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What is Called ‘Process Thought’: A transdisciplinary process ontology for psychosocial studies

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Abstract

Transdisciplinary in nature, psychosocial work has drawn on a range of theoretical inspirations. This contribution builds on prior theoretical work to make the case that ‘process thought’ is a good candidate for inspiring the sort of ‘metatheory’ that is not only helpful to researchers concerned with the psychosocial relation, but also for integrating different research traditions. ‘Process thought’ is here used to name a tradition of thinking, like the expression ‘continental thought’. The purpose is to give content to what is called ‘process thought’ and to show its relevance to the psychosocial domain. The event-centred relational ontology of process thought is outlined, along with its epistemology of ‘deep empiricism’. Process thought is presented as a ‘tradition’ of thought for which a history of the present is directly relevant, and A.N. Whitehead’s work is discussed as an exemplar. The sources of process thought are traced philosophically in the tension between endurance and flux and an account is given of the adventures of ‘substance thought’ from Greek philosophy to modern scientific materialism. The explicit emergence of process thought in the West is traced to the nineteenth century, and its entanglements with the emergence of modern psychology (including that of Freud) in Europe and North America are highlighted, along with its attack by new forms of substance thought in the early twentieth century.

Keywords

Process thought, A.N. Whitehead, Freud, new materialism, history of the science, philosophy, ontology, epistemology, psychology

Introduction:

‘... know that in being ourselves we are more than ourselves’ (Whitehead, 1985, p.26-7)

Transdisciplinary in nature (Stenner, 2014, 2015, 2017), psychosocial work has drawn on a range of theoretical inspirations. The premise of this contribution is that - difficult and abstract though it may be - it is wise to discuss metatheoretical issues of ontology and epistemology as openly as possible. It builds on prior theoretical work which makes the case that ‘process thought’ is a good candidate for inspiring the sort of ‘metatheory’ that is not only helpful to researchers concerned with the

psychosocial relation, but also for integrating different research traditions. ‘Process thought’ is here used to name a tradition of thinking, like the expression ‘continental thought’ (see Weber *et al*, 2008, Dibben and Kelly, 2013). The purpose is to give some content to what is called ‘process thought’ and to show its relevance to the psychosocial domain. Two caveats should be noted. First, the word ‘thought’ does not imply a lack of concern with things like ‘affect’ or ‘bodies’ or ‘practice’ or even ‘writing’. Indeed, recent turns to affect, practice, embodiment, and ‘new materialism’ are considerably inspired by process thought (on affect and mood see Bösel and Wiemer, 2020 and Wrbuschek and Sluneco, 2021a&b, on bodies see Greco, 2019, on materialism see Barad, 2007, on practice see Pickering, 1995, Motzkau, 2011). Second, ‘integrating different research traditions’ need not imply imposing some overarching ‘grand theory’. This author has long challenged the imposition of reductive theoretical unity (see Curt, 1994, Brown and Stenner, 2009). A condition of process thought being a valuable metatheory is that it accommodates multiple realities, encourages empirical curiosity about otherness, and remains *open* to a future whose business it is to remain unfinished (Braidotti, 2013).

With respect to psychosocial studies, process thought has already supplemented and enriched more familiar theoretical approaches like psychodynamics (Stengers, 1990, Cabra, 2021, Zittoun, 2021), feminist epistemology (Braidotti, 2011), post-colonial theory (Savranksy, 2012), social constructionism (Stenner, 2007, 2009, Stengers, 2009), new realisms and materialisms (Bradley, 1994, Bennett, 2010)), performativity or ‘enactive’ theory (Isin and Saward, 2013, Bell, 2012), critical socio-cultural psychology (Motzkau, 2009, Anderson, 2017, Andreouli et al, 2019), Marxism (Toscano, 2006) and post-structuralism (Keller and Daniels, 2002, Nichterlein and Morss, 2017). It can open new insights for empirical research (Weber *et al*, 2008, Stenner and Weber, 2018). It can help with navigating the treacherous territory of a landscape dominated by vicious dualisms. It removes the obligation to be *either* realist *or* constructivist, *either* rationalist *or* emotivist, *either* universalist *or* historicist, *either* naturalist *or* culturalist, *either* determinist *or* advocate of choice, and opens a ‘liminal’ path showing these up as illuminating contrasts rather than mutually exclusive alternatives (Wagoner and Zittoun, 2021).

As detailed below, philosophically speaking, ‘process thought’ is the most potent alternative to the modern dualistic modes of thought derived from Descartes and Kant. These reinforced a *bifurcation of nature* whereby matters of fact - defined by modern natural science - were cleaved apart from subjective matters of value (Stengers, 2000). In this context, issues of feeling, emotion and value were viewed as mere internal subjective reactions (ultimately socially shaped subjective constructions) to facts which are in themselves emotionally and evaluatively neutral. From this bifurcated perspective feelings and values - far from connecting with reality - show up as an epistemological obstacle to objectivity, at best relevant to aesthetics. From a process perspective, by contrast value is the *intrinsic reality* of an event and feeling is the *feeling of actualities by actualities*. ‘The basis of experience is emotional’ (Whitehead, 1933, p.226).

Ontology, epistemology and ethics

There are changes, but there are underneath the change no things that change: change has no need of a support. There are movements, but there is no inert or

invariable object which moves: movement does not imply a mobile (Henri Bergson, 1946).

This section offers a rapid and abstract metatheoretical summary to be fleshed out in the remaining sections. Process thought offers a distinctive *ontology* (theory of what is real) *epistemology* (theory of knowledge) and *ethics*. An advantage of the *ontology* is that it is unified. It does not require one ontology for the social sciences and arts and another for natural sciences. Ontologically, the basic real things in the universe are not self-contained material entities but interconnected occasions, happenings, activities or *events*. This is an *event centred ontology* or a *relational process ontology* (Brown and Stenner, 2009). It is often contrasted with ‘substance ontology’ (see Stengers, 2012) for which the basic reality is unchanging self-contained material substance. Substance ontology, discussed below, assumes that ultimate entities cannot themselves be events because the existence of a substance must come before the possibility of an event involving that substance. But, common-sensical though it seems, this is incompatible with modern science which construes macroscopic and atomic entities alike as complex activities involving energy modifications affected by context (Barad, 2007). The notion of inert ‘stuff’ or matter has been superseded by *activity* or better *actuality* (that which *acts*). For process ontology an ‘entity’ does not first exist (e.g. as a formed substance) and then act within an event. Rather, its existence *is as* enaction or *is* its actuality: an actual entity *is* an actual occasion (an ‘actual occasion’ being a minimal event). For ‘form’ to exist materially it must be *enacted*. What we call ‘meaning’, say in the event of a conversation, is just as ‘materially’ enacted as the physico-chemical process yielding crystal (see Simondon, 2020a).

The *epistemology* of process thought has been called ‘deep empiricism’ (Stenner, 2008, 2009, 2017). This is tightly consistent with the enactive event ontology. As discussed further below, each actual occasion is conceived on analogy to an experience through which a subject becomes through encountering its objects or data. The source of the analogy is the high-grade human experience we are all familiar with. But process thought radically extends the meaning of terms like ‘experience’, ‘subjectivity’ and ‘feeling’ (see Rodrigo, 2018). Cognisance of this extension is crucial if *anthropomorphism* is to be avoided. Hence ‘experience’ is *any process* of receiving objects and lending them a selective pattern. That process is composed of ‘feelings’, where feeling is defined as any *prehension* of the world beyond the feeler *by* the feeler. An amoeba prehending a food molecule by means of a pseudopodium, for example, is ‘feeling’ that molecule as part of its ‘experience’. Defined thus the words ‘experience’ and ‘feelings’ obviously need not refer to conscious states (as in a ‘felt state’). They refer to *acts*. Furthermore, experience refers to *acts of prehension as viewed from the perspective of the activity itself*. If a human observer watches an amoeba feed then that is an actual event for the experience of the human observer. But while being observed, the amoeba too *goes through* its own experience of prehending the molecule. *That* actual occasion is certainly not complex enough to give rise to a conscious awareness on the part of the amoeba. It is unconscious, but actual. On this basis, process thought has made significant contributions to theorising the emergence of consciousness from unconscious experience (see Griffin, 1998, Pred, 2005, Weber and Weekes, 2009). Opposed to anthropocentrism, this account is ‘anthropo-inclusive’ in that it *refuses to place experience outside of nature*.

This epistemology is consistently based on its ontological account of experience through which a given entity ‘knows’ another because it prehends it in an actual process of activity (see Simondon’s related concept of ‘allagmatics’, 2020b, p.655-673). It marks a radical break with the epistemologies typical of ‘substance thought’, which assume that a subject can only form ‘representations’ of a substantial reality that remains independent of it. The experience of the subject, from a substantialist perspective, can never be a relational *part* of reality since it is only ever a ‘picture’ of reality that is ultimately beyond the subject. Substance thought thus gets swept up in an either/or between scientific realism and constructivism. As will soon be clarified, it is captivated by a false and ‘shallow’ version of empiricism based on Locke and Hume’s insistence that all experience is ultimately composed of sense data. If knowledge of the world comes only from the senses like vision, then knowledge cannot be based on feeling because feeling is construed as a mere subjective construction added to what a subject can observe.

For *deep* empiricism the experiences at the heart of epistemology (knowing) are part of and participate within the wider reality grasped as process (Wightman, 1961). This avoids subjectivism and materialism by giving importance to real internal or intrinsic relations: to experiencing the relational process of going through an event. It is ‘deep’ because it does not limit the relevance of ‘experience’ to human beings but extends it throughout nature. Experience, in short, serves in process thought as a kind of paradigm of an event during which ‘many things’ (the data known) come together in a temporarily unifying moment (objectified in the felt experience of the knower). The root of experience, thus conceived, is not visual but emotional: it is made up of feelings, and reality *is* the feeling of actual things by actual things.

Ethically, the focus on occasions (‘events’, ‘happenings’, ‘activity’) asserts the fundamental relevance of relations because an occasion or event is always a confluence or co-occurrence: a ‘bringing together’ of many things into a concrete unity. This again marks a radical break from ‘substance thought’ where a substance is something self-contained whose existence can be defined without reference to anything else, and relations are treated as secondary and ‘accidental’ (not primary realities). Substance thought struggles to treat questions of value and relation as anything other than arbitrary subjective constructions, but for process thought value is intrinsic to the reality of an event whereby a subject becomes what it is by means of its relations to its objects. Far from fragmenting the universe into disconnected self-contained islands, process thought affirms real consequential relations of mutual prehension through which each participant becomes part of a wider whole. Ethics unfolds from the fact ‘each event signifies the whole structure’ (Whitehead 1922, p.26). A process perspective opens new ethical questions pertinent both to grand rethinkings of theology (Cobb, 2011) and to the micropolitics of care (Puig, 2014).

What is called ‘substance thought’? Flux and endurance in early philosophy

Whenever a vicious dualism appears, it is by reason of mistaking an abstraction for a real concrete fact (Whitehead, 1933, p.245).

The history of the present becomes directly relevant when reality is construed as process since the present is the living product of its inheritance. Especially via Deleuze, Foucault’s reworking of Nietzsche’s genealogical method can be considered

a particular application of process thought (see Szakolczai, 1998). From this perspective, the history of modes of thought and practice, including philosophy and science, are directly relevant to psychosocial studies (which, after all, is interested in *how and why people think*). Here a full genealogy is impossible, but a sketch of philosophical background is essential (see Rescher, 1996).

An erroneous logical premise of foundational substances has dominated western philosophy and science since ancient times. The tendency – which is itself a psychosocial question closely connected to ethics and religion - is to diminish the reality of things that ‘pass’ and attribute fundamental reality to things understood to endure. The Book of Revelations for example, urges to ‘strengthen the things that remain’. Heraclitus’ principle that ‘all things flow’ shows the opposite tendency, but continues to illustrate the enduring relevance of the tension between an ever-changing flux of things and things permanently enduring. Process thought does not simply ‘side’ with passage over endurance but rides the liminal path between them, showing how enduring things can arise from passing processes.

With the birth of philosophy in Ancient Greece, tensions between permanence and flux (which had long been the subject of epic verse and tragic theatre) were newly managed using a distinction between form and substance. These concepts have decisively shaped knowledge practices and conceptions of reality to this day. For Plato in his ‘middle dialogues’, *form* was fundamental because he conceived an ideal realm of forms which endure eternally and stamp their pattern on mundane passing substance. An actual material chair is temporary and passes, but the chair *idea* is an eternal form. For Plato the forms exist in an eminent realm of ideas whose absolute reality is guaranteed by its timelessness. Hence in Plato’s *ontology* the truly real is not *actual*. The function of Platonic *epistemology* is to discern these eternal ideas the better to coordinate and govern the material flux of mundane actual existence. Epistemology is thus connected to *ethics* because, knowing the forms, philosophy can find the proper place for everything within, say, a given city, and thereby gradually *perfect* the world.

The strength of this perspective is understandable by analogy to a device which stamps a pattern on malleable matter (like stamping a seal on wax or minting a coin from a press). The ‘form’ on the stamping device is easily differentiable from the ‘matter’ it shapes. This is because the stamping device is the ‘unique original’ from which many coins or seals can be produced, each a ‘copy’ of the original which they resemble but not quite perfectly. The weakness is that the analogical abstraction can be taken too far (see Simondon, 2020a). The evident difference between stamping tool and stamped product can only be plausibility extended (e.g. into the idea of two metaphysically distinct worlds of form and matter) by ignoring two facts of experience. First, the actual fact of the stamping process itself (which is a real activity which should not be omitted from the analogy), and second the fact that the stamping device is also formed material which went through its own process of genesis at the hands of technicians in the actual world. The point is to illustrate both the power of abstract thought and the constant danger of taking it too far and mistaking one’s abstractions for the enduring real.

Aristotle reacted against Plato’s ‘two worlds’ thesis, arguing that forms exist only in *this* world and cannot exist independently in their own right. He switched the

ontological emphasis in the direction of substance, proposing that reality is formed matter. Preferring the technical analogy of a potter moulding clay, he gave nature an inherent dynamism by attributing an immanent telos or end to matter through which substance takes form. But in so doing Aristotle strengthened a type of logic also presupposed by Plato, which is a logic of substance and attribute/quality. Aristotle, living long before modern science, had no reason to doubt that a grey stone, for example, is an enduring substance (the stone) which is qualified by particular *qualities* or attributes (greyness, hardness). Ordinary language with its nouns and predicates seems to support this substance-quality metaphysics whereby the ultimate type of actuality is ‘an individual with its predicates’ (Whitehead, 1929, p.137). The stone serves to exemplify ultimate reality because it appears to exist in space and to endure in time *independently of anything else*. This feature of enduring in a self-contained manner with a ‘simple location’ in time and space has dominated western thought.

The modern re-entrenchment of substance thought in scientific materialism

Seventeenth century Europe saw huge developments in scientific knowledge which challenged the reigning metaphysics and demanded a complete overhaul of older ontological presuppositions. Thanks to figures like Bacon, Galileo and Newton increasingly *what counted as real was what science took to be real*. And claims to reality that were *not* scientifically accepted were subject to disqualification and corrosion. This was the phase of the birth of modern physics which offered impressively predictive and coherent accounts of the physical world as governed by deterministic causal mechanisms. Non-scientific modes of thought were, of course, still important, as Galileo’s famous trial made evident. Familiar human questions of value, ethics, religion, justice and politics remained crucial to forms of governance and societal coordination and these modes of thought presupposed the real existence of feeling, choosing, planning, striving, communicating and battling *people*. But how can the reality of such issues of ‘interest’, ‘value’, ‘intention’ and ‘aim’ be reconciled with the deliverances of deterministic physics? Existing conceptions about the nature of knowledge and reality were no longer capable of convincingly answering these unsettling questions. Descartes, a brilliant philosopher and mathematical physicist, was one of the few who rose to the challenge of radically overhauling the epistemology, ontology and ethics of the unravelling worldview. His philosophical settlement is now taken to have defined a new era of modern philosophy, but – monumental achievement though it was - it did so in a troublesomely partial way. In particular, Descartes missed the fundamental problems with substance-thought and re-entrenched it more deeply.

Descartes’ conceptual revolution was to contrast thought and extension as two ‘substances’ (each independent and self-contained). What was radical was the new sense of reality given equally to mind / thought / the experiencing subject and to the physical universe, but this ‘settlement’ retained unchallenged the classical definition of substance. For example he asserted that apart from God, individual minds and bodies are substances that require *nothing but themselves to exist*. In this way Descartes achieved a temporary reconciliation between the fast-growing science of his day and the reigning theologically ordained political order, but this was at the cost of a complete separation of object and subject, fact and value, extension and thought. Mentality conceived as thought-substance is radically cleaved apart from the natural

world, which in turn is evacuated of any traces of mentality. Analogous to Plato's idealistically stamped matter, the physical universe becomes a timeless clockwork mechanism and questions of its actual becoming and actual relations are delegated to a transcendent deity. For example, how can a completely independent mind substance 'know' an equally independent extended substance? Well, essentially what Descartes called a 'representative idea' is a quality of the mind substance of the perceiver that happens to correlate with a different quality independently qualifying the extended substance being perceived. For Descartes, the only grounds for the truth of the perception are to be found in God's awareness of the correlation and the perceiver's awareness in turn of God. Not just his conception of mind, then, but Descartes' entire dualistic mode of thought thus hangs on the assistance of a transcendent God, and the abstraction would crumble without it. Thanks to this God assumption, plants, animals and human bodies could be newly construed as essentially material *machines* freely available to be exploited by those fortunate enough to partake in God's thought substance (i.e. human beings, or at least Frenchmen). Again, this ontology is in fact an elaborate *abstraction* but an abstraction that claims privileged access to concrete reality and thereby commands the domain of ethics. It is a fallacy of misplaced concreteness.

No less influential was the triumph of Newton's highly successful mechanistic account of the physical universe. But Newtonian ontology also *required* the existence of a creator because it cannot account for its own origins or processes of becoming. Newton's *Scholium*, for example, provides a concept of nature as something merely *there* with no hint of life or organic features of self-organisation, and no space for phenomena of change and development. The universe is conceived as a giant and eternal machine whose very existence must be of supernatural origin. As Newton wrote: 'When I wrote my treatise about our system I had an eye upon such principles as might work with considering men for the belief of a Deity' (cited in Whitehead, 1929, p.93). Newton could conceive of the universe as merely objective mechanical materiality only by assuming its creation by this 'hidden subject': a divine engineer. None of this, of course, is to question the limited validity of the actual science to specify the realities within its domain.

Whilst Newtonian physics was ever more influential, during the seventeenth and eighteenth centuries the plausibility of these thoroughly dualistic *ontologies* was called into question on multiple fronts. 'Free-thinkers' like Hobbes or Mettrie for example, dared to propose that mind too could be explained in purely mechanistic terms derived from Newtonian physics (and Pierre-Simon Laplace could boldly announce of God that he 'has no need of that hypothesis'). Locke questioned the very empirical basis of rational philosophical schemes by building on Galileo's arguments that attributes like 'greyness' and 'hardness' do not in fact belong to substances as primary qualities. Building on Locke, Hume challenged the very coherence of the subject conceived as self-contained, finding in his own experience only an incoherent welter of sense data. These challenges were 'philosophical' but in a new 'empirical' sense. Locke and Hume, for example, rejected the very approach that had generated the grandly comprehensive rationalist schemes of Descartes, Spinoza or Leibniz. They followed Descartes in *doubting* all knowledge, but doubted also his rationalism, preferring to reflect on what can be directly experienced and hence on the basic building blocks of any experience. For this reason, empiricist philosophy could act as

a potent dissolvent acid on ‘metaphysics’, but could not serve to *replace* it in its task of offering a coherent ontology capable of reconciling multiple experiences of reality.

The next most powerful philosophical settlement of these ‘troubles’ thus needed to come from someone capable of integrating rationalistic metaphysics with the new empiricist insights. That figure was another great philosopher-cum-mathematical physicist: Emanuel Kant. But Kant too, for all his undoubted brilliance and deserved influence, served to re-entrench the embattled substance thought rather than open it to more adequate reformulation. Taking the ‘subjectivist’ lead from Descartes, Locke and Hume, Kant re-worked the concept of *form* as a function of what he called the ‘transcendental ego’. He reconstructed the principles of form as a collection of transcendent categories built-in to the ego ‘*a priori*’ (i.e. in advance of any concrete experience). It is these *a priori*s (including time, space and causality) which stamp and lend formal unity to the otherwise inchoate material of unstructured sense-data. Hence for Kant, Hume’s chaotic manifold of sense data (empiricism) is lent a unity by a ‘transcendental ego’, itself *beyond* experience (rationalism). So once more the subjective realm was whisked away to a transcendent realm of *a priori* forms that is assumed to give rise to all experience, but never itself to be experienceable. This enabled Kant to both completely accept the mechanistic premises of Newtonian physics without calling into question the implicit substance thought (since the ‘thing itself’ is incapable of being known by experience), and simultaneously to reinforce the notion of a ‘transcendent subject’. Kant’s new ontological settlement thus preserved a conception of nature fundamentally bifurcated into a purely physical domain (essentially that of Newton’s mechanics) knowable only thanks to a pure subject (which absolutely transcends the natural realm). Once again we see an ethics emerge from a rejection of passing flux in the name of an eternally transcendent reality. Hence in the *Critique of practical reason* from 1788, Kant announces that only two things fill him with awe: the starry sky above him and the moral law within him. These are the two poles of a bifurcated nature and for Kant both are *fixed for eternity*: there is no room for fleshy bodies, growing infants, or anything in process that *becomes* (see Toscano 2006 for more detail).

The explicit emergence of process thought in the nineteenth century and its ties to modern psychology

The eternal stability dreamed of in Kant’s metaphysics was rudely interrupted first by the age of the political revolutions of US and France, and then by the rupture of industrial revolution. By the second half of the nineteenth century, this settlement too was coming apart at the seams because of its incapacity to accommodate *processes* which form complex wholes over time. Along with physics (which during this period discovered thermodynamics and then electromagnetic fields, etc), biology and the life sciences were developing fast and demanded new modes of thought and new scientific practices. It is no exaggeration to say that the concept of nature was itself *revolutionized* during the 19th Century. This was well expressed by Frederick Engels (1880) who wrote: ‘for the first time the whole world, natural, historical, intellectual, is represented as a process – i.e. as in constant motion, change, transformation, development’. The prominent example of the *natural* world was Darwin’s theory of evolution, a pre-condition of which was growing knowledge of geological processes of transformation and the vastness of geological time. With respect to *history*, Engels had in mind his and Karl Marx’s dialectical account of economically driven

transformations in the development of human society. This ‘dialectical materialism’ was itself a reaction to and inversion of Hegel’s ‘neo-Kantian’ account of history as a process of *intellectual* development through which ‘spirit’ progressively liberated itself from ‘matter’.

But despite the general emphasis on flux and change, these developments did not yet constitute a full-fledged metaphysics of process. Engels, for example, could articulate an economic basis for societal transformation, but lacked a philosophy of process capable of integrating the insights of all the sciences. Indeed, the shift from Hegelian idealism to Marxist materialism illustrates the limits of a vision of nature fundamentally bifurcated into ‘mental’ and ‘material’ aspects: the Marx/Engels synthesis flipped Hegel’s idealism into its materialist antithesis. A full-fledged process metatheory developed only in the latter part of the nineteenth century, and it did so in close connection with the formation and institutionalisation of modern psychology. The main founding figures of psychology, like Dilthey, Fechner, Wundt, Brentano, James, Bergson, Dewey and Mead were transdisciplinary philosopher-scientists. Practically all of them developed explicitly anti-dualistic philosophies, most with a strong processual emphasis. They saw in the new field of psychology, not just one more science in the existing mould, but the possibility of a radically new world-view. Because of their naturalistic concern with *mental processes*, they were seeking - not just technical access to - but new ways of *thinking* the inherited dualism of mind and matter, mental and physical. The culmination of this developing process thought, however, required a thinker familiar with the new psychology yet capable of operating at the cutting edge of theoretical physics, inspired by the latest biology, equipped with the best available mathematical and logical tools, having an encyclopaedic grasp both of the humanities and the emerging social sciences, and willing and able to integrate all this into the unfolding and encompassing picture of the history of philosophy.

Whitehead: Reality as process

The scientific materialism and the Cartesian Ego were both challenged at the same moment, one by science and the other by philosophy, as represented by William James and his psychological antecedents; and the double challenge marks the end of a period which lasted for about two hundred and fifty years (Whitehead, 1926, p.199).

The perspective articulated by A.N. Whitehead (1861-1947) in *Process and Reality* (1929) was a self-conscious culmination of process thought. It was his effort to reconstruct a metaphysics more adequate to contemporary science and without need for a fundamental bifurcation of nature. Whitehead built heavily upon the philosophical psychology and the psychological philosophy of William James, John Dewey, and Henri Bergson. He was particularly influenced by William James’ new vision of psychology, which questioned substance thought and posited the *stream of experience* as the fundamental subject matter of psychology (see Stenner, 2011). In *Principles of psychology* (1890) James showed that the ‘subject’ is not an individual substance which underlies its changing feelings, perceptions and thoughts, and nor is it a transcendent ‘soul’ stuff. Rather, ‘*thought is itself the thinker*’ (James, 1890, p. 378-379). Each budding thought (or feeling, whether conscious or unconscious) is appropriative of the previous thought and *about to be appropriated* by the next into a

new thought. The subject thus conceived is a process involving ever renewed ‘buds’ or ‘drops’ of experience, where each experiential ‘now’ emerges from and ‘appropriates’ its immediate predecessor. James called this ‘passing of one experience into another when they belong to the same self’ the *co-conscious transition*. The continuity proper to this experience clearly cannot be reduced to things that have a rock-like ‘simple location’ in time and space. As Whitehead puts it, ‘in our present state of mind, we are continuing that previous state’. And yet:

The word *continuing* states only half the truth. In one sense it is too weak, and in another sense it overstates. It is too weak, because we not only continue, but we claim absolute identity with our previous state. It was our own very identical self in that state of mind, which is of course the basis of our present experience a quarter of a second later. In another sense the word *continuing* overstates. For we do not quite continue in our preceding state of experience. New elements have intervened. All of these new elements are provided by our bodily functionings. We fuse these new elements with the basic stuff of experience provided by our state of mind a quarter of a second ago. (Whitehead, 1938, p.160)

As will be seen, this Jamesian psychological insight was expanded by Whitehead beyond human experience into an ontology inclusive of everything from the social reality of an institution like the *Association for Psychosocial Studies* (which must ongoingly recreate itself in the social world as a recursive network of communications) to the organic reality of a living cell (which must continually recreate *itself* through the ‘autopoietic’ operations described by contemporary biologists). James’ psychology was already part of a new ‘pragmatic’ philosophy which had ambitions well beyond psychology and for which ‘event’ concepts like act and function were keynotes. But James never got to develop this ‘radical empiricism’ to his satisfaction, and lacked the requisite ‘insider’ knowledge to do justice to natural scientific knowledge. Whitehead, by contrast, was ideally positioned to observe how natural science itself was abandoning static concepts of matter for dynamic concepts of *activity*, like notions of energy and its transformations, and field dynamics.

The impressive coherence, logic and scope of *Process and Reality* was grounded in the fact that Whitehead was one of the most respected mathematicians and scientists of his age, with an unprecedented and unrivalled overview and expertise (Leclerc, 1961, p.172). This is no mere matter of ‘status’. Whitehead’s *knowledge* as a mathematical scientist was crucial to his capacity to make a serious contribution to transforming thought about the nature of reality. He initially trained and lectured in Cambridge as a pure mathematician. Works like *Treatise of Universal Algebra* (1898), *The Axioms of Projective Geometry* (1906) and *The Axioms of Descriptive Geometry* (1907) were substantial investigations into the structure of mathematical thought and the canons of logical inference from data. Later works on the philosophy of science like *Enquiry into the Principles of Natural Knowledge* (1919) and *The Concept of Nature* (1920) built upon these and upon his knowledge of theoretical physics to ask fundamental questions about scientific knowledge. He was particularly familiar with the new vector physics, related theories of energy and molecular vibration, and the physics of fields (e.g. Clerk Maxwell’s field equations) and was acutely aware that philosophy had not kept pace with developments in physical science.

But before Whitehead could fully articulate his mature ontology and epistemology of process it was necessary for him to go through a liminal experience of his own, i.e. an experience during which his prior assumptions were radically challenged, creating a phase of transition during which a new mode of thought could be created (Stenner, 2017). Up until the early 1920s he was intent on building a philosophy whose generalisations are based purely on concepts that are firmly established by physical science. His prior work had clarified immediate experience as the groundwork for all knowledge (deducing scientific concepts from the simplest elements of perceptual knowledge), and he was intent on purging the philosophy of science of any extraneous metaphysical assumptions, holding that ‘the basis of science does not depend on the assumption of any of the conclusions of metaphysics’ (Whitehead, 1917/1962, p.161). He was scathing of metaphysical thought that did not engage frequently and deeply with science, noting ‘such philosophical abortions as Hegel’s dialectical deduction of the number of the planets’ (see Wightman, 2014). But based on a philosophical generalisation of the discoveries of science, he thought that a complete philosophy could be developed capable of covering the whole of experience. At this stage in his career, Whitehead was clearly operating on the basis that *what is real philosophically* must be decided on the basis of *what science takes to be real*. The culmination of this phase was reached with the publication of *The Principle of Relativity* (1922), which was Whitehead’s alternative rendering of Einstein’s theory of relativity. In that book, he defines philosophy of science as ‘the endeavour to formulate the most general characters of the things observed’ and ‘it only differs from any of the special natural sciences by the fact that it is natural science at the stage before it is convenient to split it up into its various branches’ (p.5).

The transformation of Whitehead’s thought at issue here began in 1922. In all of his work after 1922 the presupposition described above is completely inverted. Wightman (2014, p.338) observes that, apart from the occasional address, from 1922 for ‘three years there was silence’. The preface of *Science and the Modern World*, published in 1925, opens with the statement that ‘the cosmology derived from science has been asserting itself at the expense of older points of view with their origins elsewhere. Men can be provincial in time as well as place. We may ask ourselves whether the scientific mentality of the modern world in the immediate past is not a successful example of such provincial limitation’. Here philosophy is the *critic* of scientific cosmology, and there is a new openness to ‘divergent intuitions as to the nature of things’ which it is the job of philosophy to harmonise. Instead of building a cosmology solely on the rock of science, the ultimate ideas of science must be scrutinised, and balanced attention given to ‘the whole of the evidence in shaping our cosmological scheme’. Indeed, from this point on the conception of science as the ‘rock’ of all knowledge is the primary case of the *fallacy of misplaced concreteness*. Scientific knowledge remains profoundly important to Whitehead, but he is aware that it is a high-grade *abstraction* and that ‘the intolerant use of abstraction is the major vice of the intellect’ (1925, p.26-7). This intellectual ‘about turn’ corresponds to a major life event in Whitehead’s life, because in 1922 he emigrated from the UK to take up a philosophy post at Harvard, the first philosophy lecture he ever attended being his own first lecture.

The distinctive power of Whitehead's philosophy, in sum, comes from the fact that, far from being largely innocent of science (like Hegel), or eager to reconstruct it as part of a new politics (like Marx), or proudly beyond it (like Nietzsche) or plainly against it (like Heidegger), he was thoroughly immersed within it during a historical moment when the relevance of its philosophical presuppositions were being exposed to those capable of really seeing and understanding. In the following quotation, Whitehead communicates the *shock* of contemporary developments in physical science (not least the relativity and quantum revolutions, on the latter see Epperson, 2012): 'There is not one single concept of the Newtonian physics which was taught as a whole truth, that has not now been displaced.' And later: 'This experience has profoundly affected my thinking. To suppose you had certitude once, and certitude about the solidest-looking thing in the universe, and then to have it blow up on your hands into inconceivable infinities has affected everything else in the universe for me.'

What the builders had discarded becomes the new cornerstone: Rethinking experience as atomic actual occasion

An occasion of experience which includes human mentality is an extreme instance, at one end of the scale, of those happenings which constitute nature. But any doctrine which refuses to place human experience outside nature, must find in descriptions of human experience factors which also enter into the descriptions of less specialized natural occurrences. If there be no such factors, then the doctrine of human experience as a fact within nature is mere bluff, founded upon vague phrases whose sole merit is a comforting familiarity. We should either admit dualism, at least as a provisional doctrine, or we should point out the identical elements connecting human experience with physical science. (Whitehead, 1933, p.237).

Following the liminal experience noted above, Whitehead could see a radical new way of overcoming the fact that existing philosophy harboured now redundant habits of thought that distort the modern grasp both of nature and of society. A static concept of fundamental entities as *substances* infected western thought, and this in turn created an artificial polarization of things 'objective' from things 'subjective'. Developments in science had undermined substance thought, but at the same time the epistemic dominance of science had led to a dangerously lopsided cosmology that was corrosive of all other claims to reality (for psychocultural illustrations of scientific rationality as a 'weapon of mass disqualification' see Savransky, 2021). Whilst remaining committed to the value of science, this realisation led Whitehead to abandon his previous mission of building a general philosophy exclusively upon the rock of science, and to undertake instead a restoration of the proper role of philosophy *as the rock* which harmonises 'the various abstractions of methodological thought' (1926, p.147). From this perspective, Whitehead's embodied transition from London to Harvard was simultaneously his professional transition from natural scientist to philosopher and in turn a potentially globally relevant intellectual transition from a conception of reality dictated by science to one composed by metaphysics, freshly conceived. The dissonance at play in the above mixed metaphor of a rock which harmonises should 'jar' the reader into observing that a rock is a misleading metaphor to the extent that it encourages the very 'substance thought' that must be questioned. A rock is an unlikely 'harmoniser' of anything, and the 'foundational' task of

philosophy is more akin to the art of a musical conductor who creates an ongoing coherence amongst diverse modes of experience from multiple knowledge specialisms. Metaphysics, from this perspective, is a *transdiscipline* in the sense that it takes seriously the experience-base of the schemes of abstraction proper to multiple disciplines of thought and practice, aiming for a coherent harmony amongst them rather than a corrosive logic of epistemic disqualification (see Stenner, 2015). As a metaphor of foundation (the principle affording the perpetuation of the ongoing unity of an event/object), the rock metaphor minimises the relevance of experience to an entity. As a thing that appears to be enduringly ‘here’ *regardless of time*, the rock is a paradigm for substance thought (until, that is, geological science and quantum physics are taken into account). The conductor metaphor, by contrast, maximises the relevance of experience in duration. It allows a glimpse, to those capable of seeing, of how the subjectivity so carefully rejected and eliminated from the procedure of modern natural science, might turn out in fact to be its atomic principle of unity.

At the heart of Whitehead’s turn at the birth of process thought was a rejection of the notion of experience which was presupposed by the old empiricism (of Locke and Hume) as the basis of all knowledge, including science. Whitehead’s ‘turn’, as noted, was a transformation in *mission* and not an abandonment of the many insights obtained through his previous work. Indeed, that previous work led him to the threshold at which the rethinking was possible. For example, by 1911 he had already achieved the fundamental insight of rejecting the idea that space and time can be conceived as *simple locations* for events (see Lestienne, 2018), and he had long emphasised the ‘becomingness’ of nature (see Leclerc, 1961/2014). What did change, however, was his concept of fundamental entities. Before the transformation he certainly had a concept of an ‘actual event’ as an ‘element’, but this was supplemented by ‘objects’ as a second type of fundamental element. He defined objects as entities which ‘convey the permanences recognised as self-identical amid different circumstances; that is to say, the same object is recognised as related to diverse events’ (see Whitehead, 1919, 14.2.). After 1922 he dispensed with this theory of objects and events as the two elemental realities following his insight, described earlier, that *objects are themselves events*. This purges his thought of the inconsistency of any residual substantialism, and provides him with the startlingly new account of experience as ‘actual occasions’ that are simultaneously the basis of epistemology (all experience and all knowledge is refer-able to and takes the form of actual occasions of experience) and ontology (the basic real things in the universe are construable as actual occasions).

Once Whitehead grasped that an object (a tree, a pyramid, a cat – ‘after a few years we recognise the same cat, but we are thereby related to different molecules’ [1929, p.31]) is an event which endures as a function of the multiple actual occasions out of which it is (self)composed, he had hold of a mode of thought in which *object and subject were understandable as different stages of the same entity* (and not as entities belonging to radically distinct metaphysical categories). The concreteness of an object, in short, results from a process of *concrecence*. The word ‘concrecence’ specifies the relational process through which a novel togetherness really *becomes concrete*, as when a process of crystallization yields a crystal (‘the many’ ingredients at play are patterned into ‘one’ and thereby ‘increased by one’). An actual occasion *becomes concrete* as the real potentiality it brings into play is actualised through its prehensions. Prehensions are ‘feelings’ of other actual objects which enter the real

internal constitution of the actual occasion in process of concrescence, but these felt objects were once themselves – and may continue to be – subjects in process of concrescence. The entity *qua* ‘subject’ is the process of concrescence considered from its own perspective *as the actual event is happening*. But once the potential energy has been actualised that entity has become a concrete ‘object’ (‘data’ for a new concrescence).

In this account, far from being cleaved apart, subject and object are intrinsically related. An object is a *subject which has perished*, and a subject is the *becoming of objectivity*: ‘The occasion arises from relevant objects, and perishes into the status of an object for other occasions’ (Whitehead, 1933, p. 227). When Whitehead writes that value is the intrinsic reality of an event he also means the value of its objects *for* the event, since the event is a real *perspective* of the universe from which vantage point some part of the universe is selectively actualised. Without here going into Whitehead’s theory of pure potentials, it can be said that each event, each actual occasion, has a subjective ‘pole’ through which data from an objective pole is selectively valued during the concrescence. That selective valuation can be likened to a harmonisation of the felt entities by the feeling entity. Here we have a remarkable reworking of the ancient concept of form. Valuation does not form ‘matter’. Rather, valuation is the imminent patterning of activity: the forming of actuality.

In *Adventures in ideas* (1933) and *Modes of thought* (1938), Whitehead gives the name ‘experience’ to that process of concrescence when it is viewed from the perspective of the concrescence itself (as distinct from its observation from the standpoint of a concrescence constituting an outside perspective). Since it is ontologically basic (yet ‘anthropo-inclusive’), this notion of the process of the concrescence of an actual entity is, in Whitehead’s philosophy, applicable to *all* entities, regardless of whether we are considering those concrescences giving rise to a conscious thought or those giving rise to a budding flower or a crystal. In considering the process of crystallization, for example, it makes *little sense* to speak of an internal perspective ‘had’ during the process of concrescence itself, and we are limited to observing the crystal’s formation from the outside (i.e. through the experience of the observer – itself an actual occasion involving concrescence). A crystal is obviously far from being conscious of its process of concrescence, but it does go through that process (see Simondon, 2020). Talk of an internal perspective makes *a little more sense* when considering, say, the multiple processes of concrescence occurring between the nose of a living dog and the fox it can smell (thanks to the mediation of its brain): the dog both ‘goes through’ this process *and* is (to some degree) aware of certain aspects of that ‘going through’ (on animal subjectivity see Despret, 2008). Again, the *subject* of experience is that which comes into being by going through the concrescence, and the *objects* of experience are those entities that are *prehended* by the subject during its becoming-an-object. When the fox becomes an object of the subjective prehension of the dog, the fox exists only in its reality as an object *for* the dog’s experience, i.e. as *objectified* in and for the dog’s experience (it has only an ‘objective reality’ for the dog, but lacks its own ‘formal reality’). But the fox has its own experience from its own ‘intrinsic’ perspective for which the dog is one of *its* objects for valuation (the fox has its own ‘formal reality’ from which intrinsic perspective the dog has mere ‘objective reality’). Likewise, the dog, the fox and their relation are all ‘objects’ in the experience of the onlooking human subject. In this third case the notion of an internal perspective with intrinsic value makes *complete*

intuitive sense. Indeed, it is the basis of modern philosophy: consider Descartes reflecting upon the movements of his own mind and observing his own thought both from the inside (as an immediate activity or operation being immanently ‘gone through’ or ‘enacted’) and from the outside (as a structure that is indubitably ‘mine’).

The deepening of shallow empiricism

There is nothing in the real world which is merely an inert fact. Every reality is there for feeling: it promotes feeling; and it is felt (Whitehead, 1929).

The notion of experience - as a relational process of concrescence through which a novel form is yielded (an ‘object’ existing as a ‘matter of fact’) and transmitted for the future feeling of the next occasion (‘transition’) - could not be more different to that of the old but still dominant doctrine of empiricism. For the tradition flowing from Locke and Hume to Kant the subject already exists without objects, and objects already exist without subjects. Each is taken to exist in its own distinct metaphysical realm, making relations unthinkable. Experience, from this perspective, is associated exclusively with already existing conscious human ‘knowers’ preoccupied with objects beyond them that they struggle to know. Experience is thus reduced to the mere adventures of *sense data* from a) their first impingement upon the senses through b) their various inner combinations and elaborations to c) their ultimate manifestation as a conscious experience of a world ‘out there’ distinct from the inner world of the one who ‘has’ the experience. From this perspective, subjectivity is entirely alienated from objectivity and whatever knowledge we have of the ‘outside world’ comes only through our inner sense data. Whitehead observed that particular attention is given to vision: ‘Philosophers have disdained the information about the universe obtained through their visceral feelings and have concentrated on visual feelings’ (Whitehead, 1929, p.121).

Sense data deliver *qualities*. In the case of vision, for example, we see qualities of colour, brightness, texture and shape: a patch of roundish shiny red and green standing out against a bluish white background flecked by green. At least since Galileo it has been known that these qualities do not belong to the objects seen (an apple, for instance), but are an emergent effect of the relationship between the light reflected from objects in a given setting and the sensory system of an organism with eyes. The implication is that a cognitive system uses the elemental qualities provided by sensory experience to construct a more coherent experience of a scene involving an object: an apple hanging from a tree. The apple is both ‘out there’ (as Kant’s ‘noumenon’) and ‘in here’ (as a ‘phenomenon’ or ‘appearance’), but the only way we can *know* the apple through ‘experience’ is by means of sense data (based, in this example, from light that is reflected from it). Memory, conduct and the coordination of several senses are then typically factored in to explain how ‘prior’ top-down knowledge based on previous experience and conduct can ‘feed-in’ to the real-time construction of the phenomenological experience of the apple. Although this complicates the process somewhat, this empiricism still basically holds to the following sequence: first come the sense data (‘I see a sphere of red and green’), second comes the internal cognitive construction of an object out of those data (‘I see an apple’), and third comes our feelings evaluating that constructed object (e.g. ‘I love apples!’).

Put differently: first, the qualities supplied by sense data are taken to be the most basic and real thing; second, the object is taken to be the abstract product of an inferential construction based on the primary sense data; and third, the evaluative feeling is taken to be a further abstraction based on this already abstracted object. Whitehead considered this empiricist doctrine of experience a travesty of actual experience. In empirical fact we only experience a mere 'qualia' like a patch of red under exceptional circumstances (if we are a painter, or taking part in psychology experiment). Normally we perceive a coloured thing and it takes great effort of analysis to see something like mere colour because we must artfully separate it out from a more complex and rich *initial* experience. What comes first is this 'confused togetherness' of a vague totality, and only secondarily and by abstraction can this be finessed into the simple 'sense datum' that Locke and Hume falsely took to be elemental. Here once again we have a high-level abstraction masquerading as ultimate reality. So, contra to this 'shallow' empiricism, feelings of actualities by actualities are basic, not secondary, and in fact sense data are secondary to feeling. Objects are objectified in experience through feeling, and therefore are not reducible to secondary 'constructions' (although they are objectified selectively and 'built upon' in the process of experience).

Whitehead argues these points on two basic fronts. First, he insists that sense data are not the exclusive basis of perception of reality nor even the most important component of basic experience. The specialised senses in fact constitute a secondary mode of perception compared to visceral feelings of objects, and are a relative latecomer to organic life in evolutionary terms. Whitehead calls this secondary mode including senses like hearing and seeing 'presentational immediacy' because they present a sense of an immediate external reality. These deliverances of presentational immediacy presuppose and build upon a primary mode of perception called 'causal efficacy' which is a much more vague and embodied feeling of the impingement of other actualities on one's own actuality. Causal efficacy is the physical feeling of one actuality by another. Causality itself is 'conformal feeling'. The relative 'sharpness' of secondary sense data arises only through selective operations vis-a-vis the primary and unconscious data from causal efficacy, selectively eliciting certain of its features into clarity whilst neglecting ('negatively prehending') others. Recognising these two modes reveals in turn how *contrasts* between them function as a primordial form of symbolism. The sharply defined immediacies disclosed by the higher senses can serve as symbols for the vaguely felt but really efficacious presences delivered in the first mode. This means that there are in fact non-sensuous 'elements' in experience beyond high-grade sense data, but these have been simply neglected by the 'sensationalist' doctrine due to its preoccupation with a conscious human knower, and with their vision in particular.

Whitehead's second front of argument develops the first by highlighting within conscious human experience a neglected non-sensuous factor. In their enthusiasm to insist that only sense-data can enter experience, shallow empiricists neglect the fact that one occasion of experience gives rise to the next in a continuous transitional process. Hence:

In human experience, the most compelling example of non-sensuous perception is our knowledge of our own immediate past. I am not referring to our memories of a day past, or of an hour past, or of a minute past. Such

memories are blurred and confused by the intervening occasions of our personal experience. But our immediate past is constituted by that occasion, or by that group of fused occasions, which enters into experience devoid of any perceptible medium intervening between it and the present immediate fact. Roughly speaking, it is that portion of our past lying between a tenth of a second and half a second ago. It is gone, and yet it is here (Whitehead, 1933, p. 232-233)

The main thing (beyond sense data) to enter our experience, in other words, is the experience we have just had, but that is no longer. Each new present experience takes forward into the future a prior experience that has now perished (and become the objective datum for the next). This process, clearly indebted to James' 'stream of experience', is a good illustration of causal efficacy as it is discernible within conscious mentality.

The re-assertion of a new species of twentieth century substance thought

Whitehead's version of process thought has directly inspired a good many highly creative and brilliant thinkers in a variety of fields (see Weber and Desmond, 2008). His and Russell's *Principia Mathematica* revolutionised logic and without it Gödel would not have proposed his famous *theorem*. David Bohm's (1995) theoretical physics of the 'implicate order' and Conrad Waddington's epigenetic biology (1941) both acknowledged major debts to Whitehead. Ludwig von Bertalanffy (1973, p.12) acknowledges him as an original inspiration for the organismic conception in biology which motivated his own development of systems theory. Susanne Langer's (1953) remarkable philosophy of art, feeling and form continued in the spirit of her mentor. Kirkpatrick (2018) gives a compelling account of how Maurice Merleau-Ponty's largely invisible engagements with Whitehead influenced the significant late revisions made to his phenomenology (and perhaps influencing his then PhD student Gilbert Simondon) and Halewood (2013) has traced some of the influence Whitehead has exerted on social science. More recently, his critique of a bifurcated nature fed explicitly into the innovative 'cyborg' ontology of Donna Haraway (see Sehgal, 2014) and has been championed by Isabelle Stengers (2012). It has featured as a main source of movements like 'non representational theory' (Thrift, 2008) and new variants of realism and materialism (see Basile, 2019). Indeed, important thinkers began revising their own origin stories so as to include Whitehead. For example, influenced by Stengers (2012), Bruno Latour (2007) identified Whitehead as crucial to his 'actor network' approach to science and technology studies. And although she comes from a Hegelian tradition quite alien to Whitehead, Judith Butler remarked of her reading of him that 'what I happen to remember is less important than how reading him came to affect me, which is to say how the text acted upon me even if I was not always fully aware of how it was acting' (Faber, Halewood and Lin, 2012, p.4).

It is important to acknowledge this impact because for several decades after his death the epochal importance of Whitehead's process metaphysics was significantly curtailed. The French philosopher Giles Deleuze went as far as to describe this as an 'assassination' in the name of a problematic new philosophical consensus (see Deleuze, 1993 and 1987). Whitehead's philosophical approach, and indeed

metaphysics in general, was dismissed by new waves of analytical philosophy, speech act theory and language game theory (Bertrand Russell's authoritative history of philosophy barely mentions his mentor). Whitehead was also the victim of his own success in so far as he influenced the development of overarching frameworks for systematizing knowledge like general systems theory and general structuralism. These movements typically excluded the arts and humanities, and replaced the role of the philosopher (again maligned as 'metaphysics') with that of the systems-scientist.

As psychosocial studies comes to reconnect with process thought, new questions are opening up around the work of Freud and psychoanalysis more generally. Psychoanalysis has been a considerable influence on psychosocial studies, and yet it too has been subject to a comparable effort of disqualification that is in fact related to that inflicted upon process thought. Freud, however, differs from James, Bergson, Mead etc, in that he was not a philosopher and began his work presupposing the materialism then taken for granted in the physical sciences. But he was a brilliant observer of actual experience and conduct, and he gradually developed an independent metatheory (he called it 'metapsychology') which took him into genuinely uncharted territory beyond bifurcated presuppositions, yielding new insights broadly compatible with process thought (but without himself articulating an explicit processual ontology). Like practically all the founders discussed earlier, Freud insisted that mental processes were the proper subject matter of psychology, but he held this position in a clear way only from about 1900 onwards. The young *neurologist* Freud - who worked with Breuer under the influence of Hughlings-Jackson and who drafted the 'project for scientific psychology' - had assumed the possibility of completely reducing mental processes to physical events. By 1900 and *The Interpretation of Dreams* the *psychologist* Freud had become convinced that to understand the unconscious it must be construed as a distinctive *mental* process characterized by its opaqueness to the individual's consciousness (see Freud, 1912). Later still, he would write of a *system* of mental processes.

Freud came gradually and through careful observation of his own experience (and, of course, the reports of patients) to realise the fundamental importance of reflecting upon and developing clear, inclusive and internally coherent theory and metatheory. Like James, however, he remained unsatisfied with his own efforts. As Freud moved away from the physicalist starting point he took for granted as a young researcher, he gradually came to articulate the differences between three theoretical views: a *dynamic* view of the unconscious (one which view unconscious mental processes as active determinants of an individual's life); a *topographical* view (the unconscious, preconscious and conscious as interrelating systems with distinct features, later to be elaborated as id, ego, superego); and an *economic* view (which takes account of things like flows and investments of energy). In a paper written in 1915 Freud used the term *metapsychology* to refer to the very 'consummation of psychoanalytical research' which is possible only on the rare occasions when these three theoretical points of view can be combined in the understanding of a psychical process. Freud had used the term 'metapsychology' in a less precise way earlier (e.g. in 1901 in *Psychopathology of everyday life*), but it was only in 1915 that he properly grasped how the three different perspectives could complement one another. In the same year he attempted a *Metapsychological supplement to the theory of dreams* and was emboldened in 1920 to further challenge his own metatheory by writing the much more theoretically speculative and rich *Beyond the pleasure principle*.

As with James and the other founders, Freud's influence on modern psychology cannot be exaggerated. Furthermore, his invention of psychoanalytic clinical practice gave psychodynamics and its variants a real enduring existence as a branch of medicine which could continue independently of modern academic psychology. But by the end of the second world war it too was being excluded from the mainstream of psychology and used as a warning of the dangers of unscientific metaphysics. This disqualification was made possible by a mixture of ingredients that cannot be fully elaborated here, including the births of behaviourism, logical positivism, analytic philosophy, the unity of science movement, systems theory, statistical probabilism and falsificationism. All collaborate in a double gesture of a *metatheoretical rejection of the relevance of any notion of intrinsic experience to scientific procedure* which simultaneously *removes these questions of metatheory from the jurisdiction of science*.

Chicago and Vienna were key centres for these developments. To touch upon just the first three, Watson launched his behaviourism from Chicago in 1913 during a massive phase of expansion of the US university sector. His manifesto denied the very existence of experience and mentality and redefined the exclusive subject matter of 'psychology' as externally observable behaviour, quantifiable as a variable in an experimental design. The emphasis on behaviour was not new and indeed had been encouraged by the emphasis process thinkers (like Watson's Chicago colleague G.H. Mead) put on the *act* (the *act* comes before the *tract*, as Mead was fond of saying). But attention to the intrinsic, experiential side of activity was crucial to Mead's behaviourism, a point completely lost on Watson. Lacking a philosophical background and taking a dismissive anti-philosophical stance, Watson's behaviourism was not significantly influenced by Viennese logical positivism. But this movement also acquired a strong-hold in Chicago and boosted in turn the unity of science movement that was centred there, reinforcing Watson's wholesale disqualification of experience but generalising it to all science.

Logical positivism asserted an exclusive focus on exteriority, including the behaviour of scientists. It concentrated on the technical operations at play in scientific thought and practice, but in so doing it assumed the philosophical metatheory rejected by Whitehead. That is, it assumed a philosophy built exclusively upon the rock of science, and operating with a conception of science that takes all the problems of substance thought for granted because it assumes as ultimate *independently separable objects and events devoid of internal relatedness* (i.e. 'substance'). Carnap (1934), for example, stipulated that for a statement to be scientific it must be expressed in *physical language* such that quantitative values can be attached to definite coordinates in a space-time system. On this basis, the logical positivists insisted on a severe restriction of what can count as permissible scientific theory. Namely, scientific propositions must describe directly *observable existents* and theory-building must be based on an understanding of reality as a *physical unity* displaying demonstrable regularities. Note how this epistemology both took for granted and *removed from further scientific consideration* a substance ontology (exclusively materialistic or physicalist). This reinforced substance metaphysics is a high-level theory (a metatheory), but it is not a theory in the narrow sense to which the logical positivists sought to restrict scientific theory. The influence of logical positivism thus served to

harden a distinction between an assumed metatheory and a concretely testable set of 'theories'.

Meanwhile, just as philosophy was being excluded from science, anglophone philosophy itself was in process of being reconstructed into precisely the shape that Whitehead had so painstakingly rejected. The new 'analytical philosophy' was based on a distinction between synthetic propositions (the only propositions that can be empirical) and non-synthetic or 'analytic' propositions, which are essentially about language and its contingent rules, not the empirical world beyond language. Again, either propositions are synthetic, refer to objects and hence are the business of scientists, or else they are analytic, refer to language, and are a matter for the analytic philosopher to 'clean up' so that mortals no longer confuse themselves with the mere effects of language. That John is a bachelor is a synthetic proposition, whilst that a bachelor is unmarried is merely analytic. The key point again is that a materialist ontology is *assumed* in a manner that at the same time renders it unquestionable. The flawed 'upstream' metatheory that Whitehead opened to critical scrutiny and showed to have polluted the down-stream knowledge is both re-asserted and rendered inaccessible.

The criticism of Freud's scientific credentials is most obviously associated with the Viennese philosopher Karl Popper's direct disqualification of both Freud and Marx on the grounds that their theories are not falsifiable. In fact, however, Freud's scientific ship had already been torpedoed by the developments just sketched. Popper merely dealt the *coup de grâce*. Irrespective of criticisms levelled at his preferred methodology, the argument above shows that it was Freud's very *subject matter* that was excluded from early 20th century psychology whose model of science came to assume only the physicalist materialism that Freud had moved away from thanks to his protracted engagement with mental experience. Furthermore, and as we have seen, logical positivism also insisted that the events and states of affairs described by 'genuine' science must be *directly observable*. For Freud, however, the mental processes that are of primary interest are also *unconscious*. They cannot even be observed by the person 'having' them (or 'being had' by them) and they can only be *inferred* by the psychologist through the mediation of, for example, clinical observations thoroughly informed by psychoanalytic metatheory. Neither subject matter nor metatheoretical approach had any place in the newly sedimented dominant vision of science. Freud, himself so sensitive to the dangers of metaphysics, found himself scapegoated as the ultimate victim of metaphysics. Of course, and as noted, Freudian therapy and thought lived on, but in its own enclave, isolated from experimental psychology.

This fate of Freud should not distract from the fact that the entire vision of psychology that had given birth to the discipline and that had centred on mental processes was completely de-railed by the new methodological self-definition of the science that cohered in the early twentieth century. The very concern with the *mental* and with the theorization of subjectivity was effectively subject to a disqualification by the insistence on a tight and physicalist connection between theory and experiment. Of course this account runs counter to the usual historical story. In the received story James, Freud and co. were founders of the scientific psychology that would flourish in the twentieth century. Their efforts were continuous with it but for the fact that they lacked the know-how to do proper experiments. This received story

is in fact told from the perspective of the very particular ‘subject position’ sketched out above. It is the story of those mostly US psychologists whose actual experience was shaped under the influence of logical positivism, analytical philosophy and so forth, i.e. those for whom the discipline acquired its unity only via the (implicit) rejection of metaphysics and the (explicit) adoption of experimental methods. For those able to see beyond this limited mode of thought there is a profound *discontinuity* with respect to metatheory, between the founding phase and its later transformation. Modern scientific psychology was actually accomplished *at the expense* of the rich tradition of metatheory that had preceded it and given birth to it. This discontinuity should be emphasised by those developing a more adequate psychosocial approach. For example, Fechner lives on, but only as the precursor to Wundt who showed that psychology could be an experimental science (his Spinozist metaphysics is almost forgotten). Wundt lives on, but only as the founder of the first psychological laboratory (his 10 volumes of qualitative ‘folk psychology’ are almost forgotten). James lives on, but only as a quirky icon of American pragmatism (his radical empiricism is almost forgotten). Dewey lives on, but mostly because of his contributions to education and the arts (his fundamental contributions to a psychology grounded in experience are neglected). Mead lives on, but mostly as the ‘symbolic interactionist’ sociologist that he never was (his psychological philosophy of time inspired by Whitehead is rarely spoken of). And, as discussed already above, Whitehead lives on....

Summary

This contribution has endeavoured to flesh out the meaning of ‘process thought’ and to articulate its broad relevance to psychosocial studies. Taking Whitehead as an exemplar, the process thought presented in *Process and Reality* offers a transdisciplinary vantage point that seeks to integrate and do justice to systematised experience from multiple perspectives. It does so on the ontological basis that the universe is ultimately composed of *happenings* of various kinds. These are theorised as actual occasions of experience. Rather than accept a vicious dualism of nature, nature is conceived as an internally complex and conflicted interrelated unity of events, spreading all the way from the events of conscious human experience to the events constituting the sun of a distant galaxy.

Given the abstract and demanding nature of these metatheoretical reflections the reader may well ask: ‘why bother?’ This is a valid question, especially as process thought not only lacks a generally accepted ‘theory of the psychosocial subject’ but challenges the very idea that this can be completed or finished. If the universe itself, and everything within it, is an incompleteness in process, then no ‘final statement’ is possible because the very making of such a statement changes the world by ‘summarising’ it and entering that world as a new ingredient: ‘we can never survey the actual world except from the standpoint of an immediate concrescence which is falsifying the presupposed completion’ (Whitehead, 1929, p.211). Hence for Whitehead (1929, p.26), the first meaning of the word ‘process’ is ‘the expansion of the universe with respect to actual things’, and the ultimate principle is *creative becoming* (an event or occasion that brings many things together into a unity *adds* to the world the pattern of that new unity). Of course each given life-form must die (and hence comes to its completion as an actual entity), but the process of living itself continues its becoming not *despite* individual finitude, but *because* of it. The perished

actual is real potential for a new actualisation. For the present author, it is precisely this emphasis on creative becoming that is the answer to the question ‘why bother?’ Bother because process thought opens to a better understanding that we humans are a real and active *part* of the natural world and not sovereign subjects who stand above nature exploiting it as we choose and with no consequence. Bother because process thought shows that nature is poorly characterised as inert objective materiality: nature is energetic force and living creativity. Bother because, for both of these reasons, there are new grounds to take our experience, subjectivity, values and collectivity seriously as part of that wider nature: a part shaped over history by cultures constantly in need of critical and creative revision.

Process thought, as indicated both explicitly and implicitly throughout this contribution, can help in the ‘framing’ of psychosocial studies. The statement characterising the field that is offered by the Association of Psychosocial Studies (see the introductory section to this volume), and to which the present author contributed, notes three aspects. With respect to the first - concerning the ways in which subjective experience is interwoven with social life – process thought provides a thorough account of the nature of subjective experience and gives it primary ontological importance. Second, the process theoretical critique of abstraction (and emphasis on studying *actual occasions* of experience) steers psychosocial researchers away from dominant tendencies to abstract ‘the psychological’ from the societal, cultural, and historical settings which structure and occasion it. Third, the emphasis placed on the creative becoming of reality gives proper place to the shaping of society *by* psychological process which cannot be deterministically reduced to external forces, whether societal or biological. Given the genealogy hinted at above, the framing offered by process thought may also be helpful in stimulating debate between psychosocial studies and psychology (both mainstream and critical).

Finally, the many limits to the account here offered can only be broadly indicated. First, the fundamental rethinking of time as the *passage of events* that is at the heart of process ontology has barely been touched upon, since this would require a critique of the dominant model of time as an abstract succession of durationless instants (for an accessible overview see Hasty, 2020). Second, it is this rethinking of time as process that gives a new and forward-looking salience to ethics, again only briefly touched upon here. The universe is not conceived purely epistemically as something ‘known’ by a detached ‘knower’. In place of the alleged neutrality of a bifurcation between reality and representation, process thought asserts the real values put in play through the contrast of actuality with *what is possible*. This in turn gives new priority to aesthetics (see Zittoun and Stenner, 2021). Third, the emphasis here given to Whitehead’s thought in no way suggests that this author had the ‘final say’. He didn’t, and, as noted, thankfully no ‘final say’ is possible. Furthermore, as Brown and Stenner (2009) tried to make clear, depending on the topic at issue, many different thinkers will be relevant. Whitehead’s virtue is simply his unrivalled synoptic capacity for a ‘big picture’ which nevertheless *always insists upon grappling with the empirical detail proper to a topic*. Nothing would be more sterile than psychosocial research which imagined that its problems could be resolved theoretically. Future engagement of process thought with psychoanalytic thought will be a particularly fruitful adventure (see contributions in Wagoner and Zittoun, 2020). Finally, nothing has been said about the important matter of methodology and the practice of actual

research informed by process thought (though for pointers see Lury and Wakeford, 2012, Stenner, 2009, 2013, Stenner et al 2011, Reavey, 2021).

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