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ONE

The First Word or: in the Beginning is the Middle

For an instant, the stranded boat’s crew stood still; then turned. ‘The ship? Great God, where is the ship?’ Soon they throve dim, bewildering mediums saw her side-long fading phantom, as in the gaseous Fata Morgana; only the uppermost masts out of water; while fixed by infatuation, or fidelity, or fate, to their once lofty perches, the pagan harpooners still maintained their sinking look-outs on the sea. And now, concentric circles seized the lone boat itself, and all its crew, and each floating ear, and every lancepole, and spinning, animate and inanimate, all round and round in one vortex, carried the smallest chip of the Pequod out of sight.

(Moby-Dick, ch. 135)

We start at the end, at the famous scene in Herman Melville’s novel where the whaling ship Pequod, having finally engaged the great white whale, is crushed by Moby-Dick and slips slowly into the waters. The tiresome journey, driven forward by the obsession of Captain Ahab, is finished. But not for all. There is a survivor, Ishmael, who floats in the shark-infested waters, orphaned, awaiting his eventual rescue. What does Ishmael think as he bobs on the ocean and considers his miraculous fate? Does he actually consider himself saved? Would he not have preferred to have followed Ahab and the Pequod to the very end of their mission? Does he consider how to begin again, is he already dreaming of resuming the search for Moby-Dick? Or does his future lead elsewhere, away from the whale and the sea?

Melville’s classic is a novel which dwells at great length on ambitions, obsessions, on the drive to accomplish projects that seem perpetually just out of reach. As such, it is a psychological novel, a work that grapples with what it means to be a person. Ahab’s search for the white whale is an exemplary demonstration of human endeavour, of the desire to have done with something, to have finished off and realised a goal. Melville suggests that such ambitions contain within them something fateful and portentous. The search for Moby-Dick will end in
tragedy. It is destined to go unresolved. At the very end of the novel the whale itself—which has in any case only existed as, at best, a wave on the surface of the water, and, at worst, the object of Ahab's fevered vengeance—disappears entirely. Ahab, along with Starbuck, Queequq, Tashtego and the entire crew are drawn towards the end of their long, wearisome search. Except for the sole survivor, belched back to the surface of the water from the sinking wreck. Call me Ishmael... This is a book about what it means to think psychologically. About what it might mean, what it could mean to be a social psychologist. It is a book, we hope, befitting the times. To write on these themes 50 years, maybe even 30 years, ago would mean starting in a very different way. We would perhaps begin with the departure of Pequod as it sets sail, determined in its search. We would seek to write from the perspective not of Ishmael but of Ahab, with his dogged conviction that the whale is within his reach. In other words that it is possible to be entirely clear about precisely what it means to study the psychological, and that, moreover, the project of a social psychology is both clearly mapped and entirely realisable. From our historical perspective, we are less sure.

What separates Ishmael and Ahab is the shipwreck. What separates twenty-first-century from twentieth-century social psychology is not quite so dramatic, but every bit as eventful. It is the so-called ‘crisis’ experienced by the discipline in the 1970s. This comprised an intense set of debates about the nature of doing social psychology (see Gergen, 1973, 1982/1984; Harre & Secord, 1972; Israel & Tajfel, 1972), followed by a prolonged period of acrimony and reflection amongst the various participants. If before the crisis it was possible unproblematically to proclaim social psychology as a discipline with a bold vision and intellectual project, after the crisis such claims could only be made cautiously, argumentatively, and with great many caveats. Ahab knows what to do. He will hunt the whale no matter what stands in his way, he will track down and have done with Moby-Dick. Ishmael does not. He is confronted with choices: Should the project be begun anew? Should it be revised and entirely rethought? Should it simply be abandoned?

But why did the crisis come about in the first place? Why is it so difficult to adequately theorise the psychological? If a novelist like Melville can so brilliantly explicate the nature of obsession and vengeance, why can these same psychological processes not be unravelled in the laboratory, or at the very least be properly named and characterised by social psychologists? We will return throughout the book to the philosophical and methodological problems which psychologists face when attempting to do so. At the most general level the answer is that such attempts to fix and provide once-and-for-all explanations actually impede rather than enhances our understanding. Because such explanations drag the phenomenon kicking and screaming from its rightful place in the complex weave of human affairs and make it stand on its own, as something to be characterised, dissected and classified outside of the places and times where it has any meaning. If psychology kills its subject matter in

the course of taking hold of it, then novelists like Melville bring it back to life precisely because they approach the psychological indirecly, off-to-the-side (so to speak), by exploring how it unfolds when set loose in a particular context (How far will Ahab go? Where will this journey lead?).

Our contention is that all post-crisis writing in social psychology necessarily begins from the perspective of Ishmael rather than Ahab. It begins within the shadow of a calamity, of a disruption to the project. As such, it confronts uncertainty and indecision. The question is how to go on. For some writers, the answer is to return to previous convictions, to re-launch the project of social psychology and redouble our efforts to secure clarity and knowledge. For others, the project needs rethinking, a questioning of ambitions and goals and of the techniques needed to accomplish these ends. For others still the project is no longer worth pursuing, and the search for the white whale of the psychological needs to be replaced with other tangible pursuits (perhaps a search for the biological or for the discursive as foundations).

Whatever option is chosen, it seems that what is required is a new form of clarity. This involves a new start to the project, a clear sense of beginning again, or a new project altogether. Our argument in this book is that we do not need to consider the grounding of psychology as a practice in this way. That is to say that if it is correct to speak of psychology as having ‘foundations’ then we need to rid ourselves of the idea that these resemble the physical foundations of a house, or the financial act of commitment which establishes a charitable foundation. The foundations of psychology are, we want to argue, more akin to the ways in which biological cells and organisms continuously rebuild themselves whilst retaining their intrinsic identity over time. Or if psychology is akin to a building or an institution, it is closer to the model of the Shinto temple described by David Lowenthal (1985) which is systematically dismantled and rebuilt every twenty years without apparently disrupting its status. This is what we might call foundation through displacement, or, as we will describe later, as creative and reflexive foundationalism.

To begin to speak of foundations in this way is to run several risks. We are not suggesting that psychology ought to be founded anew in biology, and on the basis of the insights of the modern bio-sciences on the nature and processes of life. But we do want to rethink the relationship psychology has to biology and to the established ways we have of apportioning subject matter between ‘nature’ and ‘society’. We are not claiming that what is required is a new, once-and-for-all grounding of psychology in a clearly defined set of assumptions about how the worlds (physical, organic, personal and social) that we inhabit are organised. This would be to echo the call for ‘new foundations’ that is so routinely and tiresomely heard across the discipline. But we are proposing that such assumptions need to be continuously invoked and explored as an ongoing and integral part of what it means to be a psychologist. Finally, we are most certainly not calling for the demolition of all foundations whatsoever. Such a call is, of course, a foundational gesture in itself, albeit of a most peculiar and regressive nature.
What we seek to do in this book is proceed from the troublesome relationship we have to that which grounds us, which includes the desire to have done with grounding altogether. We will argue throughout that we can neither settle nor dispense with this relationship, and that attempts to do so merely push the problem into more complex and immediate forms (such as the complex recursive relationships that model builders discover when they need to relate their terms or variables). What needs to be done instead, we want to demonstrate, is to hold the relationship close and to continuously examine how foundations are constructed and reconstructed as a live feature of the phenomena we study.

We want then, to start from the perspective of Ishmael, confronted in a very literal way with the question of how to go on, and the means through which to persevere. We are not claiming that we are alone in this position, nor that we have the hubris to see ourselves as sole witnesses to a great disaster that has befallen the discipline. Rather, Ishmael denotes a particular way of seeing psychology that is available to any psychologist. We could call this, following the terminology of Michel Foucault, an ‘Ishmael-function’ (see Foucault, 1978). This would stand in contrast to the ‘Ahab-function’ of choosing to see psychology as a clearly defined project that is getting ever closer to making firm statements about the nature of psychological processes, despite their frustrating tendency to continually recede at precisely those moments when they seem just in reach.

As a discipline, psychology has tended towards the Ahab-function. It seeks answers to fundamental questions about thinking, about being a person. However, it attempts to do so by rigidly posing very narrowly defined questions which concern very specific facets of personhood that can be made to show up in laboratory settings or in the transcribed record of a tape-recorded interaction. In some sense, psychology ends up killing – or at the very least simplifying – the phenomena of which it desires to speak, in the same way that Ahab’s search for Moby-Dick strives to finish it off for good. But the psychological is no less elusive than the great white whale. Attempts to pin down the exact nature of psychological processes are notorious for their tendency to excise precisely that which is felt to be most essential. In this way, psychology typically falls far short of providing a convincing account of the rich diversity of human experience – the psychological slips away from what psychologists try to do.

How might we even begin to address this tendency? We can first of all observe that the psychological is to be found way beyond the laboratories and transcripts of the discipline of psychology. The psychological is quite literally everywhere – it is being worked out and worked through as a live concern in all aspects of human activity. Moreover, there are a great many disciplines and practices which seek to articulate the psychological. We find fine and subtle accounts of the psychological in art, literature, music, theatre, and in journalism, broadcasting, political commentary and public debate. What it means to be a person, to think psychologically, is being addressed and engaged in these realms. So it makes sense to say that not only ought we, as psychologists, to engage with these realms (such as the nineteenth-century North American literature of Melville), but we also have a kind of obligation to try to follow attempts to articulate the psychological wherever they lead us, which will be way beyond the safe confines of the psychology department. We need to do so not least because there is a reciprocal relationship, or interdependency, between academic psychology and these other realms of psychological enquiry. For example, the nineteenth-century psychology of someone like William James is most certainly influenced by the literary traditions of the time, not least that represented by his brother Henry James. Correspondingly, the work of a modern novelist such as Sarah Waters is shaped by shifting kinds of sexual identity and forms of experience that can be indexed to very particular historical and cultural moments, which include the versions of the psychological offered by the professional psychology of the time. We might then say that ‘psychology’ – broadly defined as the study of what it is to be a person – is everywhere.

We propose something like a kind of ‘second-order psychology’ which attempts to pursue the psychological across the complex cultural and material forms that it takes. If first-order psychology is the attempt to replicate and reproduce the psychological under narrow, laboratory-like conditions with the ambition of putting the mechanisms of human action ‘under the microscope’, so to speak, then second-order psychology is all about following human experience through the myriad of forms that it takes, including the forms mediated by scientific psychology itself. At every point, and with respect to the concrete form of experience we are studying, we should take guidance from those commentators and experts on experience who seem most relevant – here it may be literature, there it may be molecular biology, sometimes sociology, at other times art. If first-order psychology is governed by the Ahab-function (‘find and have done with the whale’) then second-order psychology is governed by the Ishmael-function (‘follow the whale, wherever it takes us, endlessly’).

Second-order psychology, however, must have another dimension to it that would chime with von Foerster’s (1993) notion of ‘second order cybernetics’ as a cybernetics of cybernetics. This dimension goes beyond the affirmation that psychology must ‘observe’ beings that are themselves ‘observers’ (a situation which necessitates what Luhmann [1998b] refers to as ‘second-order observation’ or the observation of observation). Thus, second-order psychology must also be a ‘meta’ or ‘reflective’ psychology to the extent that it recognises the need to study the scientific discipline as well as the subject matter (and the relations between the two). The psychological as subject matter is ultimately not separable from the forms of knowledge that take it as their object, and these forms of knowledge are in turn inseparable from the forms of social order in which they are implicated. The purpose of this book is to assemble some of the theoretical resources necessary for such a second-order psychology. We want to lay out a very different ‘image of the psychological’ alongside sets of terms, concepts and relations that enable its thought.
It should be clear from the above that we are not in the business of merely peddling one more postmodern story urging that we dispense with foundations in favour of continuing the job of deconstructing each and every claim to truth in the name of resistance to power. We are not 'anti-foundationalist' in this sense. Rather, we wish to explore the paradoxical sense in which we must continually create our foundations, precisely because we lack them. This is no small distinction. Anti-foundationalism proceeds negatively, smashing claims to truth, relativising notions of value, and ironing ideals of progress. Our reflexive or creative foundationalism, by contrast, risks the proposition that we must create our realities and live out our claims, as we are doing this already (whether we know it and like it or not), and that the art of living is always in the process of either progressing or regressing. Our environments, our bodies, our minds, our relationships, our societies are never static or singular, and can never be dissociated from 'value'. This means that we must take care. It does not mean, however, that human beings are somehow autonomous and God-like creators, inventing our worlds out of nothing but acts of will. On the contrary, we are ourselves creatures of a creative process that exceeds our own limited existence. Anti-foundationalism, for the most part, thrives on a premature distinction between natural and social sciences, or between the natural and the social and cultural more generally. Reflexive or creative foundationalism refuses this distinction and insists that we are hybrid creatures with multiple forms of heritage: creatures of biochemistry, creatures of consciousness, creatures of communication.

Following this introductory chapter, we have organised the book into eight core chapters and a conclusion. Each of the core chapters serves a double function. On the one hand, each deals with a key thinker in the development of reflexively foundational modes of thought and practice. On the other hand, each chapter homes in on a subject matter of psychological relevance. We use the key thinker as our guide or mediator to shed light on the topic or subject matter. We also read each thinker selectively. Although we hope each chapter is wide-ranging enough to serve as an introduction, we will admit that we adopt a reading strategy that emphasises connections and juxtapositions between thinkers rather than offering a 'purist' view of each in particular.

The eight core chapters divide into two sections. Chapters 4 to 9 deal with specific topics: communication (Luhmann), embodied experience (Artaud), affect (Spinoza), memory (Bergson), subjectivity (Foucault) and the stylisation of life (Deleuze). To set the scene for this run of six chapters, however, we considered it necessary to include two chapters dealing with much more general concepts that are indispensable to our project. We enlist Alfred North Whitehead as our guide to a concept of process, and Michel Serres as our guide to a concept of mediation. The accounts of communication, embodiment, affect, memory, selfhood and life-style that follow presuppose and put to work these more general notions of process and mediation. We are uncomfortably aware of the fact that our thinkers are all white, European males and that, with the exception of Michel Serres, all are dead. This selection rather obviously reflects our peculiar intellectual paths and our particular interests and desires. Equally obviously it should not be taken as suggesting that these are the only thinkers worth engaging with, or that scholarship prior to the era of TV was inherently superior (although sometimes we think this latter point may be true).

Our aim throughout the book has been - to borrow a phrase from Isabelle Stengers (2002) - to 'think with' our key authors. More specifically, we have tried to put the concepts to work in order to open up what are hopefully fresh insights into psychological phenomena and issues. We have not attempted to speculate on what psychology might look like when considered solely from the perspective of each thinker - a 'Bergsonian Psychology', a 'Spinozist Psychology', and so on. We have instead followed Deleuze's strategy in asking what particular 'image' of the psychological can be discerned through an engagement with the work of each thinker in turn. For this reason, we have also envisaged each chapter as an 'intervention' into a key debate or controversy within psychology. The chapter on Luhmann, for instance, constitutes an intervention into the current debate around what might be called the 'linguistic imperialism' of some forms of discourse analysis and discursive psychology. This debate relies on the discussion of the first bifurcation of paths that resulted from two answers to the question of where the 'psychological' is to be 'located'. For the cognitivists and phenomenologists who inherit the Cartesian and Kantian tradition, the answer is that the psychological is 'inside'. For strict behaviourists and discursive psychologists who inherit the tradition of pragmatism, speech act philosophy and Wittgenstein, the answer is that it is 'outside'. Luhmann would agree with Whitehead that the answer should be 'both'. As Whitehead puts it, language has two functions: it is 'conversational with another, and it is conversational oneself' (1938/1966, p. 32). The psychological is not thinkable without linguistic mediation, and yet neither is it reducible to language. The chapter on Bergson, to give a second example, intervenes in the 'memory wars' debate that was stirred up around the notions of 'recalled memory' and 'false memory syndrome'. Again, rather than polarise the debate into a choice between memories either being 'true' or being 'false', we use Bergson to 'loosen' proceedings and to explore the ethics of articulated memories as gifts of mediation that are passed from oneself in the past to oneself in the present.

Since our intention has been to 'think with' our thinkers, we have not tried to unify the various concepts at play, but to keep them quite specific. We wish to allow Luhmannian terminology to resonate alongside Whiteheadian, for instance, and to allow Artaud's 'momo thought' to reverberate with the memory of Bergson. To put it somewhat differently, this book does not do a job of 'assemblage' rather than 'systematisation' (Whitehead, 1938/1966, pp. 1-3). We do not reject the goal of systematisation, but consider it premature. Systematisation must start from presuppositions that we do not think have been adequately clarified. Psychology has long suffered from a premature systematisation that embodies an impoverished view of human capacities and hence of the human
being. If we are to avoid dismissing relevant forms of experience in the interest of system we must first concern ourselves with the task of assemblage. In this book, we assemble these things on the table before you, and we thereby invite the reader to think about Luhmannian systems theory next to Serres’ notion of parasitism, and Bergsonian duration next to Foucaultian subjectivity. In doing so, we are not unaware of the differences and discontinuities between such approaches. We are not unaware, for instance, that Luhmann begins with the proposition ‘systems there are’, whilst Serres doubts that there has ever been a system and suggests that what we call systems are actually spaces of transformation. In their own spaces, we think that both thinkers are right. The premature application of a mode of systematisation that construes this as a ‘contradiction’ would be fruitless and potentially damaging.

We thus consider the juxtapositions and contrasts to be important ingredients rather than ‘waste product’ to be eliminated, and we consider it a virtue to adopt a different theoretical vocabulary with each different subject matter. In Chapter 4 we selected Luhmann as our guide to communication because he draws upon autopoietic systems theory to rethink social systems. Autopoietic systems theory, as we will describe, is a mode of thought derived from biology that approaches the problem of the nature of organic life by beginning with a paradoxical principle of self (auto) creation or production (poiesis). In applying this notion to systems that operate in the element of communication, Luhmann gives us an account of the social and the psychological based upon a form of reflexively creative foundationalism compatible, but not identical, with the philosophies of Whitehead and Serres.

But this does not mean that Luhmann has somehow ‘got it right’, or that his approach adequately covers all relevant aspects of experience. On the contrary, Luhmann’s thinking remains rather ‘cognitive’, ‘orderly’ and ‘disembodied’ in orientation. As a critical contrast to this, however, Chapter 5 brings to life the highly visceral, counter-normative and tormented life-work of Antonin Artaud. Where Luhmann stresses the autonomy and self-referentiality of communication, Artaud revels in the shrieks and howls of its physicality and embodiment. In this contrast, it might be said that science confronts art. Art cannot be avoided by a reflexively foundational psychology. Language can be used to write scientific papers, but it is also the medium of song, theatre and poetry. We speak with the intimate vitals of our bodies. The lungs and throat come into play, the heart and the gut respond and reverberate. Our intimate organic existence is thus stirred by speech and excited by song. The visceral engagements of Artaud are the very experiences excluded by the Luhmannian systematisation, and Artaud refuses to be ‘processed’ in a Luhmannian system. If Artaud the artist can experience what most of us refuse, then surely the contrast between Luhmann and Artaud can be experienced without being rejected.

Artaud draws our attention to the mixed pleasures and pains involved in the perpetual problem of ‘ordering’ our lives and being ‘ordered’. This theme is taken up in Chapter 6 where we focus upon Spinoza’s account of the affects. For Spinoza, affects are inseparable from the ongoing ethical task of living as well as possible. Psychology as a discipline badly needs to reconnect with this ethical dimension, and hence we take issue with current tendencies in neuroscience (notably the work of Antonio Damasio) to deploy ‘Spinozism’ in a way which arguably detracts from this. In a similar way, in Chapter 7 Bergson offers us a way beyond the narrow psychological notion of memory as a device for squirrelling away instants of past experience so that they can be retrieved at some future point and towards a notion of psychological life as itself a mobile continuity implicated in an uncertain ethical process of creative evolution. For Bergson, memory is less a mechanical device for storing and retrieving representational traces of experience than a ‘burden’ that we perpetually drag behind us and that grows heavier as we age. Our past is always with us, informing our present moment of experience, and sometimes – as the video for Radiohead’s ‘Karma Police’ eerily illustrates – it catches up with us.

A key concern of Chapter 8 is to ‘rescue’ Foucault’s work on subjectivity from a predominantly Anglophone interpretation which entirely misses the sense in which Foucault’s work resonates with reflexive foundationalism. Although this Anglophone interpretation recognises Foucault’s point that power is productive, it still construes that productivity in a monolithically negative sense, and hence notions of norm, normalisation and normativity take on only the static and negative meaning of the correspondence of an entity to an already given norm. In fact, as authors such as Greco (2004) have made clear, Foucault was influenced by, amongst many other things, Canguilhem’s distinction between normalisation and normativity. Normativity is the opposite of being ‘normed’ since it is the capacity to invent norms, and for Canguilhem, this is a defining feature of health as such. On this reading, Foucault’s later work on the care of the self was as much about experimenting with and pursuing forms of normativity as about avoiding normalisation.

The chapter on Deleuze develops this notion of the challenge to enhance one’s capacity for normativity. The problem we face in psychology, it is argued, is less the problem of ‘the subject’ and of our own individual ‘selves’ or ‘identities’ than the problem of ‘life’ and living. Life is the prior term and the source of more complex and self-conscious subjective modes, and it is perfectly possible that our ‘selves’ can become obstacles to our normativity. If we follow Deleuze we are led to a re-invention of the psychological in relation, not to static qualities of personhood, but to forces: becomings, flows, motions, events, e-motions, and to the patterns of mediation that bring this flux to life.

At the end, of course, we begin again. The final chapter offers a simple mnemonic device that we hope will serve to condense some of our hot air into a memorable droplet. A key take-home message from all of our thinkers is that
psychology must attend to experience. The components of experience are infinitely various, but, as put by Whitehead (1933/1935, p. 291):

Nothing can be omitted, experience drunk and experience sober, experience sleeping and experience waking, experience drowsy and experience wide-awake, experience self-conscious and experience self-forgetful, experience intellectual and experience physical, experience religious and experience scepical, experience anxious and experience carefree, experience anticipatory and experience retrospective, experience happy and experience grieving, experience dominated by emotion and experience under self-restraint, experience in the light and experience in the dark, experience normal and experience abnormal.

In the final chapter we suggest that the infinite components of experience can be usefully gathered together under the four headers of power, image, proposition and enunciation which together give us a process-oriented synthesis of the whole psyche stuffed into the mnemonic of a PIPE. We explicate this mnemonic using Magritte's famous artwork on the pipe theme. Power, image, proposition and enunciation are envisaged not as self-contained essences but as mutually mediating connective nodes or links in unfurling chains of process and becoming. Each is thus double-sided, with one side oriented to experience (which receives the gift of its inheritance from the past) and the other to expression (which transmits that gift to future experience). Life is this constant pulse of experience and expression which affords mediated connectivity with the wider universe. In this conception it could be noted that the psyche is rendered as a heart of sorts (see Dumoncel, 2003, p. 118, whose expression of Whitehead's 'faculty psychology' in a 'nathshell' gave inspiration for our pipe proposition). Experience is the moment of dilation associated with the diastole in which the heart fills with the blood of the world, and expression is the systolic contraction by which the blood of experience is driven back out into the world through the mediating arteries. In making this analogy we are being consistent with what was most important to that most austere of behavioural psychologists, J.B. Watson, albeit J.B. Watson in a mode of experience that was excluded from his formal psychology:

Every cell I have is yours, individually

And collectively.

My total reactions are positive

And towards you.

So likewise each and every heart reaction...

[J.B. Watson to Rosalie Reyner, April 1920, cited in Buckley, 1989: 12]

Whereas physiological psychology assumes that experiences are the outcome of physiological events (physiology comes first), psychological physiology assumes that physiological events are the outcomes of experiences (psychology comes first). [George Wolf, 1981, p. 274]

The question of experience is central to psychology, and yet hardly ever is it raised as such. The fact that we are organic, embodied beings seems to accord a primacy to the biological. It is simply commonsense to reason that experience must be derived from the very particular neurological, physiological and biochemical composition of our bodies. George Wolf's (1981) counter-argument is striking because it seems so counter-intuitive. How can it be possible for psychology, for experience to come first? The very idea seems vaguely spiritual, mystical even, suggesting an immaterial consciousness which somehow governs the body. Wolf's argument makes no such claims. It proposes, drawing on the philosophy of Alfred North Whitehead, to see experience as neither divorced from reality nor considered as an epiphenomenal 'projection', but quite literally as the becoming of objective reality.

A.N. Whitehead was born in the UK in 1861 and died in the USA in 1947. He was a mathematician and physicist by training, and worked in these fields at the Universities of Cambridge and London. His early work included an alternative version of relativity theory and, with Bertrand Russell, the three-volume Principia mathematica (published in the years 1910-1913), which built on the Grundgesetze I of Frege and revolutionised the foundations of mathematics (and provoked Gödel's famous theorem). His work has also influenced some prominent natural scientists (including the physicist David Bohm, the biologist Conrad Waddington, and the chemist Ilya Prigogine). His move to Harvard in 1924 was also a formal move into philosophy, and from this date until his death at the age of 86, he wrote a number of important works including Science and the modern world (1926), Process and reality