Affectivity

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Abstract

The concept of affectivity has assumed central importance in much recent scholarship, and many in the social sciences and humanities now talk of an 'affective turn'. The concept of affectivity at play in this 'turn' remains, however, somewhat vague and slippery. Starting with Silvan Tomkins' influential theory of affect, this paper will explore the relevance of the general assumptions (or 'utmost abstractions') that inform thinking about affectivity. The technological and instrumentalist character of Tomkins' basic assumption will be traced through four socio-historical-technological configurations in the context of which thinking about affectivity is shaped. The political relevance of this instrumentalist utmost abstraction concerning affectivity is articulated by reference to Hobbes' development of political science. In this way, through a critique of the instrumentalism informing Tomkins' mode of thought, a way is opened for a revised general assumption concerning affectivity, based on process thinking.

Introduction: basic assumptions and facts of experience

> The utmost abstractions are the true weapons with which to control our thought of concrete fact (Whitehead, 1985: 41)
>
> The great instigators of violence have encouraged themselves with the thought of how blind, mechanical force is sovereign throughout the whole universe. (Weil, 2002: 11)

In his recent novel *Solar,* Ian McEwan recounts an interesting episode in the fictitious life of Michael Beard, an emotionally dysfunctional Nobel Prize winning physicist whose carelessly lived life progressively disintegrates. On his way to deliver a speech about global warming, Beard buys a packet of potato crisps and boards a train, taking a seat opposite a tough-looking, shaven-headed, well-built young man. Beard opens the snack in front of him, and savours the taste of two or three crisps at length before noticing, with some discomfort, his fellow passenger staring at him. Shock follows when the stranger takes the liberty of reaching over into the packet, taking a crisp and flagrantly proceeding to eat it. Both men remain impassive despite the affectivity at play, and stare unblinkingly into one another's eyes. Beneath these masculine masks, however, McEwan describes how Beard's feelings fluctuate between fear and anger as he imagines, first, his imminent physical defeat, second, an unfathomable scene of possible seduction, and third, the possibility that he might be confronting a dangerous 'psychiatric case'. He decides to take another crisp and the man does the same, this time taking two. This scene is repeated until, in a gesture Beard interprets as the final insult, the stranger picks up the packet, offers the obese physicist the last

two crisps, and disposes of the empty bag. Beard, despite his evident physical inferiority, will not be bullied. Throwing caution to the wind, he defiantly picks up the young man's bottle of water, opens it, and drinks the contents, tossing the empty bottle back in a display of nonchalance. The man responds in an unexpectedly helpful way, by getting Beard's luggage down from the overhead rack for him as the train arrives at its destination. After leaving the train Beard discovers that, in fact, his crisps are still in his jacket pocket, unopened.

This little scene neatly illustrates how 'abstractions' control our thought of 'concrete fact'. Beard's basic working assumption had been that the crisps belonged to him, and this assumption turned out to be false: they belonged to the young man all along. The scene clarifies how each of the empirical particulars experienced and expressed by both men during that short stretch of time had been patterned and shot-through by Beard's basic assumption. Not just the actions, but also the fleeting and unstable feelings of shock, indignation, anger, fear and sympathy that we can now so easily imagine *both* men feeling (in a more or less 'symmetrical' way) were concrete facts, but the abstract assumption was an active ingredient in their reality: a decisive factor determining the process of *concrescence* through which these facts of experience became concrete, and fed-forward into the next occasion of experience. On discovering the unopened packet, everything changes: a flash of new insight - deriving from the revised assumption - shows up the past stretch of time in a completely new light. The new assumption born from the destruction of the old enters as a fresh ingredient guiding the concrescence of the next experience, itself highly affective: 'for the moment it felt like liberation, strangely like joy' (2010: 127).

What applies in everyday life applies also in the life of science. At the beginning of his magnum opus *Affect, Imagery, Consciousness*, the psychologist Silvan Tomkins asserts that: 'The most general assumption about the nature of its domain is the most critical single decision of a science' (1962: 7). If affectivity is to be a useful concept, and is to help us in thinking the relation between society and technology, then it seems we must not neglect this critical decision concerning our 'most general assumption' (or what Whitehead calls our 'utmost abstraction'). The Beard anecdote helps us to grasp why this is the case. It helps to show how our utmost abstractions are not *separate* from but *participate in* our experiences of concrete fact, sometimes providing the very *pattern* that gives shape, texture and intensity to those ongoing experiences. This perspective will doubtless appear paradoxical to those whose basic assumption is to oppose rather than identify affectivity and abstraction, and hence to those who ultimately polarise something like 'emotion' and 'cognition'. Nevertheless, we start by assuming the critical value of our utmost abstractions, and from this perspective it would not be sufficient to point out that affectivity refers to the dimension of feeling and to the experience and expression of emotions and passions such as joy, fear, shame, excitement, hatred and love, including their micro-dynamics, expressions and phenomenology. Neither would it be enough to supplement this with broader questions concerning

suggestibility, social influence, imitation, imagination and contagion that, perhaps without conscious mediation, feed into emotions and passions, as well as wishes, desires and aspirations. These kinds of statements, although they might be quite correct and pertinent, remain relatively specific, leaving more general assumptions to work their influence implicitly. Are these emotional experiences part of the real world or are they 'merely' subjective, and perhaps even irrational, for instance?

Tomkins does us the service – unusual for a psychologist - of making the general assumptions relevant to his psychology of affect explicit. Tomkins' work has been a major influence on a recent 'turn to affect' within scholarship in the humanities and social sciences - an influence rivaled, perhaps, only by the very different work of the French philosopher Deleuze (Brown and Stenner, 2001, Sedgwick and Frank, 1995, Massumi, 1995, Clough and Halley, 2007, Greco and Stenner, 2008, Blackman and Venn, 2010, Gregg and Seigworth, 2010). Given this influence, we will start our critical exploration of utmost abstractions concerning affectivity by examining in some detail Tomkins' most general assumption in the context of his theory of affect. We will then argue that this most general assumption is characterised by a fundamental instrumentalism, and that this characteristic is traceable to some of the changing configurations of technology, philosophy and politics in Western society. A critique of this instrumentalism opens the way for a revised general assumption concerning affectivity, based on process thinking. Our argument concerning affectivity builds on the thought of Heidegger, Canguilhem, Serres and Whitehead.

The most general assumption of Tomkins' psychological theory of affect

A preliminary point to make is that Tomkins' most general assumption does not pertain to all aspects of being, but to the subset he calls 'living systems'. The assumption that 'life' should be distinguished from non-life and that it can best be grasped as a *system* remains unexamined. We will return to the effects of this assumption shortly, because, like Beard's original assumption, they pervade his account, in this case lending it a thoroughly *instrumentalist*, technological character. The primary characteristic of living systems, he states, is *duplication*, or self-replication in time and space. The concept of duplication is thus Tomkins' utmost abstraction. Duplication is not a 'thing' but an *activity*. Through its activities, a self-duplicating entity must transform and recruit materials and information from its environment to the end of the maintenance and repetition of its own material (energetic) and informational self-identity. In classic cybernetic fashion, Tomkins thus distinguishes energy (which he uses interchangeably with 'matter') and information. He defines information in relation to the *patterning* of matter into a recognizable and recurrent *form*: Information in*forms* matter. To the extent that duplication reproduces some recognizable form, duplication thus always involves a combination of both matter/energy and information. Compared to matter, however, information is relatively abstract.

It follows from these assumptions that life is a complex cascade of systems and subsystems composed of different mechanisms of duplication, which mechanisms - if they are also to be capable of persisting in time and space - must themselves be essentially duplicative. Many of the more obvious duplicating mechanisms fall into the category we call 'biological'. They concern the duplication of a species, the duplication of an organism as a whole, and the duplication of the various organs, cells and other components that compose an organism. At this biological level the material dimension is foremost, but information still plays a decisive role. Hence the species duplicates itself over time by way of genetic mechanisms (ongoing protein production controlled by 'codes'), and each individual must also be capable of ongoing self-duplication via, for example, cell division and maintenance. As a psychologist, however, Tomkins wishes to take seriously the idea of a distinctively psychological type of duplicating sub-system irreducible to the organic domain but whose relations to biology can nevertheless be explained. These psychological mechanisms would then be of one piece with the complex cascade of systems that is life, but one could nevertheless draw a qualitative distinction between the organic and the psychic. The basis for this qualitative distinction is the differently weighted relevance of energetic and informatic aspects in the duplicative activity. Processes we call 'psychological', although grounded in the materiality of physiological modes of duplication (the physical brain, for instance), involve duplicative mechanisms of a maximally informational and minimally material kind. In this way we can see how the master concept of duplication functions as a 'third term' supplying Tomkins with the common ground on which he can talk about – albeit without the usual problematic polarization - what the vulgar amongst us would call 'bodies' and 'minds'.

So what is this unique type of maximally informational 'psychological' duplicating system? Basically, it is what we call 'consciousness': the unfolding set of subjective experiences you, as a reader, are having right now, for instance. Tomkins insists that the material duplications occurring in the terminal we call 'the brain' undergo a 'transmutation' from unconscious message (proper to the duplicating activities of a nervous system complete with its synaptic chemical transmitters and electrical impulses) to conscious *report* (proper to the duplicating activities of conscious systems). The concept of transmutation suggests precisely this *change of modality* in duplicating system (i.e. in duplicating mechanism and duplicated product): a change of modality both in duplicating medium and duplicated form. If the biological duplicating machinery of the nervous system entails the organic processes associated with *neural activity*, then that of consciousness entails the psychic processes associated with *activity with imagery* (i.e. with whatever is consciously perceived). Conscious 'reports' are forms in the medium of self-created and indeed self-creating *imagery*. This change of modality means, importantly, that it is not afferent sensory information that is made directly 'available' (via reports) to consciousness, but imagery. Conscious imagery can arise only out of conscious imagery and it can duplicate only more conscious imagery. In this way the fact of consciousness is not taken to imply a realm of the subject

(mind-stuff) distinct from a realm of objects (body-stuff): it is taken to imply a novel duplicating mechanism at play in nature or, better put, proper to a rarefied region of nature. The human being qua conscious psychological being is basically a *self-duplicating imagery duplicator*: 'The world we perceive is a dream we learn to have from a script we have not written' (1962: 13).

Various psychological subsystems – which we can only hint at here - are presupposed by this system. First, Tomkins posits a central matching mechanism with its own processes of feedback responsible for duplicating imagery out of transmuted sense data. A sensory message will only enter into the imagery of a conscious report on condition that it be *matched* by this central mechanism, and hence duplicated as one ingredient in a broader report. Second, memory is then understood as a related mode of duplication (also operating with imagery) that presupposes consciousness to the extent that some aspects of whatever is duplicated in consciousness are necessarily preserved for future use as conscious imagery. Third, future directedness ('will') is in turn grasped in terms of a report emitted by and for this central mechanism that takes the form of a blueprint that Tomkins calls the *Image.* The *Image,* as distinct from imagery, plays a special role as the blueprint or pattern for the feedback mechanisms at play in the process of duplicating distinct types of imagery. In other words, in allowing the projection of a possibility that might be more or less realized (i.e. in supplying a blueprint or pattern), the *Image* embodies an end-state or target that shapes the possibility of conduct animated by conscious purpose. Through this self-fulfilling feedback mechanism, the *Image* can duplicate itself. The human being *qua person* is governed by a cybernetic feedback system in which information about the difference between an actual state and a predetermined ('ideal') state of consciousness is used to approximate that ideal state in practice. A creature thus endowed can come to live for its feelings.

Although Tomkins does not use this term in this way, we suggest that, in the context of his theory, 'affectivity' constitutes a decisive vector mediating between the maximally informational duplications of conscious imagery and the maximally material duplications of organic processes. We suggest that affectivity therefore functions as a kind of missing link capable of explaining the mysterious transmutation whereby biological systems of duplication came to evolve that peculiar 'slave' psychological system (i.e. consciousness) that would gradually 'master' its organic progenitor (Stenner, 2005). Affectivity, in this account, has its roots in organic processes but its flowers take the form of particular *qualities* that pervade the imagery of conscious experience, tingeing it with the intensity of *value.* In patterning experience into priorities of *importance,* affectivity 'borrows' just enough from material processes to make immaterial processes *matter*. In using the term in this way we must insist that affectivity is not unique to what Tomkins calls the 'affect system', since it is also a prime characteristic of what he calls the 'drive system'. In unfolding his theory, Tomkins exploits a contrast between these two systems. We must now examine this contrast.

For Tomkins, the drive system evolved to motivate mobile organisms to undertake the behaviours required to find the things their duplication requires. The obvious examples concern food, drink and sexual partners. A stationary organism like a tree, or a free-floating organism like a jelly-fish, arguably has no motivational need for an energetically expensive duplicating subsystem which duplicates internally generated reports of imagery that push towards things like food and water consumption. Such creatures can normally rely upon a combination of genetically encoded information and a readily available continual influx of nutrients in order to duplicate their material parts. Such 'material' processes of duplication (including processes like photosynthesis, cell reproduction food digestion, blood clotting, etc.), in other words, have no need of a subsidiary 'conscious' machinery of duplication. Tomkins suggests that such a need arises only when organisms are faced with a situation in which information that *cannot be built into the organism in advance* (e.g. genetically encoded) assumes vital importance. An organism that may need to travel long distances to find food (the whereabouts of which it cannot know in advance), for example, does require such motivation. For Tomkins, the drive system meets this need by generating signals with a high likelihood of becoming the conscious reports we call experiences like thirst, hunger, sexual pleasure, and perhaps pain. The hunger drive, for instance, expresses itself in the imagery of reports via a *conscious experience of* a rumbling belly and a salivating mouth. These signals not only beat 'on the door of consciousness', but also goad the hungry creature into the requisite food-seeking activity by providing clear motivational indications of what is required and where to put it (1962: 31). The organism may not know exactly where to seek what they now *feel* they need, but they are at least motivated *to seek*. To return to our flower metaphor, what we are calling the *affectivity* of the drive is thus the way it affects the organism via a conscious report (the flower) of organic activity (the roots).

Although it might be primary in 'lower' animals, Tomkins suggests that in the case of human beings the drive system is superseded in motivational importance by an 'affect system'. Drives, he suggests, can be weak unless *amplified* by affects. What we might normally attribute to the strength of a 'sex drive', for instance, Tomkins suggests is in fact the product of its *amplification* by specific affects such as excitement or enjoyment (or shame). The affect system is thus thought to have evolved because it met vital duplicative needs beyond the purview of the drive system, amplifying and supplementing drive functions to suit the requirements of an increasingly social species thrown into the challenging process of adapting to multiple and changing habitats. Like drives, affects exploit 'affectivity' to make things *matter* to the affected consciousness, but they vastly expand the scope of what can matter. A creature endowed with affects, suggests Tomkins, can be excited by novelty (and resistant to boredom), can enjoy the smile of a con-specific (and resist the experience of shame in the face of disapproval), and can want to remain alive (and fear and resist threats to its life).

Tomkins thus envisages an organically rooted 'affect system' composed of a small number of distinguishable positive affects (such as excitement and joy) neutral affects (e.g. startle) and negative affects (such as distress, fear, anger, disgust and shame). These affects are taken to be innate and biologically grounded in the sense that each is associated with its own characteristic pattern of biological activity, especially involving the face, and - in theory at least - its own neurological trigger for innate activation. As with drives, the principal role of their organic functionings is that paradox we are calling affectivity: it is to *become conscious* (to enter as an ingredient into a self duplicating stream of imagery); it is to supply distinctive *qualities* which pervade and enrich the imagery of conscious reports with information that is inherently motivational. One of the key qualities we experience when ashamed, for example, concerns the 'flower' of a conscious feeling *of our face* as it engorges with the blood of a blush drawn up, as it were, from its embodied roots. We might say that the informational dimension of affectivity, whether associated with 'drives' or 'affects', *clings to* and *moves with* the body. Tomkins thus contrasts such 'motivating information' with information provided by the senses, such as vision, which is motivationally neutral (unless amplified by affectivity).

Affectivity here is an aesthetic characteristic that, in a basic sense, adds a quality of inherent acceptability (self-rewarding) or unacceptability (self-punishing) to an experience. The affectivity of drives and affects differs, however, in important respects. As with the brief example of hunger above, feelings associated with drives convey some quite specific information about the 'where', the 'when' and the 'what' of required conduct, suggesting that drives are tightly coupled to that which causes them and that which satisfies them (we are always hungry 'about' food and eating behaviour typically reduces our hunger 'signals'). Affects, by contrast, are relatively loosely coupled: we can be made angry by virtually anything, and there are multiple ways in which that anger might be assuaged. The downside of this is increased ambiguity and error, since the feelings as such do not tell us precisely what is happening, nor what to do about it. This cost is nevertheless outweighed by the advantage of considerable flexibility. Despite their 'hard-wired' biological provenance, affects can thus be flexibly triggered by a range of 'natural' and 'social' events, and can remain open to the contingencies of learning and conscious control. These qualities make affectivity central to Tomkins' duplicative conception of consciousness since affects feed into the Images or blueprints for action, thought and decision. That is to say, each affective experience embodies the possibility of a lure for 'better' feelings yet to come. Crudely put, we aim (thanks to an end-state embodied in an Image) to duplicate good feelings by repeating the encounters associated with them, and to eliminate occasions of negative affect.

The child chased and bitten by a strange dog, for example, no more needs to learn the blend of panic, distress and fear that might be associated with this dangerous encounter than she needs to learn to feel the pain associated with the tissue damage. The heightened consciousness and potent imagery of this distressing affective scene – assuming it is not so potent as to provoke

repression – is likely to render it highly memorable to her. Subsequent encounters with dogs may then take on the affective qualities of the prior scene, becoming co-assembled with it into the broader unity that Tomkins calls a 'script' (i.e. an organised set of affective scenes). Such a 'dog phobia script' serves as an Image or blueprint, feeding the general assumptions (utmost abstractions) that are used to shape conduct relevant to future occasions (e.g. 'avoid strange dogs!'). In this way, affectivity affords the construction of a 'bridge' from an actual scene of experience to a potential future scene by way of a virtual memory. It would thus play a key role in the duplication of the imagery of consciousness which itself plays a key role in the duplication of the organism and its species.

Affectivity, technology, society

So far we have stressed the relevance of utmost abstractions to engagement with concrete specifics (including affective encounters) and we have looked at the most general assumption of one influential theory of affect. We have identified 'duplication' as Tomkins' most general assumption and shown how it controls and pervades the specific details of his theory, in which life in general is understood as a functional system defined by duplication. In what follows we wish to explore this utmost abstraction in more detail. We will start by saying that Tomkins' utmost abstraction is self-consciously *machinic* in character, in that it posits living systems as complex interlocking series of devices 'normed' to meet functional requirements through natural selection (i.e. by correlations between reproductive success and adaptation).

In fact, Tomkins is quite frank about the decisive way his theory was influenced by posing the following question: 'How should one devise an automaton to stimulate the essential characteristics of the human?' (p. 116). Such an automaton, if it is to be a 'formidable rival' of its creator, would need the technical equipment of a drive system and an affect system to motivate it to learn and to 'examine ways and means of maximizing its own self-rewarding responses and minimizing its own self-punishing responses'. Through adjusting these systems, the designer could then 'interest the machine in its own self-preservation' and 'interest such a machine in other machines like itself'. Here it is worth quoting at length what we might call 'Tomkins' dream' (since to be internally consistent, Tomkins must reflexively view his own imagery as *a dream he learned to have from a script he had not written*):

> The fragmentation and amplification of man's capacities by automata has been the rule: the microscope was a visual amplifier, the radio a speech and hearing amplifier, the steam shovel a muscle amplifier and the computer an intelligence amplifier. The next and final development of simulation will be an integrated automaton – with microscopic and telescopic lenses and sonar ears, with atomic powered arms and legs, with a complex feedback circuitry powered by a generalizing intelligence obeying equally general motives having the characteristics of human affects. Societies of such automata

> would reproduce and care for the young automata. How friendly or hostile to man they might become would depend on the design of the relative thresholds of these two affects and the conditions under which their circuitry was activated. (p. 119-20)

In drawing attention to the technological character of the most basic assumption structuring Tomkins' theory of affect we are beginning to address, from a particular perspective, some of the relations between affectivity, technology and society. In particular, we wish to invite reflection on the extent to which utmost abstractions about affectivity are shaped by - and in turn lend shape to – the changing forms of technology and scientific thought of the society in which they are articulated. New developments in techno-science will thus be associated with new ways of thinking about, acting upon, and perhaps experiencing, affectivity. We propose that, considered in the historical long term, these ways are patterned by utmost abstractions that become increasingly instrumentalist in character, until living systems as such, including their capacity for affectivity, come to be conceived as essentially tools at the service of their own duplication. To secure this point we will briefly distinguish four historical configurations of technology and affectivity.

1. The helmsman and the machine

The notion of a helmsman navigating a sailing ship, or indeed a charioteer managing the horses tethered to his wheeled chariot, is a common trope for understanding affectivity in the literature of classical Greece, and it continues with only minor variations throughout the medieval and early modern period (Grange, 1962). Plato used this trope, not just as a metaphor of political government, but also as a model for understanding the direction and government of 'oneself', including one's passions (see Foucault, 2005: 248-9). In the Platonic and Stoic literature passions are often understood as 'storms' (or animals) that, where possible, should be subdued by the reason-based skill of the helmsman since they are potentially fatal to the tranquility sought as the ideal state of being. Although there is evidently a reference to technology in these ways of conceiving affectivity, this reference differs markedly from Tomkins' assumption of an essentially mechanized nature and human nature. The human agency of the helmsman or charioteer is in this case distinct both from the technology in use (ship, chariot), and from the forces of nature 'at balance' in these technological assemblages (gusts of wind, surging tides, the unpredictable inclinations of powerful animals). Whether passions and affections are celebrated for their usefulness as healthy gales, or vilified as ship-wrecking forces, they are grasped in relation to a balance of forces involving a contrast between those things which can be controlled by a human agent and those things which are outside of human control. In short, neither the passions themselves nor the agents struggling to control them are construed as inherently technical, rather 'the technical' serves merely to mediate in a manner that enhances the powers of the helmsman *vis-à-vis* the forces of nature. The technological reference in these classical assumptions about affectivity is thus situated and grounded

in a broader, non-technical context: a context governed by quite different 'utmost abstractions'. In this classical context, the ultimate generalities are precisely not reducible to the technical practicalities that might be put to work in efforts to achieve them. They typically take the form of an art of life oriented towards ideals such as goodness, beauty and truth (Hadot, 1995). The practical reason associated with technology (i.e. means-ends reason oriented to an immediate method of action) is thus made subservient to a form of reason devoted to articulating a 'bigger picture' of ultimate purposes. Following Whitehead (1929/1958: 10) we might say that the fox-like reason of Ulysses is made subservient to the god-like reasoning of Plato.

2. The ghost in the machine[1]

Although it undoubtedly became increasingly sophisticated and varied, the type of technology familiar to Plato did not change fundamentally until the late 18th Century. Until then, devices like wheels, levers, cogs, sails and so forth were essentially deployed to harness, transmit and enhance 'natural forces', the most obvious being horse power, water power, wind power or person power (see Serres, 1992). A lever, for instance, serves to amplify human muscle power; a collar and harness serve to transmit the strength of a horse to the pulling of a wagon with its axels and wheels; a sail, properly controlled with mast and rigging, captures the wind to move a ship, and so forth. By contrast, natural philosophy did go through some radical transformations, notably in the 16th and 17th centuries, and particularly under the influence of figures like Bacon, Galileo, Descartes and Newton. Although the rupture with the Christianized Aristotelianism and neo-Platonism of the medieval period can be overstated, these developments constituted a shock to those medieval theories responsible for articulating the most general assumptions concerning the 'bigger picture' of human existence with its divinely ordained ultimate aims. With respect to affectivity, St Augustine of Hippo and St Thomas Aquinas had offered particularly influential medieval doctrines of the affections, and the most general assumptions of these doctrines were now challenged and modified (see Gardiner, et al, 1937 and Dixon, 2004). Consistent with this older tradition, Descartes continued to place special importance on the possession of a 'soul' and used this to draw a distinction between the natural world (including animals) and humans on the basis that the latter possess souls. This continuity is also expressed in the fact that Descartes recurrently adopts the image of the rational soul as pilot or helmsman of a bodily 'vessel' subject to passions likened to turbulent weather conditions, stormy waters, strong winds, and so forth (although, importantly, in the *Meditations* he also points to the limits of this metaphor with respect to grasping the different substantial natures at play). But Descartes also proposed the radical idea that all natural things, including the living bodies of plants, animals and humans, are to be understood as *machines created by God*:

[1] We borrow this phrase from Gilbert Ryle who used it to describe Descartes' dualism in *The Concept of Mind* (1949)

> We see clocks, artificial fountains, water mills and other such machines which, although man made, seem to move of their own accord in various ways; but I am supposing this machine [the human body] to be made by the hands of God, and so I think you may reasonably think [of it as] exhibiting more artistry than I could possibly ascribe to it. (1985, cited in Canguilhem, 1992: 53)

Here we see an important subversion of the classical distinction between *physis* (the concept translated into Latin as *natura*) and *techne.* The Greeks had used these terms to distinguish between phenomena that grow out of themselves in a self-creative self-bringing-forth (*physis*), and phenomena that are 'brought forth' not out of themselves, but by a craftsperson. By contrast, in what Whitehead (1948: 166) calls the 'physical synthesis' inaugurated by Galileo and completed by Newton, the natural world of *physis* is taken to be a form of *techne.* Artificial things are then *identified* with nature rather than contrasted with it. As Descartes put it:

> It is certain that all the rules of mechanics belong to physics, to the extent that all artificial things are thereby natural. Since, for example, when a watch counts the hours, by using the cogs from which it is made, this is no less natural for it than it is for a tree to produce fruit (1985, cited in Canguilhem, 1992: 59)

This mode of thought feeds into Descartes' account of 'the passions'. Here, affectivity (qua *the passions*) plays a mediating role between the substances of *extension* (passive physical machinery) and *thought* (the divine active principle). The passions are depicted as entirely passive perceptions of the active desires of the will, and hence something the mind should strive to gain dominion over. Note that in Descartes the assumption of a mechanistic universe flows directly from an utmost abstraction concerning the nature of God: namely that God is effectively a divine mechanic with motives beyond our comprehension. Nature shows up very differently on the basis of this reconfiguration. As in Beard's assumption that the crisps he had opened were *owned* by him, the modern settlement gives the 'ghost' rightful ownership of the 'machine'. Once we are authorized to model ourselves after the divine mechanic, our divine 'I' – in its splendid isolation as a distinct non-material substance – is effectively entitled to adopt an entirely instrumental and exploitative attitude to what is now cast as the extended machinery of nature. Lacking any purpose of its own, nature is now merely a means to serve human purposes.[2] The *affective* scene – of detachment from nature, soon to be followed by Romantic nostalgia – is thus set for the development of a new epoch of technology and technological domination, and a new socio-historical chapter of human affectivity. This new epoch is

[2] This point echoes an argument long made by eco-feminists, most notably Merchant (1980).

the one Heidegger critically addressed in *The question concerning technology* (1977).

3. The fire in the machine

Heidegger's critique refers to what he calls the 'modern machine-power technology' that developed only late in the 18th century, and that he describes by way of a contrast with an earlier modality. The sails of a windmill, he points out 'do indeed turn with the wind; they are left entirely to the wind's blowing' (1977: 14). Unlike a modern coal or nuclear power station, the windmill 'does not unlock energy from the air currents in order to store it'. A peasant might cultivate a field using horse and plough, but he does not challenge the soil of the land to put out coal and ore for stockpiling, as modern technology does. The old wooden bridge that joined bank to bank for so many years let the Rhine be the river it should be. By contrast, the modern hydroelectric plant extracts from its current a supply of electricity to be dispatched through a network of cables, and converts the river itself into something at our command: a water power supplier whose essence now derives from the power station. Even the old forester felling timber along the same forest path is, under modern technology, 'commanded by profit-making in the lumber industry… and made subordinate to the orderability of cellulose' (1977: 18). Modern technology, for Heidegger, is that which puts to nature the 'unreasonable demand' that it supply energy: it 'sets upon' nature as 'standing reserve'.

What is distinctive about this modern modality of technology, in short, is that it does not rely on merely transmitting the external ('natural') force of muscles, wind and water, but invents, operates with and contains its own power source, *transforming* 'nature' as it does so (Serres, 1992). This is the technology of the industrial revolution, technology with an *engine*: a *combustion* engine. Although this fire-based technology has ancient origins, its real possibilities were unleashed only after James Watt used a condenser to optimize thermodynamic efficiency in the years between 1763 and 1775. The early coal-powered steam engines that followed could dispense with horses in favour of 'horse power': a power source based on controlling explosive pressure and extreme heat (see Serres, 1992). By way of this new technology the feudal landscape was transformed into the industrial city; the determinate laws of Newtonian mechanics give way to the stochastic chaos of thermodynamics; orderly biological taxonomy was thrown into the blind future of evolutionary time; and the pastoral landscapes of a Constable became the hazy clouds and red fires of a Turner.

It is no accident that the semantics of affectivity also melt down and transform in the crucible of this epoch. It is precisely during the late 18th and early 19th century that the terminology undergoes a marked shift from a vocabulary of affection, sentiment and passion towards an increasingly widespread use of the term 'emotion' (Danziger, 1997, Dixon, 2004). This shift in terminology, we suggest, reflects the replacement of the Cartesian 'ghost in the machine' with the 'motivational' energy of a motor. It goes hand in hand with a gradual but systematic erosion of the idea that human

conduct might be governed by the teleological reasoning of a subject possessed with something like a will. Following Hutcheson, Hume, for example, rose to notoriety by insisting that reason alone can never motivate any action. Although it was hardly used at the time and would have been strangely unfamiliar to his readers, Hume frequently used the word 'emotion' in this context, exploiting its physical association with *motion* to stress its centrality to the motivation of action (Danziger, 1997: 40). By the early 19th Century this new concept was well established, and indeed was core to the medically oriented psychology of Thomas Brown in which 'emotion' designated all non-intellectual states of mind (see Dixon, 2004). As we also see in La Mettrie's *L'Homme Machine* (1748), these thinkers no longer considered it necessary to exempt 'the soul' from the category of *natural machine*.

When understood as emotion at this juncture, then, affectivity comes to figure precisely as a more or less primitive *energy source* at the organic core of the human animal/machine: as the fire, steam and pressure of a hydraulic thermodynamic system, for instance. Given the eroded plausibility of teleological reasoning, this imagery replaces the technically mediated balancing act of passivity and activity that had been central to the passions and affections. This move is central to the development of psychology as a scientific discipline. It is clearly expressed, for instance, in the work of Alexander Bain (1811-1877), who talked of a central organismic energy source that does not require the application of 'outward stimulants'. This Bain conceived as 'a central fire that needs no stirring from without' (1977: 329 and 305). It seems that, by the end of the 19th Century, this notion was shared by theorists with otherwise divergent programmes of research, including Hughlings Jackson's evolutionary neurology, Freud's patently hydraulic psychodynamic model, and James' psychology. In each of these cases, parallels were drawn between the emotional energies of individuals and the social energies of populations, both of which were considered subject to technological intervention. Hence in *The Energies of Men*, James (1914: 14 and 15) surmises that a nation filled with individuals 'energizing below [their] maximum' because their 'fires are damp' will be inferior to a 'nation run at higher pressure'. The technological origins of the concept of 'drive' (which came to dominate psychology in the 1930s) are made quite explicit by one of the inventors of this concept: 'I am sure I did not derive the word from any previous psychologist. I got it from mechanics. A machine has a mechanism, such that if it is put in motion it operates in a certain way; but it must be driven in order to move. The "drive" of a machine is the supply of energy that puts it in motion' (Woodworth, 1918, cited in Danziger, 1997: 119).

4. The meme in the machine

Technological innovations have come thicker and faster than ever over the last century, but perhaps the most significant among them was the development of the information and communications technology and theory associated with the digital computer. With respect to assumptions about affectivity, this returns us to Tomkins' cybernetic theory of affect, which was

part of a 'cognitive revolution' that transformed the discipline of psychology around the 1960s by providing scientifically acceptable models of human mentality as *information processing.* We have seen, for instance, how Tomkins combines notions of drive (associated with the 'fire in the machine' configuration) with the notion of a maximally informational duplicating mechanism associated with consciousness. It is not difficult to link this to a contrast between a steam train (maximum energy, minimum information) and a computer (which needs just a small amount of electricity to power its massive informatic capacity). Later, highly influential cognitive theories of emotion would come to practically ignore the energetic dimension, giving the topic of emotion a distinctly 'cool' character (e.g. Arnold, 1960; Schachter & Singer, 1962; Mandler, 1975). No longer preoccupied with the containment and productive channelling of massive internal forces, cognitive theories turn instead to a 'constructivist' concern with modes of appraisal and communication of meaning. Schachter & Singer's (1962) famous 'two factor' theory, for instance, involves a double act of energy and information that stages the dominance of the latter. The dumb but hot energy of physiological arousal (supposedly simple and undifferentiated) is played against the smart and cool informational business of cognition, to argue that specific emotions are differentiated by attributions from the cognitive system. From here it is a short step to the *social* constructionism of Averill and others, who point out that the content of the information at play is largely second-hand and collectively shaped.

Political machines: 1642

This historical sketch of four distinguishable configurations of technology and affectivity serves to illustrate the sense in which Tomkins' theory is indeed like *a dream he learned to have from a script he had not written*. Tomkins may have invented the details of his theory, but the utmost abstraction in terms of which these details are framed is one that he inherited, as the provisional culmination of a long development in Western thought and society. We have suggested that this utmost abstraction subordinates the thought of all concrete facts to a form of instrumental or means-end rationality. In this framework, the value of nature and of all things in nature is no longer conceived as intrinsic or as a possible object of philosophical speculation; it is given rather empirically, to the extent that something can perform a function deemed useful. Ultimately, as we see in Tomkins, the definition of living beings as such is one that foregrounds their ultimate function: they are conceived as tools at the service of their own duplication. At this juncture it is important to give due recognition to the *political dimension* at play in the historical consolidation of the instrumentalist utmost abstraction. We wish to suggest that this abstraction was not simply a philosophical and narrowly technological concern, but that it came to assume fundamental political importance. It may indeed be considered the conceptual cornerstone of the political machinery of the modern epoch. Machiavelli's influence looms large here, but we suggest that the laying of this cornerstone had to wait upon the 17th Century developments in natural philosophy sketched earlier. Although all such

datings are ultimately arbitrary (see Whitehead, 1948), we propose the year 1642 to symbolize this development.

1642 was the year of Galileo's death and of Newton's birth, but it was also the year in which Civil War broke out in England. In 1642 Thomas Hobbes was living in exile in Paris incubating ideas for his *Leviathan* (1651). These ideas effected an instrumentalist integration of Body, Man and State conceived in the light of the new physical doctrine of motion. A meditation on affectivity was fundamental to Hobbes' proposed integration of physical, psychological and political law, and would remain fundamental thereafter. Inspired by the accounts of the passions offered by Aristotle and Thucydides, but informed by the mathematical method of modern physical science, Hobbes reasoned that it is only through accurate knowledge of the passions, sentiments and affections that one can work out the best way of ordering social relations (the right way of living) and thus the optimal form of State. Although the parallels with Tomkins should not be overstated, it is notable that Hobbes preempts Tomkins, not just in proposing that human beings should think of their bodies, their affections and passions and their selves as machines (for Hobbes, unlike Descartes, human being is graspable in its entirety as a force of nature), but also in stressing the fundamental relevance of self-perpetuation in time. Hobbes' equivalent to Tomkins' most general assumption of duplication is, as we shall see, the utmost abstraction of *self-preservation*. Hobbes' work is precisely about making self-preservation the fundamental assumption – the common denominator (literally, the interest held in common by all) informing the organization of social order by way of a naturalistic and instrumentalist self-understanding of human nature.

In brief, for Hobbes, human beings are physical organisms undergoing bodily motion guided, where possible, by a will newly defined as an *appetite*, namely, 'the last appetite on deliberating' (Hobbes, Leviathan, Part 1, Chapter 6). Again, as with Tomkins, *motivation* is a key concept, but motivation defined strictly in relation to *affective* aversions and desires oriented to maximize pleasure and to minimize displeasure. Reason is in turn naturalized and understood in terms of the worldly *calculations* of a desire machine (see Stenner, 2004). Indeed, there is a strikingly Hobbesian feel to Tomkins' proposals, cited above, that a social and human engineer must 'interest the machine in its own self-preservation' and 'in other machines like itself'. Hobbes' work is precisely about interesting human machines in other human machines such that they might form a covenant to bond together in the generation of the societal mega-machine he called *Leviathan.*

Leviathan, Hobbes stresses, is 'that mortal god, to which we owe… our peace and defence' (Part II, Chapter 17). Unlike an immortal God, this god shares our individual needs and desires for self-preservation, and hence self-preservation is the primary motive in Hobbes' system. Indeed, it is so important that Hobbes redefines the very concept of *natural right* in its terms. *Jus Naturale,* after Hobbes, 'is the liberty each man hath, to use his own power, as he will himself, for the preservation of his own nature; that is

to say, of his own life; and consequently, of doing any thing, which in his own judgement, and reason, he shall conceive to be the aptest means thereunto' (Part I, Chapter 14).

It is, of course, this very natural right to be author of one's own self-preservation that *must be given up* in the process of signing the covenant that generates *Leviathan.* Each subject must hand over their natural right to what then becomes authorized as the unchallengeable sovereign power: '*I authorize and give up my right of governing myself, to this man, or to this assembly of men, on this condition, that thou give up thy right to him, and authorize all his actions in like manner*' (Part II, Chapter 17). Self-preservation is thus the most general assumption because it is construed as the primary (if often hidden) motive. If the passions that come into play in pursuing our own individual natural rights to self-preservation can be shown to lead inevitably to a chaos of uncontrolled violence (a 'war of all against all') then, paradoxically, our self-preservation in fact depends upon giving up our natural right to self-preservation. That is to say, if we agree to define ourselves as self-preserving automata in this way, then we must *will* our subjection to the norms of a social body.

It is striking that *fear of death* haunts the concept of self-preservation – fear of death in the chaos of the war of all against all, and fear of death at the sword of the sovereign in case of disobedience. It is only through fear of extinction that people can be brought face-to-face with the self-evidence of the perpetual and pressing need for self-preservation. Strauss (1963: 128) calls this the 'principle of fear' and suggests that it is 'in the movement from the principle of honour to the principle of fear [that] Hobbes's political philosophy comes into being'. Aristocratic honour, from Hobbes' perspective, makes the mistake of putting the values of dignity and respect before the value of life, and hence poses an obstacle to any willed subjection to a rational social order. In the name of avoiding fear we are lured towards the *convenience* proper to a life lived according to instrumental reason:

> The condition of man in this life shall never be without inconvenience; but their happeneth in no commonwealth any great inconvenience, but what proceeds from the subjects' disobedience, and breach of those convenants, from which the commonwealth has its being (Part II, chapter 10)

Through such arguments, Hobbes himself claimed to have made a break with the whole prior tradition of political philosophy, and, according to Strauss (1963: 1) it is 'almost universally admitted that Hobbes marks an epoch in the history of natural law and of the theory of the state'. Strauss goes further and concludes that Hobbes posed the fundamental question of modern politics, such that this 'moment was decisive for the whole age to come; in it the foundation was laid, on which the modern development of political philosophy is wholly based, and it is the point from which every attempt at a thorough understanding of modern thought must start' (1963: 5). Whether or not we accept this claim, it seems clear that it is through the application of the mathematical methods of Euclid and Galileo that Hobbes

is able to claim a truly scientific form of politics (i.e. political science) capable of working out how to live rightly in the context of a rightly ordered society. After Hobbes, the State can no longer be considered an entity guaranteed by the will of a presiding deity, but must rather be seen as a more or less rationally conceived artifice (a political machine), designed by people for the purpose of their own self-preservation by way of *its* own self-preservation. After Hobbes, rights no longer refer to the entitlements proper to different positions within a divinely ordained hierarchically differentiated social order (Stenner, 2004). Instead, they come to be considered as the inalienable attributes of human beings *as such*, irrespective of one's position or status in a given social order. The ultimate reason for society is self-referential and given in advance: the self-interested self-preservation of one-self.

Obviously Hobbes' ideas went through innumerable challenges and modifications, but it was this transformed conception of basic, natural or human rights (i.e. rights as grounded in a thoroughly instrumentalist account of human nature as it supposedly exists beyond and before society) that was to provide the basis, first for the great political revolutions in America and France, and thereafter, in principle at least, for practically all modern polities (a rights-based constitution is the basic pattern of recognized nation states in the 21st century). Following the pattern established by Hobbes, the self-consciously *scientific* scrutiny of human affectivity comes to take place alongside a political project of founding and legitimating the social order: questions of political foundation meet with 'psychological' answers concerning affectivity.

As we think, we live[3]

We began our argument with McEwan's story about Beard's encounter on a train and we used this anecdote to show how a fundamental assumption configures the significance of each moment of such an encounter. Much like Beard's assumption, Tomkins' instrumentalist abstraction pervades his theory of affectivity; if it turns out to be impoverished, then the lives lived on its basis will also be impoverished. In this concluding section we turn to examining some of its limitations, and point the way for a reframing of affectivity based on process thinking (see Brown and Stenner, 2009; Stenner, 2011).

We propose that Tomkins' account unfolds within the horizon set by Hobbes, where human nature is framed in terms of the impulse towards self-preservation. Although Tomkins' concept of duplication is superficially different from that of self-preservation in that it points to a generative process (of further individuals), it nevertheless renders that creative process in fundamentally *conservative* terms. Self-preservation and duplication alike imply *more of the same* rather than creative difference. Furthermore: Hobbes' *Leviathan* demonstrates the rational connection between vitality understood as an impulse towards self-preservation, and

[3] Whitehead, 1948: 148

life lived according to the norms set by the polity. If this is how we understand human nature, according to Hobbes, then it is irrational to do anything but subordinate our own will to that of the sovereign, and indeed we should fear the consequences of doing otherwise. In this sense, the logical conservatism implicit in the concept of self-preservation feeds into a form of political and ethical conservatism: the possibilities of our art of life are understood to coincide with those already set out by the State within which we happen to live.

Georges Canguilhem (1958; 1992) argued that a similar conservatism is implicit, by default, in the ambition to provide a psychology understood as a 'biology of human behaviour'. Modern scientific psychology, Canguilhem argues, defines itself as such by a refusal of all philosophical speculation on human nature in favour of a general theory of the relations between organisms and their environment. A psychology conceived in this way, however, is unable to account for the 'psychology of the psychologist', that is, for the nature (and the motivations) of a being who seeks knowledge about itself. Modern psychology, in other words, is specifically characterized by a 'constitutional incapacity' to clearly articulate its own 'founding project'. The figure of the psychologist, devoid of any project that might derive from an idea of the values proper to the human *qua* human, finds an implicit raison d'etre in its social *usefulness* – in the extent to which it maximizes the utility of individuals, or facilitates their adaptation to the requirements of a social milieu. The psychologist, then, is the ultimate 'instrument of the instrumentalisation of man'. A life thus 'adapted', however, is an impoverished life in so far as there is nothing necessary or inevitable about the norms of a social milieu. To quote Canguilhem:

> The psychosocial definition of the normal in terms of adaptedness implies a concept of society which surreptitiously and wrongly assimilates it to an environment, that is, to a system of determinisms when it is a system of constraints … To define abnormality in terms of social maladaptation is more or less to accept the idea that the individual must subscribe to the fact of such a society, hence must accommodate himself to it as a reality which is at the same time a good. (1989: 282-3)

Hobbes, of course, sought precisely to achieve this outcome whereby the individual subscribes to the simultaneous facticity and goodness of the social order, in the name of the tendency towards self-preservation as the most fundamental feature of life. For Canguilhem, however, the fact of accepting and taking for granted the imposition of external norms is somewhat antithetical to the definition of a healthy, vital life. In fact, Canguihem's utmost abstraction concerning living processes is quite the opposite: the chief characteristic of living beings is their *normativity*. Normativity is precisely not adaptation to imposed norms, but a relative creativity in the face of contradictory norms; a tolerance of infractions of norms; and, most significantly, a forward thrusting creative tendency to set *one's own* norms (1992).

A.N. Whitehead (1929/1958) adopts a similar position in criticising the limitations of the evolutionary doctrines of adaptation, struggle and survival - doctrines which echo the Hobbesian emphasis on life as mere preservation in the face of fear, and Tomkins' emphasis on mere duplication. For Whitehead, this conservative stance can be maintained only by way of a studied ignorance of the creative aspects of evolution. 'Why has the trend of evolution been upward?' (1929/1958: 8), he asks, and how make sense of the fact that this upward trend is, if anything, accompanied by the converse relation whereby the more sophisticated animals progressively adapt the environment to themselves, and not vice versa? – 'in the case of mankind this active attack on the environment is the most prominent fact in his existence' (1929/1958: 8). In Whitehead's philosophy it is not duplication but *creativity* which holds pride of place as the utmost abstraction or 'Category of the Ultimate'. Creativity is 'the universal of universals characterizing ultimate matter of fact' (1978: 21). When Whitehead (1929/1958: 8) discusses life, he invokes, not a technology, but an *art of life:* 'a three-fold urge: (i) to live, (ii) to live well, (iii) to live better'. Whitehead makes an explicit contrast between the *art of persistence* and the *art of life.* Life itself, he points out 'is comparatively deficient in survival value. The art of persistence is to be dead. Only inorganic things persist for great lengths of time' (1929/1958: 4).

It is here that we can return to Tomkins' unexamined distinction between non-living and living systems. The problem with this distinction, as seen from a Whiteheadian perspective, is that it retains the materialistic residues of the now outmoded first physical synthesis (see above). This synthesis involved the bifurcation of nature into a realm of purely material objectivity purged of subjectivity (i.e. affectivity, teleology, experience), and a realm of purely transcendent subjectivity, when what is required is a unified account of an inclusive immanent totality. We say 'residues' because clearly Tomkins has moved beyond any crude version of this bifurcation by incorporating a theory of subjectivity into an account of living systems unified by the concept of duplication (consciousness and affectivity are fully natural processes for Tomkins). Tomkins theory is certainly not materialistic in the crude sense that reality is ultimately made up of self-contained spatially related 'bits of matter'. In fact, the concept of duplication places emphasis, not on materiality as such, but on *process,* since duplication is not a material entity but an *activity*. Nevertheless, the theory retains an unexamined bifurcation between the physical and the living, resting as it does upon an implicit concept of the physical world of non-living systems. This assumed physical substratum, it seems to us, continues to play the role of absolute underlying material reality. Hence in Tomkins' account, affectivity, despite being granted a real existence as a decisively important component in living human systems, is nevertheless something of a high-level epiphenomenon traceable to an origin that is, in the final analysis, purely material. Affects like fear, shame and joy are, in the final analysis, nothing but perceptions derived from the operations of bodily functionings which themselves have no affective dimension. As perceptions derived from organic activity they remain qualities of a subject, qualities that colour an otherwise colourless

and affect-free material world with their distinctive aesthetic tones. Affectivity is not really a consequential part of the real world except to the extent that the colours that it projects onto the world might change our conduct.

From a Whiteheadian perspective, these assumptions obscure any genuinely creative and transformative aspects of affectivity, and result in a weakened concept of affectivity understood as a mere quality of conscious experience superimposed upon a supposedly unfeeling substratum of duplicating machinery. The assumptions flow from a residual tendency to explain living phenomena in terms of what we think we know about non-living phenomena. In proposing a philosophy of *organism* Whitehead (1929: 19) reverses this tendency: 'The problem set by the doctrine of evolution is to explain how complex organisms with deficient survival power ever evolved… Mankind has gradually developed from the lowliest forms of life, and must therefore be explained in terms applicable to all such forms. But why construe the later forms by analogy to the earlier forms? Why not reverse the process? It would seem to me more sensible, more truly empirical, to allow each living species to make its own contribution to the demonstration of factors inherent in living things'.

Rather than explaining the living by reference to the non-living, from this reversed perspective, all events, including those that make up the so-called 'physical' world, are duly conceived on the model of the organism. The immanent principle of unity is that all existent reality is 'composed of organisms enduring through the flux of things' (Whitehead, 1926/1985, p. 251). For Whitehead, rocks no less than rabbits are composed of a complex manifold of contemporary and ongoing events or 'actual occasions', such that the former may be referred to as lower types and the latter as higher types of organism. The difference is that the lower types are comparatively stable. Because the events that compose them are repetitive and conformal, they come to exhibit a massive sameness. Tomkins' concept of duplication is perfectly applicable to them, but not to the higher types whose enduring pattern is more abstract and precarious. The higher types, for example, both presuppose and, to some extent, *include* the lower types within their structures. A living cell, for example, is a structured society of occasions that includes within it a multiplicity of subordinate societies composed of non-living molecules arranged in more or less intricate structural patterns. Life is thus characterized less by the securing of duplicative survival than by what we (e.g. Stenner, 2011: 55) call its *in-securing*.

Affectivity within this way of thinking is not epiphenomenal but fundamental. The process of 'duplication' whereby the events composing the lower types of organism give rise repetitively to identical events is, for Whitehead, a process of *conformal feeling*. Feeling is not just an accompanying 'quality' but literally a process of grasping or prehension whereby an actual occasion/entity patterns the heterogeneous data of its actual world into a unity. Feeling is this very process of creative synthesis, but in the case of the conformal feelings of lower organisms, novelty is at a mimimum, and hence physical events tend merely to repeat their precursors

and contemporaries. Higher organisms, by contrast, trade the stability of mere survival for the heightened intensity of feeling made possible by complexity. The former live in the past, being determined by tradition, the latter aim for an unrealized future as they clutch at the vivid immediacy of the present.

Whitehead makes explicit his most general assumption concerning affectivity when he writes that there is 'nothing in the world which is merely an inert fact. Every reality is there for feeling: it promotes feeling; and it is felt'. This general assumption makes affectivity, in the guise of feeling, an integral and decisively important aspect of nature - human and non-human, living and non-living, and, decisively, the site of the novelty of becoming: 'each actual entity is conceived as an act of experience arising out of data. It is a process of "feeling" the many data… Here "feeling" is the term used for the basic generic operation of passing from the objectivity of the data to the subjectivity of the actual entity in question. Feelings… effect… a transition into subjectivity.' (Whitehead, 1927/8, p.41). If feelings are operations which effect a transition from the objectivity of data to the subjectivity of the actual occasion in process of formation, then obviously this proposition entails a concept of affectivity that incorporates far more than the conscious experience of human beings, whilst nevertheless also *including* such experience *as* a type of high-grade feeling. Feelings are always feelings of feelings past, and they always urge towards future feelings in the making. Feelings become conscious feelings only in the context of the later phases of experience of very complex high-grade organisms. These later phases build upon and develop (i.e. *feel*) a veritable cascade of unconscious experiences grounded in physiological activity, even as they build upon and develop (i.e. *feel*) the conscious experience, now spent, of a moment before.

Returning to the example from our novel, McEwan tells us that Beard experienced a flash of heightened consciousness on discovering the packet of crisps in his jacket pocket. As we draw to our conclusion, it is worth dwelling briefly on this fleeting event. Beard's flash of consciousness, writes McEwan, 'felt like liberation, strangely like joy' (2010: 127) . It was, in other words, a flash of affectivity, illustrating how consciousness develops from the feeling of *something that matters*, a significant contrast or difference. Without denying a place for stability and repetition, we hope to have contributed to a similar contrast, a certain liberation of the concept of affectivity from the strictures of instrumentalism.

References

Arnold, M. B. (1960). *Emotion and personality.* New York: Columbia University Press.

Bain, A. (1855 & 1859/1977). *The senses and the intellect* and *The emotions and the will.* Ed. D.N. Robinson. Washington, DC: University Publications of America.

Blackman, L and Venn, C (2010). *The Body and Society: special issue on affect.* volume 16 (1).

Brown, S. and Stenner, P. (2001). Being Affected: Spinoza and the psychology of emotion. *International Journal of Group Tensions*, 30 (1): 81-105.

Brown, S. and Stenner, P. (2009). Psychology without foundations: history, philosophy and psychosocial theory. London: Sage.

Canguilhem, G. (1958). Qu'est-ce que la psychologie? *Revue de Metaphysique et de Morale*, 1, 12-25.

Canguilhem, G. (1992). Machine and organism. In J. Crary & S. Kwinter (Eds.), *Incorporations*. New York: Zone Books.

Clough, P and Halley, J (2007). *The Affective Turn: theorizing the social*. Duke University Press.

Danziger (1997). *Naming the mind: how psychology found its language.* London: Sage

Descartes, R. (1985). Treatise on man (AT XI.119-20). In *The philosophical writings of Descartes*. Cambridge: Cambridge University Press.

Descartes, R. (1998) *Meditations and other metaphysical writings*. London: Penguin.

Dixon, T. (2004). *From passions to emotions: The creation of a secular psychological category.* Cambridge: Cambridge University Press.

Foucault, M. (2005). The hermeneutics of the subject. Basingstoke: Macmillan.

Gardiner, H. M., Metcalf, R. C. & Beebe-Center, J. G. (1970). *Feeling and emotion: A history of theories.* Westport, CN: Greenwood.

Grange, K. M. (1962). The ship symbol as a key to former theories of the emotions. *Bulletin of the History of Medicine*, 36, 512-523.

Greco, M and Stenner, P (2008) *The Emotions: a social science reader*. London: Routledge.

Gregg, M and Seigworth, G. J (2010) *The Affect Theory Reader*. Duke University Press.

Hadot, P. (1995). *Philosophy as a way of life*. Oxford: Wiley-Blackwell.

Heidegger, M. (1977). The question concerning technology. In *The question concerning technology and other essays*, trans. W.Lovitt. New York: Harper and Row.

Hobbes, T. (1651/1985). *Leviathan.* St Ives: Penguin Classics.

James, W. (1914). *The energies of man*. New York: Moffat, Yard and Co.

Mandler, G. (1975). *Mind and emotion*. New York: Wiley.

Massumi, B. (1995). The autonomy of affect, *Cultural Critique,* 31(2): 83-109.

McEwan, I. (2010). *Solar*. London: Jonathan Cape.

Merchant, C. (1980). *The death of nature. Women, ecology and the scientific revolution.*

Ryle, G. (1949). *The concept of mind*. Chicago: University of Chicago Press.

Sedgwick, E.K. and Frank, A. (1995). Shame in the cybernetic fold: reading Silvan Tomkins, *Critical Inquiry,* 21 (2): 496-505.

Serres, M. (1992). *Hermes: literature, science, philosophy* (Eds J.V. Harari & D.F. Bell). Baltimore: John Hopkins University.

Schachter, S. and Singer, J. E. (1962). Cognitive, social and physiological determinants of emotional state, *Psychological Review,* 69, 379-399.

Stenner, P. (2004). Psychology and the Political: On the psychology of natural right and the political origins of modern psychology. *International Journal of Critical Psychology,* 12: 14-37.

Stenner, P. (2005). An outline of an autopoietic systems approach to emotion. *Cybernetics and Human Knowing,* 12 (4): 8-22.

Stenner, P. (2011). Psychology in the key of life: deep empiricism and process ontology in P. Stenner, J. Cromby, J. Motzkau, & J. Yen (Eds) Theoretical psychology: global transformations and challenges. Captus: Concord, Ontario, Canada.

Strauss, L. (1963). *The political philosophy of Hobbes. Its basis and its genesis.* Chicago & London: University of Chicago Press.

Tomkins, S. (1962). *Affect, imagery, consciousness*. Vol. 1. New York: Springer Publishing Company.

Weil, S. (2002). *The need for roots*. London & New York: Routledge

Whitehead, A. N. (1926 / 1985). *Science and the modern world*. Free Association Books: London.

Whitehead, A. N. (1929/1958). *The function of reason*.

Whitehead, A. N. (1948). *Essays in science and philosophy*. London: Rider and Company.