant to resonate as much with Bruno Latour's 'factish' (*faitiche*) as with Whitehead's own intermediate term, 'factor'. See Latour's *Petite Réflexion sur le Culte Moderne des Dieux Faitiches* (1996); and Isabelle Stengers, *Cosmopolitques*, vol. 1, *La Guerre des Sciences* (1996), chapter 2, 30–49. 'Factish' is a development of the concept of the 'hybrid object' from Latour's earlier work (see *We Have Never Been Modern* (1993), chapters 1 and 3). The distinction between 'bare fact' and 'ultimate fact' is comparable to Deleuze's distinction between 'bare repetition' and the 'singular subject' of repetition in *Difference and Repetition* (1994: 23–5, 84).

8 In all of her work Isabelle Stengers pays special attention to 'minor' knowledge practices: experimental and theoretical projects that in retrospect take on new significance (precursors in physics and chemistry to contemporary sciences of irreversibility and self-organization); paths not taken (the practices of hypnosis from which Freudian and Lacanian psychoanalysis turned away); and new hybrid formations (the ethnopsychiatry of Tobie Nathan) On hypnosis, see Isabelle Stengers and Léon Chertok, *A Critique of Psychoanalytic Reason: Hypnosis as a Scientific Problem from Lavoisier to Lacan* (1992) and Stengers and Chertok, *L'Hypnose, blessure narcissique* (1990). On ethnopsychiatry, see Isabelle Stengers and Tobie Nathan, *Médecins et sorciers* (1995).

9 On contextual rigging and affect, see Brian Massumi, '*The Bleed: Where Body Meets Image*', (1996a)

10 Taking adhesion in the world personally and emoting on the connectedness of things is characteristic of New Age philosophy.

11 'This, here, is James' (1996) 'that': ' "Pure experience" is the name I gave to the immediate flux of life which furnishes the material to our later reflection with its conceptual categories . . . [pure experience is] a *that* which is not yet any definite *what*, tho' ready to be all sorts of whats; full both of oneness and of manyness, but in respects that don't appear . . .' (p. 93–4). 'If we take conceptual manifolds, or memories, or fancies, they also are in their first intention mere bits of pure experience, and, as such, are single *thats* which act in one context as objects, and in another context figure as mental states' depending on how they are taken up and toward what 'termini' those processual uptakes lead (p. 15). Their status as subjective or objective are results of the uptake. ' "Pure experience" . . . is only virtually or potentially either subject

or object as yet. For the time being, it is plain, unqualified actuality, or existence, a simple *that*' (p. 23). 'Its unity is aboriginal, just as the multiplicity of my successive takings is aboriginal. It comes unbroken as *that*, as a singular which I encounter; they come broken as *those* takings, as my plurality of operations' (p. 105).

12 On real (singular) conditions of emergence versus general conditions of possibility, see Deleuze (1994: 284–5)

13 This is an instance of the 'feedback of higher forms' that in some way or another always blurs any attempt to police distinctions between levels (especially of cause and effect). This processual recycling makes it impossible to maintain terminological distinctions, such as that earlier suggested in this essay between affect from emotion, in any final way. It is as important to grasp the processual oscillation between terms as it is to assert their distinction. In the approach advanced here, clarity of distinction serves as a springboard for dynamic reconnection, never an end in itself. The reconnection constitutes an added distinction. Where a duality is asserted it is always meant to function additively, as a first step in a multiplication of distinctions following processes of feedback or other forms of relational modulation. 'Multiply distinctions' is the methodological rallying cry of the approach advocated here.

On the necessity of a distinction between affect and emotion as well as the need to complicate it through a notion of 'feedback of higher forms', see Massumi, 'Autonomy of Affect' (1996b: 217–40). Also on the feedback of higher forms, see Massumi, 'Strange Horizon: Buildings, Biograms and the Body Topologic' (1999). The work of Gilbert Simondon (1989: 98–9, 106–7) provides a precedent (brackets translate the passage into the vocabulary of the present essay; order of passage modified): 'Affectivity precedes and follows emotion [emotion feeds back into affect] . . . Emotion implies the presence of the subject to other subjects or to a world that places the subject in question as a subject [it is naturally relational and socially problematic] . . . emotion assumes affectivity, it is the point of insertion of an affective plurality in a unity of signification; emotion is the meaning [becoming-content/attribute] of affectivity . . . we should not speak of affective states, but rather of affective exchanges, of exchanges between the preindividual [nature] and what is individuated in the being of the subject [its contextualized personhood, or individuality]. Affectivo-emotivity [the subjective process line from uncontained affect to its personalized expression] is a movement between indeterminate nature and the here and now of actual existence [the irruption of the event]; it is what makes the indeterminate in the subject mount toward [be expressed in] the present moment which incorporates it in the collectivity [co-constituted with the subject's individuality] . . . Positive affective states mark the synergy of constituted individuality [the personal terminus of the subjective process line] and the actual movement [the emergence and ongoing of the process line] through which the preindividual is individualized . . . Affectivity and emotivity are apt to undergo quantum reorganizations; they proceed by sudden leaps according to degrees [periodically disappear into themselves, into

their own intensity or singularity], and obey a law of thresholds. They are the relation between the continuous and the discontinuous [they are the world-glue connecting disparate contexts] . . . the reality of affective-emotive movement is that of a relation that has, with regard to its own terms [termini], a self-positing value [it is self-active and self-affirming, even as it ends].'

14 'One may conclude that the probability of such a phenomenon of self-organization occurring is practically zero' Prigogine and Stengers (1986: 214–15). The corresponding passage in *Order Out of Chaos* (1984) (which differs significantly from the French edition) p. 142.

15 The 'bifurcation point' of chaotic ordering is when a new-felt global 'sensitivity' produces an undecidability between two or more outcomes. On this point in relation to the Bénard instability, see Prigogine and Stengers (1984: 165).

16 On the distinction between the possible and the virtual, see Deleuze (1994: 211–15).

17 To summarize: classical scientific laws pertain to linear, part-to-part connections between discrete elements whose interactions can be predicted on the basis of their individual properties. They are locally deterministic. 'Laws' of chaos pertain to whole populations of elements whose collective behavior cannot be extrapolated from their individual properties. They are not deterministic in the sense of being able to predict the outcome of any particular interaction. That is why they are necessarily formulated as laws of probability. Ilya Prigogine (1994) forcefully argues the necessarily probabilistic nature of laws of chaos, at the quantum level as well as on the macro level of thermodynamic systems. He also insists that the margin of indeterminacy that imposes the need for probabilistic treatment is not simply due to unavailability of complete information. It is, he says, a natural reality: a positive potential in matter, which is one with its capability of evolving (in particular, it might be added on a Bergsonian note, its ability to evolve life, to become-alive). See also Prigogine and Stengers, *The End of Certainty: Time, Chaos and the Laws of Nature* (1997). On life: 'It is certainly true that life is incompatible with Boltzmann's [probabilistic] order principle but not with the kind of behaviour that can occur in far-from-equilibrium conditions' like those of the Bénard instability. 'Life, far from being outside the natural order, appears as the supreme expression of the self-organizing processes that occur.' Prigogine and Stengers (1984: 143, 175).

18 The crucial distinction between situation and context required a terminological doubling with regard to concepts of qualitative activity (affect and emotion). So too with concepts of receptivity. Reserve 'sensation' for the impersonal experience of something new globally registering in a context. Use 'perception' for the determination of constituent elements, or parts retrospectively experienced as composing the actual context. Perception is structural or interactive (subjective-objective, in reciprocal definition). Sensation is eventful or processual. Perception is exo-referential (pertaining to recognized part-to-part connections understood as external to the knowing subject).

Sensation is *self-referential*: pertaining to the context's relation to itself (change) and encompassing of the structural coupling of the subjective and the objective ('autonomous' rather than subjective-objective).

19 For a history of the 'three-body' (or 'many-body') problem and an introduction to its scientific offspring, see Florin Diacu and Philip Holmes, *Celestial Encounters: The Origins of Chaos and Stability* (1996).

20 Ecology is perhaps most predisposed to relation, since it explicitly defines interactive contexts as its object of study. But even what has historically been the most willfully reductive of the biological sciences, molecular biology, is being relationally challenged by concepts like 'endosymbiosis' introduced by the work of Lynn Margulis (for an overview, see Margulis and Dorion Sagan, *What is Life?* (1995: 90–117). The trends in brain science are clearly toward treating brain functions as network-events involving differential populations of cells interconnected by complex patterns of feedback. Neurons' collective response may be induced by a discrete stimulus, but always displays a systemicity (a global excess of effect, due to feedback) that forbids any strictly linear causal model.

21 The stochastic resonance effect is 'surplus' or excessive because it concerns the ability of *subthreshold* signals to be perceived, or to induce a 'switching event' in the receiving system: 'the signal, by itself, never has sufficient amplitude' to 'deterministically' cause a change in the system's state (Moss *et al.* 1994: 1385). And yet it does, due to a singular interaction between signal and noise. Stochastic resonance, which replaces linear causality with near-relational concepts involving 'noise' (chaotic indeterminacy of signal), interactive 'amplification', 'threshold', and global or systemic 'modulation', has implications far beyond acoustics. It has particular significance for brain science, where it adds a level of nonlinear causality functioning *on the level of the single neuron*, even prior to the consideration of the collective behavior of populations of cells. For overviews, see Frank Moss *et al.* 'Stochastic Resonance: Tutorial and Update' (1994) and Kurt Wiesenfeld and Frank Moss, 'Stochastic Resonance and the Benefits of Noise: From Ice Ages to Crayfish and SQUIDS', (1995).

22 'The relations that connect experiences must themselves be experienced relations, and any kind of relation experienced must be accounted as 'real' as anything else in the system' (James, 1996: 42 See also pp. 16n, 25, 71–2, 110).

23 'Subjectivity and objectivity are affairs not of what an experience is aboriginally made of, but of its classification' (James, 1994: 141).

24 'We are virtual knowers . . . long before we were certified to have been actual knowers, by the percept's retroactive validating power', James (1996: 68).

25 The way Deleuze formulates this is that 'relations are external to their terms' He begins to develop this concept in his very first book, on Hume: *Empiricism and Subjectivity: An Essay on Hume's Theory of Human Nature* (1991: 66, 101). Gilbert Simondon's phraseology is 'the terms of the relation do not preexist it' (1964: 17, 274). Foucault's (1972: 46) way of making the same point for the contents of language is that 'discursive relations [*relations*] are not interior to

discourse': 'yet they are not relations exterior to discourse . . . they are, in a sense, at the limit of discourse; they offer it objects of which it can speak, or rather (for this image of offering presupposes that objects are formed [or in the language of this essay, determined] independently of discourse), they determine the sheaf of connections [*rapports*] that discourse must establish in order to speak of this or that [particular] object, in order to deal with them, name them, analyze them, explain them, etc. These relations [*relations*] characterize not the particular language [*langue*] used by discourse, nor the circumstances [contexts] in which it is deployed, but discourse itself as a practice [process line]' (translation modified). Finally, William James: 'Relations are feelings of an entirely different order from the terms they relate' (1950: II, 149).

26 This relational perspective differs sharply from the debunking attitude some practitioners of cultural studies have adopted, for whom 'techno-science' is a term of abuse marking a complicity that invalidates science as a whole The problem is precisely that they look at science 'as a whole' rather than as a process (one that is strictly self-limited and precisely *because of that* displays a continuing openness). The hyphen in 'techno-science' is used less as a plus sign than as an implicit equal sign. The theory and politics of making an equation is very different from those of making a connection, however inexorable that connection is seen to be (however necessary its situational contingency). A 'radical empiricism' continuously multiplies processual distinctions rather than making judgmental equations that implode the world's additivity.

27 On the 'subsumption of life under capital', see Brian Massumi, 'Requiem for Our Prospective Dead' (1998a).

28 The concept of 'subjectless subjectivity' is from Raymond Ruyer. See Paul Bains, 'Subjectless Subjectivities' (1998). On 'naturing nature', see Deleuze, *Spinoza: Practical Philosophy* (1988: 92–3). Keith Ansell-Pearson cautions that Deleuze's appropriation of this Spinozist concept is strongly influenced by his reading of Bergson (1999: 12, 36–7).

29 The classic study of relational colour effects remains Johann Wolfgang von Goethe *Theory of Colours* (1970) See also Brian Massumi, '*The Brightness Confound*'(1998b) and '*The Diagram as Technique of Existence*' (1998c).

30 Is it stretching things too far to construe Deleuze and Guattari's analysis of philosophy and 'friendship' as a way of talking about accompaniment? See the preface to *What is Philosophy?* (1994).

31 On the concept of pure linkage (*liaison*) 'at a distance' from the actual elements linked, see Raymond Ruyer, *La Conscience et le Corps* (1950: 46–7, 61, 94–5).

32 On the inhuman or 'nonhuman' as a potential, in relation to historical orderings and language, see Alan Bourassa, 'Language, Literature, and the Nonhuman' (1998). The notion that historical potential inhabits event-gaps ('ruptures' or 'cesuras') in its actual order is central to the philosophy of Michel Foucault (1977: 58–61): 'The event is not of the order of bodies. Yet is in no way immaterial; it is on a level with materiality that it takes effect, that it is effect; it has its locus and consists in the relation, coexistence, dispersion, intersection, accumulation, and selection of material elements . . . Suffice it

to say that the philosophy of the event should move in the paradoxical direction of a materialism of the incorporeal . . . it is a question of cesuras that break open the moment and disperse the subject in a plurality of possible positions and functions [this is the 'subjectless subject' alluded to earlier; in the present framework, potential might be substituted for possible] . . . what must be elaborated – outside philosophies of the subject and of time – is a theory of discontinuous systematicities' [holdings-together in the gaps of ongoing between contexts] privileging neither 'mechanical causality' nor 'ideal necessity' but instead welcoming contingency.

33 Deleuze and Guattari also link philosophy to a 'people to come' in *What is Philosophy?* (1994: 109).

34 On philosophy as providing a conceptual 'tool-box', see Gilles Deleuze and Michel Foucault, '*Intellectuals and Power*' (1977) On philosophy's necessary relation to nonphilosophy, see Deleuze and Guattari (1994: 40–1, 218).

35 James found a characteristically pithy way of phrasing this: 'Nature exhibits only *changes*, which habitually coincide with one another so that their habits are discernible in simple "laws" ' (1996: 148) For Peirce on laws of nature as habits of matter, see *The Essential Peirce*, vol. 1 (1992: 223–4, 277–9).

36 See also Paul Davies (1983: 229): 'Science offers a surer path than religion in the search of God'.

37 For a critique of Bennett's approach, see Meaghan Morris, *Too Soon, Too Late* (1998: 227–31).

38 On political ecology, see Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm* (1995: 119–35) and 'The Three Ecologies' (1989: 131–47).

39 The concept of creative risk is central to Isabelle Stengers' model of an ecology of practices, as developed in *Cosmopolitiques* (1996) and elsewhere.

40 Unhappily translated as 'mediator' See Deleuze, '*Mediators*' (1995).

41 For a consonant approach starting from an institutional base in political science rather than cultural studies, see William Connolly, *The Ethos of Pluralization* (1995).

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