

The authors of this book explore the wide range of stimulating research possibilities Whitehead's process approach has to offer for different disciplines of thought: philosophy, physics, chemistry, biology, neuroscience, psychology, education, technology, ethics and feminism as well as theology. It will be demonstrated that with the use of Whitehead's relational process philosophy long standing problems can creatively be transformed and sometimes surprisingly new solutions can be elaborated. This book is offering arguments for a fundamental paradigm shift in different fields of research. In a period of major changes and of growing complexity of problems in all fields of life Whitehead's organismic philosophy gives substantial hope for improved interdisciplinary research. The papers of this book were presented at the 6<sup>th</sup> International Whitehead Conference in Salzburg 2006.

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Franz Riffert /  
Hans-Joachim Sander (eds.)

# Researching with Whitehead: System and Adventure

Essays in Honor of John B. Cobb

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# Reviving the Radical Enlightenment: Process Philosophy and the Struggle for Democracy

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*Abstract.* The central thesis defended here is that modernity can best be understood as a struggle between two main traditions of thought: the radical or “true” Enlightenment celebrating the world and life as creative and promoting the freedom of people to control their own destinies, and the moderate or “fake” Enlightenment which developed to oppose the democratic republicanism and Nature Enthusiasm of the radical Enlightenment. While the radical Enlightenment has promoted democracy, the central concern of the moderate Enlightenment has been to promote “possessive individualism” and the control of nature and people by discovering their laws of behaviour. While it has on occasion promoted religious tolerance and freedom of expression, the greater concern of the moderate Enlightenment has always been defence of property rights and the power of those with property. It is argued here that process philosophy is the highest development of the philosophy of the radical Enlightenment and needs to be appreciated as such if the radical Enlightenment is to be revived and process philosophy advanced.

## 1. Process Philosophy in History

What is, and what should be the place of process philosophy in current civilization? Recently process philosophy has been characterized as “constructive postmodernism”, as the philosophy to replace the culture of modernity which had been based on scientific materialism. While such a characterization of process philosophy has had its advantages, I have come to the conclusion that it is misleading. It does not do justice to the tradition from which it emerged, the achievements, breadth and vitality of this tradition and what is required to defend and advance it, nor adequately characterize the complexity of the culture of modernity and its problems. I will

argue that process philosophy is a development of the 'Radical Enlightenment', and that it should be appreciated as such. The radical Enlightenment was the original Enlightenment which evolved out of the Renaissance quest for liberty and democracy, and what came to be thought of as the Enlightenment, the 'moderate' Enlightenment, inspired mainly by Newton and Locke, was developed to neutralize the ideas of the radical Enlightenment. The exhaustion and discrediting of the 'Enlightenment' (for example see MacIntyre 1984, 51ff.), which has led to the 'postmodern' loss of faith in progress, should not be taken to be the end of the Enlightenment, but as the end of the compromise moderate or 'fake' Enlightenment, and the need to turn back to and revive the radical or 'true' Enlightenment. My argument is that it is in relation to this project that process philosophy should be upheld, promoted and developed.

In order to argue this it is first necessary to consider what is involved in defending process philosophy. While this might seem straightforward, closer inspection indicates the complexities of upholding such a philosophy. In general, process philosophers present themselves as the successors of scientific materialism and are concerned to show that for all its achievements, scientific materialism has foundered intellectually and practically. Process philosophy is the solution to the problems generated by scientific materialism. Proponents of process philosophy have supported the protest by Romantic poets and Idealist philosophers against the Newtonian mechanistic world-view, but have upheld this protest on objectivist rather than subjectivist foundations. They have opposed the devaluation of nature and opposed the imposition of mechanistic forms of thinking on social life. Process philosophers have also been concerned to reform theology and uphold some kind of pantheism. To defend these views they have not devalued the cognitive claims of the natural sciences but aligned themselves with and promoted efforts to advance post-mechanistic science. They argue that process philosophy provides the most promising basis for overcoming problems both within and between the natural and the human sciences and between the sciences, the humanities and the arts. Given this range of oppositions and alignments it is not surprising that proponents of process philosophy have been at the forefront of environmentalism. Environmental destruction, more than anything else, has brought

into sharp focus the problems of scientific materialism and the need for the kind of revolution in thought and culture that process philosophers have been working towards.

Other more specific and technical issues are defined in relation to these general issues. It is when these specific issues are taken up, however, that the problematic nature of upholding this general characterization of the situation becomes evident. As proponents of process philosophy know, they are upholding a notion of philosophy that most professional philosophers reject or, in many cases, no longer even understand. This is associated with upholding speculative metaphysics, and a particular view of what metaphysics is, which, apart from philosophically oriented scientists and historians and philosophers of science, is barely comprehended. Jürgen Habermas, for instance, characterizes metaphysics as defence of Idealism and writes of the problem faced by philosophy of continuing after the end of metaphysics. (Habermas 1988/1992) Process philosophers are also upholding a particular view of what science is that is at odds with positivist views of science which are still very influential among analytic philosophers and the general population. More broadly, process philosophers assume a view of history and of the role of ideas in history which is not only seldom shared; efforts to defend such a view are likely to be met with incredulity or misinterpretation among those not accustomed to such thinking. Orthodox Marxists, for instance, tend to dismiss those who accord a major place to philosophies in the dynamics of history as 'Idealists'. Recently, the difficulties of upholding such ideas have been exacerbated by postmodern relativism and the influence of bowdlerized ideas from French philosophy. How does one call for a revolution in metaphysics to people who identify the word metaphysics with the cardinal sin of the 'metaphysics of presence', or who dismiss efforts to identify and grapple with assumptions presumed to be central to culture as arboreal thinking which should be displaced by rhizomatic thinking?

Proponents of process philosophy are defining the current situation in terms of the philosophy being defended, and this involves not only defending a range of views not shared by others, but assumptions about almost everything, including what they take philosophy to be. This should not be seen as leading to relativism, however. The

process of interpreting the current situation we are facing, including rival interpretations of our situation, is just as much part of demonstrating the superiority of this philosophy as offering and developing solutions to the problems defined through this interpretation. (Gare 2000). Interpreting the current situation involves interpreting existing traditions of thought, pre-eminently those which dominate society, but also other challenges to these, explaining their successes and their failures, including their successes and failures in gaining acceptance. This requires an historical narrative of these traditions.

This is why Whitehead's *Science and the Modern World* is such an important work. *Science and the Modern World* characterizes modernity through a history of science, philosophy and literature and their relationships formulated from the perspective being defended. It describes the achievements of the dominant tradition of thought, characterized as scientific materialism, from its inception, placing it in its historical and social context, showing how it emerged, why it was accepted, how it has triumphed and advanced, and the problems it faces. These are described as the achievements of abstract thought, most importantly, mathematical thought, and the work shows what was involved in developing such abstractions, showing thereby how such abstractions can be replaced by more adequate abstractions. It also describes the challenges spawned by scientific materialism and why these have had only limited success. The inability of the abstractions of scientific materialism to give a place to the subject focused attention on the subject, generating a counter tradition of thought based on an affirmation of experience. The Romantic poets were central figures of this tradition. Jettisoning the Cartesian notion of the subject as a thinking substance and the abstractions by which experience had been characterized, this itself has been a creative tradition which has challenged the claims of scientific materialism. But the philosophies associated with this counter tradition were unable to do justice to the achievements of science, rendering their challenge impotent. Whitehead showed how these ideas and the fundamental opposition between the objective and the subjective realms have penetrated and vitiated the entire culture of the modern world. In this way he defined the problems of culture more generally. But he also pointed out that through the nineteenth century, which invented the method of invention, a re-

volution in scientific thought was brewing, a revolution that culminated in the development of relativity theory and quantum theory which undermined central tenets of scientific materialism. He then sketched a metaphysics which, doing full justice to mathematical physics and its achievements as well as to all aspects of our experience, showed promise of overcoming the failures of contemporary culture, allowing it to be reconstituted on new foundations. Very basically this involved conjecturing how the universe must be if we as subjects are part of the universe while its objective aspects are comprehensible to us, and then pointing out some of the implications of this new understanding of the universe.

*Science and the Modern World* also provides a framework for interpreting what has happened since the book was published and for interpreting more recent developments in thought, including those inspired by Whitehead's own work. Most obviously, these are developments within the sciences and in theology. But there is more. I have argued elsewhere that the demolition of logical positivism by historically oriented philosophers of science, vindicating Whitehead's characterization of science, was itself influenced by Whitehead's work. (Gare 1999, 131) Perhaps the greatest achievement in extending Whitehead's study of science was Joseph Needham's monumental *Science and Civilisation in China* which, presupposing Whitehead's philosophy of nature, transcended the perspective of European civilization to redefine both European and Chinese social and cultural history and the current state of the world (Gare, 1995). From the perspective provided by *Science and the Modern World* it is also possible to explain the advance of instrumentalist thinking as characterized by the Frankfurt Institute philosophers while providing a more adequate response to this advance, to sympathise with but also to explain the failure of efforts to overcome scientific materialism and instrumentalist thinking by privileging consciousness (as in existentialism) or communication (as in Habermas' discourse ethics) without tackling the metaphysical assumptions of scientific materialism and their continued influence, most importantly, through mainstream economics, psychology and evolutionary biology. Whitehead provides the basis for putting modernism back on track.

So what is the problem? In fact there are several. Firstly, historical developments since Whitehead wrote suggest a more problematic

advance into the future than Whitehead had envisaged. Secondly, the present state of culture is much more complex than is easily graspable with the framework of historical analysis provided by Whitehead. Thirdly, while Whitehead's schematic history of culture was a superb achievement for the time and the basic theses of this history are still credible, there have been advances in the history of science, philosophy and culture that require some modifications to Whitehead's interpretations. Since efforts to rethink cultural history are responses to the problematic advance into the future we are facing and the complexity of present culture, this is the best place to begin revising Whitehead's work.

## 2. Polyphonic History

What is this work in cultural history? To begin with, postmodernists have challenged received ways of periodizing history, with the medieval world seen as having been followed by the Renaissance, which was followed by the Reformation, then the Age of Reason which was followed by the Enlightenment. This was seen to have generated the Romantic reaction, which was followed by the Industrial Age of the nineteenth and twentieth centuries (followed by the "Electronic Age"). This was the scheme largely accepted by Whitehead, although he showed the development of ideas to be more complex than had previously been appreciated. Implicit in such periodization was a vision of a future not yet realized from the perspective of which the past could be characterized as stages on the way to realizing this vision. The complacent assumption of progress and its inevitability has been brought into question by postmodernists who saw it as denying significance to those who were, and are, not taken to be agents of this progress – non-Europeans, minorities, women etc. "Deconstructive" postmodernists embraced the loss of faith in progress as an "incredulity towards metanarratives", and with this, the supposed stages leading up to the present being were looked upon with suspicion.

However, this postmodern skepticism is also problematic. History looks chaotic when it is no longer considered in terms of stages to some better future; but this is not necessarily because the past was

chaotic without any progress. It inevitably appears this way when people can no longer uphold a vision of the future to be realized. As Karl Mannheim noted in *Ideology and Utopia*:

Whenever the utopia disappears, history ceases to be a process leading to an ultimate end. The frame of reference according to which we evaluate facts vanishes and we are left with a series of events all equal as far as their inner significance is concerned. The concept of historical time which led to qualitative different epochs disappears, and history becomes more and more like undifferentiated space. All those elements of thought which are rooted in utopias are now viewed from a sceptical relativist point of view. (Mannheim 1936, 253).

Mannheim speculated on the effect of a culture utterly devoid of utopian elements: "[T]he complete elimination of reality-transcending elements from our world would lead us to a "matter-of-factness" which ultimately would mean the decay of the human will." (Mannheim 1936, 262) Today, this decay is clearly evident among those who used to characterize themselves as politically of the "left". This is end result of postmodernism. But why should utopian elements be abolished? Historical narratives are more than accounts of the past; they are the means by which people orient themselves in the world to create the future. (Gare 2000)

The alternative to the view of history as inexorable progress or as chaotic is of a multi-linear becoming with a multiplicity of processes evolving together, sometimes supporting each other, sometimes conflicting, sometimes destroying each other, within which we are situated as historical actors. The view of history as multilinear was promoted by Fernand Braudel. Braudel argued that a multiplicity of temporalities should be recognized, and the relationships between them investigated:

History accepts and discovers multidimensional explanations, reaching as it were, vertically from one temporal plane to another. And on every plane there are also horizontal relations and connections [...] Certain structures live on for so long that they become stable elements for an indefinite number of generations: they encumber history, they impede and thus control its flow.

Others crumble away faster. But all operate simultaneously as a support and an obstacle. (Braudel 1972, 16f.)

Elsewhere he recognized a multiplicity of spatial orders associated with these temporal orders. (Braudel 1985, 21-88)

Braudel was considering history "from the outside", not as a participant, although as an historian he was also a participant in history. As a participant in any social formation one is virtually compelled to entertain narratives projecting goals for the future in terms of which the past and the present are understood. Looked at "from the inside" of such formations, that is, taking an "internalist" perspective involves taking seriously multiple voices with alternative construals of their history, sometimes challenging one's own, which along with one's own construal of history, are also part of the history of these formations. To do justice to reality from such an internalist perspective, historical narratives must be polyphonic and dialogic (to use the language of Mikhail Bakhtin), acknowledging that what is being presented is one perspective among others, open to challenge from these other perspectives. Recognizing and participating in multiple spatial and temporal levels of history involves upholding and working towards a variety of visions for the future of a variety of formations one is engaged in, including formations within formations, while recognizing that diverse others situated within these diverse formations are upholding and engaged in trying to realize their own visions of the future. It requires effort to work out how to reconcile different visions of one's own and others' with each other and how to combat visions which threaten the formations one is committed to. Doing so inevitably involves developing ever broader, more encompassing visions. To uphold a vision of the future for the whole of humanity in terms of which its whole past and present can be interpreted is then not a matter of believing in the inevitability of progress; it is merely to recognize that to be engaged in the world involves projecting a desired future, and appreciation of the diversity of traditions unfolding in the world requires an effort to envisage a future which as much as possible brings the ends of the formations to which people are committed into harmony.

Needham's history of Chinese science and civilization and its relation to European civilization illustrates the potential and tendency of

a history that has a place for multiple times and spaces to project a future while acknowledging diverse perspectives and transcending parochial perspectives of particular civilizations. However, it is the development of European civilization that I want to focus upon, and specifically, the Enlightenment. I will try to show that when multiple times and spaces are acknowledged, the supposed epochs of the modern era are more complex than traditionally understood; but nevertheless, the intellectual, cultural and social movements defining them have much more coherence over time than generally supposed, transcending these epochs and providing a reference point for comprehending this complexity.

### 3. The Radical and the Moderate Enlightenment

The Enlightenment is usually taken to have begun as a French movement of thought of the eighteenth century. From there the Enlightenment was taken up in Scotland and Germany and spread to the rest of Europe. Newton and Locke are seen to have inspired the French Enlightenment, and Voltaire, who promoted Newton and Locke within France, is usually taken to be the pre-eminent and prototypical figure of the early Enlightenment. It is acknowledged that there were divisions among Enlightenment thinkers. Some were concerned to promote tolerance, attack the privileges of the church and limit the powers of kings, the more radical, such as Rousseau, called for democracy. Some were deists; others skeptics and atheists. Until relatively recently, however, this did not bring into question the idea of the Enlightenment as an integrated movement of thought. It is in this way that it has been evaluated and either praised or condemned.

Ernst Cassirer assumed such a unity when at the beginning of his *The Philosophy of the Enlightenment* summed it up in a few sentences:

For this age, knowledge of its own activity, intellectual self-examination, and foresight are the proper function and essential task of thought. Thought not only seeks new, hitherto unknown goals but it wants to know where it is going and to determine for itself



the direction of its journey. It encounters the world with fresh joy and the courage of discovery, daily expecting new revelations. (Cassirer, 1951 4)

It was on this basis that Cassirer celebrated its achievements. Horkheimer and Adorno, also assumed a unified Enlightenment when they wrote:

The program of the Enlightenment was the disenchantment of the world; the dissolution of myths and the substitution of knowledge for fancy. [...] Technology is the essence of this knowledge. [...] What men want to learn from nature is how to use it in order wholly to dominate it and other men. That is the only aim. Ruthlessly, in despite of itself, the Enlightenment has extinguished any trace of its own self-consciousness. [...] On the road of modern science, men renounce any claim to meaning. They substitute formula for concept, rule and probability for cause and motive. [...] For the Enlightenment, whatever does not conform to the rule of computation and utility is suspect [...] that which does not reduce to numbers, and ultimately to the one, becomes illusion. [...] Men pay for the increase of their power with alienation from that over which they exercise their power. (Horkheimer and Adorno 1944/1983, 3,4,5,6,7,9).

It was on this basis that in investigating the Enlightenment they concluded that they had embarked upon “nothing less than the discovery of why mankind, instead of entering into a truly human condition, is sinking into a new kind of barbarism.” (Horkheimer and Adorno 1983, xi)

This assumption of basic unity was challenged when Margaret Jacob, building on work in the history of the origins of modern science, first published *The Radical Enlightenment: Pantheists, Freemasons and Republicans* in 1981. (Jacob 1981/2003) Jacob argued that there was an original, more radical Enlightenment that emerged from the English Revolution and the Dutch Republic, with deeper roots in the civic humanism of Northern Italy and the Nature Enthusiasm of Giordano Bruno, among others. It was a movement that divinized the world and promoted democratic republicanism. Jacob’s work spawned new research, and recently the thesis has

been defended strongly by Jonathon Israel. (Israel 2002) The main achievement of Israel was not to have justified his central claim that Spinoza was the source of the radical enlightenment, but to have shown in detail how the “moderate” Enlightenment developed as a reaction to this radical Enlightenment, with one of its main goals being to neutralize the influence of its radical cultural, social and political agenda. Developed by Cartesians, Newtonians and Leibnizians, the moderate Enlightenment was, as Israel noted, supported “by numerous governments and influential factions in the main Churches”. (Israel 2002, 11) And it was the ideas of Locke and Newton “which seemed uniquely suited to the moderate enlightenment purpose” (Israel 2002, 11) and which had the greatest influence.

#### 4. Precursors to the Radical Enlightenment

So what was the Radical Enlightenment? What was civic humanism? What was Nature Enthusiasm? How were these ideas related? And what was involved in the fusion of these ideas?

Very briefly, civic humanism originated in the self-governing cities of Northern Italy. In the struggle to sustain their liberty these Italians revived ideas from the Roman Republic and to a lesser extent, Ancient Greece, and developed these in new directions. While this movement of thought was at its most creative in the fifteenth century, it was a development of the culture of the Northern Italian city states which had begun to set up democratic republics in the Eleventh Century. Their culture developed in their efforts to defend their republics first from the German emperor and then later from Rome, and finally from the tendency for despots to seize power. (Skinner 1978; Skinner 1998) The Renaissance then was not merely a flourishing of culture and a rediscovery and revival of ideas of the Ancient World; it was a revival of the struggle for liberty of the Ancient World, lost when the Greek city states were subjugated by Macedonia and again when Julius Caesar overthrew the Roman Republic. But it was not only a revival; it was a new stage in this struggle enriched by the creative response to the new circumstances that the Northern Italians had had to confront. The centre of

this movement of thought was Florence, one of the last cities to preserve its democratic form of republicanism from both conquest and despotism. (Baron 1966) Here, liberty was characterized as being a member of and an active participant in a free self-governing community, in opposition to slavery - the condition of being subject to arbitrary domination by another.

Nature Enthusiasm developed later, and was connected to even more radical political movements. In general, the Nature Enthusiasts were hostile to hierarchical structures of power and promoted egalitarianism. Bruno, the most original thinker among the Nature Enthusiasts, came from the South of Italy which was ruled by the Spanish Habsburgs, and his execution in 1600 was partly associated with the efforts by the Spanish to crush an insurrection in this region by people influenced by such ideas. (Gosselin and Lerner 1995, 22) His political work involved serving Henri III of France in his effort to woo England into a union in opposition to Spain on the basis of new, more tolerant pantheistic Catholicism which would overcome the opposition between Protestantism and Catholicism, the Reformation and the Counter-Reformation. (Gosselin and Lerner 1995, 24ff.) Bruno also supported republicanism, but he did far more than this; he aligned himself with the poor, urging:

That the impotent be sustained by the potent, the weak be not oppressed by the stronger; that tyrants be deposed, just rulers and realms be constituted and strengthened, republics be favoured [...] that the poor be aided by the rich; that virtues and studies, useful and necessary to the commonwealth, be promoted, advanced, and maintained, and that those be exalted and remunerated who profited from them; and that the indolent, the avaricious, and the owners of property be scorned and held in contempt. (Jacob 1981/2003, 31f.)

The basis of Bruno's work to achieve this new social order was essentially a new religion. As Ramon Mendoza characterized his aims:

Bruno [...] wanted [...] an entirely new order for the world, a transvaluation of values similar to the one Nietzsche would propose three centuries later. As theoretical foundation and justification for that total revolution, Bruno had proposed a new philoso-

phy based on a totally new vision of the world and the universe, a philosophy which could, in turn, serve as a basis for an utterly new undogmatic religion acceptable to all rational men [...] (Mendoza 1995, 61)

This was to be based on a philosophy which he developed by synthesizing ideas from the radical Neo-Platonism of Nicholas of Cusa (who himself had been concerned to reconcile Eastern and Western Christianity), Stoicism and ideas from Anaximander, Pythagoras, Heraclitus, Anaxagoras and Lucretius. While appreciative of the role of mathematics in acquiring knowledge of the world, Bruno also argued that mathematics was limited and that it must be subordinated to the philosophy of nature if we are to comprehend the nature of the cosmos. He also acknowledged the achievements of poets in gaining wisdom.

In developing his new conception of the world Bruno collapsed the Neo-Platonic hierarchy which extended from the One down through the forms and the world soul through the created world to matter, to identify the divine One with matter and conceive of matter not as merely potential to take on forms, but as active and creative and pregnant with the forms. The forms are provided by the world soul, the unity which permeates all matter. (Bruno 1584/1998, 61; Gatti, 1999) Matter unfolds (*esplica*) what is enfolded (*implicato*) within it, coinciding with nature as principle of generation. Bruno also defended atomism, but took atoms, or 'monads', as the minimum spiritual units, like everything else, permeated by soul.

Through the agency of spiritual atoms, God becomes the source of all change and all existence in the universe. However, Bruno was not a determinist, arguing that new forms, structures and systems are continuously emerging from matter as it incessantly explores and tests these, bringing the viable ones to fruition. All bodies were seen to be alive, to have their own internal source of motion and capacity to steer themselves. On this basis Bruno offered support for and a radical reinterpretation of Copernicus' astronomy, going beyond the Copernican solar-centric conception of the universe to argue that each star is a sun with its planets, populated by other people. Developing the ideas of Nicholas of Cusa he argued that the universe is infinite; it is a sphere whose circumference is no-where and whose

centre is everywhere. (Bruno 1584/1998, 91) As a corollary to this, Bruno took each individual to be a centre of the universe, having its own significance. As Bruno argued, "Whatever thing we take in the universe, it has in itself that which is entire everywhere, and hence comprehends, in its own way, the entire everywhere, and hence comprehends, in its own way, the entire world soul [...] and the world soul is entire in every part of the universe." (Bruno 1584/1998, 91)

So, as Ramon Mendoza pointed out, "Bruno is a true precursor of 'process thought' or 'process theology' [...]" (Mendoza 1995, 146) And, as Jacob argued, "In Bruno's thought we find the three themes that will be consistently presented in the writings of eighteenth-century radicals: pantheistic materialism, the search for a religion of nature, and republicanism." (Jacob 1981/2003, 31).

##### 5. The Formation of the Radical and Moderate Enlightenments

The achievements of the Italians were a beacon for the rest of Europe, and the spread of the Renaissance was an extension of the quest for liberty, although for the most part in a more muted form. Developments in Switzerland, the Dutch United Provinces, and then the revolution in England should be understood in part at least as a continuation of the movement begun in Northern Italy to revive the quest for liberty, and it is in these countries that the ideas of the civic humanists and the more radical Nature Enthusiasts spread. Their proponents were united in their opposition to the dynastic states of the Spanish and Austrian Habsburgs. Understood in this way the Renaissance should not be regarded as the mere successor to medieval society and thought; it was part of a struggle against the absolutist rule of emperors, kings and the Church that went back to the eleventh century. Renaissance thought was particularly important in the Dutch United Provinces (see Israel 2002, 176) and in England where it played a major role in the first revolution. Civic humanists contributed significantly to undermining the authority of the King of England, paving the way for his execution, while the more radical revolutionaries, the "True Levellers" or "Diggers", influenced by the Nature Enthusiasts, proposed more radical trans-

formations of society, questioning established rights to property. (Hill 1975, ch.7; Easlea 1980, 222-231; Jacob 1981/2003, 31f.) The Italian civic humanists could only think of liberty in relation to a city controlling its own affairs, and democracy as general participation in such control. The Swiss, Dutch and English they influenced began to think of liberty in relation to confederations of cities or whole countries, and to grapple with the more difficult problem of participation and avoiding despotism in the governance of whole countries.

As the ideas of the civic humanists and Nature Enthusiasts became more influential they provoked more efforts to defend the old order and the old ideas. But at the same time they provoked something new; a reaction against the democratic tendencies of this movement of thought by philosophers who were nevertheless inspired by it to develop a new conception of the world and defend their political and ethical beliefs on this basis.

Thomas Hobbes took up the project of developing a mechanical philosophy to analyse humans and society in order to transform the language of politics to not merely oppose the ideas of the civic humanists, but to make their ideas unthinkable. (Skinner 2002a, ch.12; Hobbes 1651/1986, 267) Hobbes characterized humans as machines moved by appetites and aversions, society as a social contract between these egoistic individuals, and redefined liberty as not being hindered from acting according to one's powers. (Hobbes 1651/1986, 261ff.) Justice he redefined as simply that which is lawful, whatever the laws happen to be. Hobbes denied any connection between freedom and participation in the public life of an autonomous society, virtually denying any meaning to this notion of self-governing communities. As Quentin Skinner pointed out:

Renaissance political writers had begun to describe self-governing communities as *states*, *stati* or *états*, and more specifically as *stati liberi* or free states. They tended as a result to equate the powers of the state with the powers of its citizens when viewed as a *universitas* or corporate body of people [...] Hobbes dramatically reverses this understanding, arguing that it is only when we perform the act of instituting a sovereign to represent us that we transform ourselves from a multitude of individuals into a unified body of people. (Skinner 2002b, 13)

In society people are free, Hobbes argued, when through fear of the consequences of disobeying laws they acquire a will to obey the laws. (Skinner 2002b, ch.7; Hobbes 1651/1986, 262f.) The claim that anyone living in conditions of domination and dependence must have been deprived of their liberty was repudiated. Freedom, for Hobbes is compatible with rule by tyrants, the form of absolutist rule Hobbes was defending. Hobbes thereby engendered a tradition of political philosophy which largely eclipsed civic humanism. Skinner succinctly characterized the core difference between these traditions:

One [tradition] speaks of sovereignty as a property of the people, the other sees it as the possession of the state. One gives centrality to the figure of the virtuous citizen, the other to the sovereign as representative of the state. One assigns priority to the duties of citizens, the other to their rights. (Skinner 2002b, xi)

In France, Marin Mersenne, a friend of Hobbes and a lifelong friend of Descartes, took up the cudgels against Nature Enthusiasm. He characterized Bruno as “one of the wickedest men whom the earth has ever supported [...] who seems to have invented a new manner of philosophizing only in order to make underhand attacks on the Christian religion” (Easlea 1980, 108) and requested help from another friend, Pierre Gassendi, to oppose the influence of such ideas. But, as Brian Easlea put it, “attacks against a system are never enough to defeat it. What is needed is an alternative system. That alternative system – the mechanical philosophy – was provided by Gassendi himself and above all by René Descartes.” (Easlea 1980, 108)

In the later part of the seventeenth century the threat posed by the civic humanists and Nature Enthusiasts in England stimulated a vigorous response led by Robert Boyle and Isaac Newton. (Merchant, ch.8; Easlea 1980, 136ff.) These natural philosophers developed their own version of the mechanical view of the world, which proved more successful than Cartesian metaphysics as a basis for making the world intelligible, to oppose Nature Enthusiasm. Newtonian thought projected a vision of an orderly world that came to dominate Britain and permeated Eighteenth Century Europe. (Dodds

and Jacob 1995) John Locke aligned himself with Boyle and Newton and defended their philosophy of nature (although as Whitehead has shown, he advanced ideas that could later be used to challenge this philosophy). More importantly, he used Hobbes’ ideas, reworking them to develop a new political philosophy which extended the claim to rights from the right to life to the right to property and the right where these rights are threatened to overthrow despots.

That is, the figures who inspired the most successful branch of moderate Enlightenment, Hobbes, Descartes, Newton and Locke, were themselves developing their ideas in opposition to the Renaissance inspired philosophies of nature and liberty which inspired the radical Enlightenment in order to oppose the democratic and egalitarian impulses of such thought. The philosophical precursors of the moderate Enlightenment were reacting against the precursors of the radical Enlightenment who were advancing Renaissance thought. Stephen Toulmin’s characterization of Descartes’ work and influence as the counter-Renaissance is entirely apt, and this characterization could be extended to Hobbes, Boyle, Newton and Locke. (Toulmin 1994, 24 & ch.2) A feature of this counter-Renaissance was the claim to absolute truth through the application of a method, the origin of what later came to be known as “scientism”, while denigrating narratives, metaphors and other literary tropes cherished by Renaissance thinkers. And, as Louis Dupré pointed out, “The engineer replaced the artist as model of the age.” (Dupré 1993, 66) The precursors of the moderate Enlightenment were no longer defending the medieval order. What they ended up promoting was a society based on what C.B. MacPherson called “possessive individualism”, eschewing democratic community while promoting greed as the basis for organizing society. (MacPherson 1962)

However, as Pocock and Skinner have shown, the ideas of the civic humanists were not entirely buried. They were maintained in Britain by Lord Bolingbroke and his followers, and eventually had a significant impact on the American revolution, particularly among those, such as Jefferson, who supported democracy. (Pocock 2003; Pocock 1989, 97f; Skinner 2002a, 344-367) More importantly, the ideas of the civic humanists were promoted by more radical thinkers who in the early eighteenth century began to synthesize them with the ideas of the Nature Enthusiasts. This involved developing a more

radical notion of liberty and democracy than that of the civic humanists because it was more inclusive. It involved a concern to alleviate the causes of poverty within countries, and support for liberty for all countries. According to Jacob, the major figure in effecting the synthesis of civic humanism with Nature Enthusiasm was John Toland. Toland coined the term 'pantheism' to characterize the identification of God and matter and disseminated democratic republican ideas clandestinely through the Masonic Lodges. This is what Jacob characterized as the 'radical Enlightenment'. It could be characterized as the "true" Enlightenment, as opposed to the 'false' Enlightenment of the "moderates".

As noted, Israel in a later work argued that Spinoza and other Dutch thinkers were the true originators of the radical Enlightenment. However, he has been criticized for confusing Spinoza with "Spinozism", a term used in the eighteenth century to brand any radical thinker seen to be promoting pantheism and republicanism. He has also been criticized for failing to appreciate the sources of Spinoza's ideas. (Jacob and La Volpa 2003; Zammito 2003) Spinoza, also, was influenced by civic humanism (as Israel himself notes, Israel, 176) and the ideas of Bruno, the same thinkers who influenced Toland. (McIntyre 1903, 337-343)

## 6. The Subsequent History of the Enlightenment

The radical and the moderate Enlightenments were in competition from the beginning of the eighteenth century, and have been ever since. The moderate Enlightenment triumphed in Britain and prevailed in America. It inaugurated a social order which was essentially an oligarchy of wealth. It was based on Newtonian cosmology of matter in motion according to immutable laws, a mechanistic view of humans, and a political philosophy based on the idea of social contract. Later it spawned utilitarianism which to some extent competed with the idea of society based on a social contract, but the basic conception of nature, humans and society were much the same. Utilitarianism originated with John Gay (portraying himself as a disciple of Locke), who argued in a work published in 1730 that "all people seek pleasure and avoid pain: to seek pleasure is at once

the necessary and the normal law of human action, and those actions are obligatory which lead to happiness." (Halévy 1904/1928/1978, 7) This he characterized as "moral Newtonianism". Effectively the moderate Enlightenment took the end of life to be increasing pleasure and reducing pain, and following Hobbes, defined freedom in terms of the individual's capacity to control the world to this end. These are the ideas that were incorporated into the new science of economics, which, inspired by Newton's model of science, became the central discourse for defining social reality. (Skinner 2003) Later, this was complemented by Darwinism and Social Darwinism. (Young 1985) This is the world-view which underlay Great Britain's industrialization and expansion into a global empire, creating great wealth while impoverishing its working class, destroying civilizations and pushing more primitive people to the brink of extinction. The radical Enlightenment made little headway in Britain until the second half of the nineteenth century.

The radical Enlightenment, continuing the Renaissance tradition of thought, developed in opposition to these atomistic and utilitarian forms of thinking that had come to dominate Britain. As an underground movement of thought until the end of the eighteenth century, however, its development was less coherent than the mainstream Enlightenment, and the opposition between the moderate and the radical Enlightenment was not sharply defined. Sometimes ideas important to the radical Enlightenment were developed by people who in no way shared their radical political orientation. In France, Montesquieu was an admirer of the moderate English thinkers and his ideas were taken up by other moderates, but he was influenced by civic humanism and his ideas also made an important contribution to the radical Enlightenment. Diderot and Rousseau, while working with members of the moderate Enlightenment, were really developing the radical Enlightenment, although Rousseau utilized the notion of society as a social contract. In Germany, the radical Enlightenment was opposed not by the Newtonian/Lockean branch of the moderate Enlightenment but by Leibniz and his followers. Notwithstanding Leibniz's political views and allegiances (he praised Hobbes' work and actively opposed the radical Enlightenment), his critique of Newtonian thought and the alternative philosophy of nature he elaborated provided a powerful source of ideas

for the proponents of the radical Enlightenment in Germany. Different aspects of the radical Enlightenment were developed by different thinkers independently of each other. And yet when seen as the development of a fusion of ideas from civic humanism and Nature Enthusiasm, it is possible to see a developing tradition of thought. Opposition to the old order or to despotism came to be understood by those aligned with the radical Enlightenment not as freedom to satisfy one's appetites, but as self-determination within an autonomous political community. This was the case in France, and then in Germany. It was in Germany that the radical Enlightenment was developed most fully and philosophers grappled most profoundly with the nature of freedom, but to a considerable extent, the radicalism of the ideas of the Germans were disguised and developed by people who backed away from acknowledging the full political implications of their ideas. The exception to this was Herder.

Herder embraced and developed the tradition of civic humanism while developing a general attack on the mechanistic view of nature (developed as a reformulation of Spinoza's philosophy), atomic individualism and the utilitarianism of the moderate Enlightenment. (Herder 1774/2004; Herder 1787/ 1940/2003; Barnard 1965; Barnard 1988; Beiser 1992; Beiser 1996; Beiser 2003; Zammito 2002) Having encountered Toland's writings in the 1770s, and through them, the work of Bruno, (Nisbet 1970, 13) Herder was the legitimate heir and the most important proponent of the radical Enlightenment in the late eighteenth century. In Germany, as elsewhere, those aligned with the radical Enlightenment were branded as Spinozists. But while Spinoza had exposed the incoherencies in Descartes' philosophy and identified God and the world, he still supported a mechanistic view of nature and an egoistic view of human motivation. Herder, in *God, Some Conversations*, defended Spinoza, but used Leibniz to criticize the mechanistic aspects of his thought. In doing so, he developed a view of nature closer to that of Bruno, but with a stronger emphasis on nature's creativity. (Herder 1787/1940/2003) Nature was seen to consist of organically functioning forces, continually active, progressing and perfecting themselves according to inner eternal laws. (Herder 1787/1940/2003, 190) He argued that humans are essentially social beings participating in this creativity,

and promulgated an ethics of self-expression or self-realization, calling on nations and individuals to express the potentialities unique to them. He acknowledged the diversity of ways of life and the value of each of these. He was vehemently opposed to the arrogance of Europeans and their destructive colonization and exploitation of the rest of the world. The concept of 'culture' was central to his thinking, and Herder was the first philosopher to refer to cultures' in the plural. To understand people of a different culture it is necessary to feel oneself into their worlds. Herder argued that each nation has its own culture, using this notion to refer to language, everyday practices and technology as well as art, literature, science and philosophy. It is through culture that we create ourselves, he argued. In this regard, Herder regarded poetry as particularly important. "A poet is the creator of a people; he gives it a world to contemplate," he wrote, although at the same time he argued that the poet is to an equal extent created by the people. (Berlin 1976/2000, 229) Poetry is "the expression of the highest aspirations" of a nation. (Herder 1796/1993, 143) But as Isaiah Berlin noted, Herder "believed from the beginning to the end of his life that all men are some degree artists, and that all artists are, first and last, men – fathers, sons, friends, citizens, fellow worshippers, men united by common action." (Berlin 1976/2000, 230)

While Herder is generally known as the theorist and proponent of national culture, what is not usually appreciated is the relation between this and his political philosophy. Herder was grappling with the problem inherited from the civic humanists of identifying the prime force for spontaneous political association which could overcome people's short-sighted self-interest and motivate them to strive for liberty, which he characterized as "self-determination". (Barnard 1965, 82) His proposed answer, 'culture', was associated with his strong commitment to democracy, his view that reform must come from below, and that freedom of speech is necessary to expose ideas to criticism. Although it was not fully elaborated, it was Herder who originated the idea that the State should be an expression and instrument of the nation; a nation-State.

Herder and the framework of ideas he developed to counter the moderate Enlightenment had an enormous influence on the subsequent history of Europe - and the world, although this was usually

mediated by the people he influenced: Goethe and Schiller, Fichte, the young Romantics, Schleiermacher, Hegel, Schelling and Marx, most of whom were also influenced by Kant. It is these thinkers who upheld freedom in its fullest sense in opposition to Hobbes debased notion of freedom, and this became the centre of an alternative tradition of political philosophy to that of the moderate Enlightenment. The demand for respect for the cultures of primitive peoples has its roots in Herder's thought along with opposition to imperialism on the grounds that every nation, including non-European nations, should be self-determining. It was Schelling, spelling out the implications of Herder's philosophy, who originally proposed something like the United Nations to uphold the freedom of different countries from aggression; that is, to project a world order based on self-determining nation-States. (Schelling, 1800/1978, 198) Philosophers influenced by Fichte and Hegel (most prominently Marx) opposed the reduction of workers to labour power without economic security and promoted the State's role in providing people with economic security so they could participate fully in community life and meet their obligations as citizens. A different branch of this tradition developed Herder's philosophy of nature, rejecting both the view of it as matter in motion and the instrumentalist view of it as devoid of intrinsic significance. Such developments were associated with upholding Herder's notion of education as *Bildung*, the formation of people as self-actualizing. This gave a place to aesthetics and to "feeling", that is, more concrete forms of experience.

It was the radical Enlightenment, particularly as this tradition was developed by German philosophers, that was the driving force for the development of democracy, not that of the moderate Enlightenment, although occasionally philosophers in this tradition did support some form of democracy. The influence of the radical Enlightenment was clearly evident in Britain where J.S. Mill, the most influential proponent of democracy in mid-nineteenth century Britain, while still calling himself a utilitarian, drew heavily on Herder's central ideas in formulating his political philosophy. (Barnard 1965, 167f.) Then towards the end of the nineteenth century T. H. Green, influenced by Kant, Fichte and Hegel, attacked the prevailing social Darwinism and laissez-faire doctrines of the economists. Green and the British Idealists he inspired promoted an alternative to the view

that the primary role of the State is to protect property and enforce contracts, arguing that as the rational aspect of a political community, the prime function of the State is to facilitate the development by individuals of their full potential to participate in community life and contribute to the common good. They promoted the extension of the franchise to all adults, argued for universal public education, attacked imperialism, and laid the intellectual foundations for the welfare state and social democracy. (Boucher 1997, p.xxvii) This was the "New Liberalism" which, unlike the liberalism deriving from Locke, was committed to democracy and to providing the economic conditions required to make democracy a reality.

However, the Idealists could not defend their political and ethical ideas against the challenge of Social Darwinism. British process philosophy, as developed by Samuel Alexander, Alfred North Whitehead and Robin Collingwood, emerged out of the Idealist tradition of thought (although also influenced by C.S. Peirce and Henri Bergson) in part as the quest to provide more defensible foundations for the Idealist political and ethical vision. While embracing the idea that consciousness is essentially social and free, process philosophers rejected Hegel's characterization of nature as something posited by Spirit. To defend and develop the Idealist notion of consciousness and the political ideals based upon it against the Social Darwinists, these process philosophers developed a non-reductionist naturalism, recovering thereby the core ideas and breadth of thought of Herder but worked out with far greater rigour. Process philosophers provide the basis for re-unifying the tradition deriving from Herder after elements of it had been developed in different directions, and the relation between natural and social philosophy was sundered. (Gare 2000) They have advanced this tradition through grappling with the issue of creativity in nature and society and clarifying greatly the nature of free agency while abandoning determinism altogether. In this way they have provided the basis for defending democracy in the modern world. Combating mechanistic thought, members of this tradition have developed a more adequate account of life and mind, signs and symbols, the individual and society. They have shown the limitations of purely formalist models of thinking and the importance of more concrete forms of experience (notably, feeling) associated with the art, poetry and stories,

while at the same time having advanced logic, the philosophy of mathematics and the philosophy of science and stimulated new advances within the sciences. It is in this context that I believe it is necessary to understand, evaluate and appreciate the achievements of the founding figures of modern process philosophy and those developing their ideas.

### 7. The Struggle between the Radical and Moderate Enlightenment

Despite the immense complexity of eighteenth, nineteenth and twentieth century cultural and political history, I am suggesting that it can be most fully understood in terms not only of the opposition between irrational prejudice and oppression on the one side and emancipation through reason on the other, but also between the often confused but enduring opposition between the Newtonian/ Lockean branch of the moderate Enlightenment and those developing the radical Enlightenment, particularly as this was developed and promulgated by Herder. And since the moderate Enlightenment was strongly influenced by the work of Hobbes, the history of culture can most fully be made sense of as a struggle between the philosophies aligned with or influenced, directly or indirectly, by Hobbes, and those aligned with and influenced directly or indirectly by Herder. Where philosophers were influenced by both these traditions, as were Rousseau, J. S. Mill, Marx and the Marxists, recognition of this opposition enables us to unravel the confusions and contradictions in their thought – something particularly important for understanding the achievements and failures of Marxism. It is because of this division between the radical and the moderate Enlightenment that Cassirer on the one hand and Horkheimer and Adorno on the other could assess the Enlightenment so differently.

How is it possible to make such a bold claim, particularly in light of the immense diversity of political conflicts, ideas and debates that have taken place not only within among thinkers of the Enlightenment but through a multiplicity countries and disciplines over several centuries? How can this claim be made in light of Braudel's argument that history consists of multiple times and multiple spaces? What I am suggesting is that not only basic traditions of thought, but

conflicts between rival traditions, are part of the long *durée*. Grappling with the basic assumptions of cultures, these conflicting traditions develop slowly and can have a pervasive influence on every facet of society, expressed through a multiplicity of histories with some autonomy of their own. In the case of the philosophy of the moderate Enlightenment this influence was enormous as Britain rose to become a global empire and influenced virtually every country in the world. The rise of the market extending around the globe while penetrating more and more facets of social life was not merely an effect of the world-view generated by Newton and Locke, but its growth was facilitated and augmented by this world-view and involved the incorporation of this world-view into society. And virtually all significant opposition to this advance in the nineteenth and twentieth centuries can be traced back to the tradition deriving from Herder. I am suggesting that only by appreciating the coherence and enormous influence of the ideas deriving from Hobbes and the effective opposition to these in the tradition deriving from Herder, that it becomes possible to see through the confusions of ideas and political movements and appreciate the significance and relevance of particular conflicts and debates. It is only then that we will see clearly the choices that have to be made, and also and most importantly, what are the possibilities for the future. It is by overcoming the confusions within particular debates brought about by failing to grasp the coherence of these two great traditions of thought and the fundamental differences between them that the potential of the radical Enlightenment can be realized.

While it is relatively easy to trace Hobbesian thinking through Locke, the utilitarians, the economists, Darwin and Social Darwinists, to socio-biology, neo-classical economics and recent efforts to characterize the brain as a computer, as noted, the influence of Herder is disguised by the subordinate position of the radical Enlightenment, resulting in a much more fragmented tradition. It has generated a greater number of competing sub-traditions within this tradition and has been further confused by the way in which ideas from it have been corrupted or appropriated by exponents of the dominant tradition. Such fragmentation and confusion is even more apparent when political movements are considered. The consequent disorien-



tation has greatly weakened the challenge of the radical Enlightenment to the dominant tradition.

One case illustrating this is the history of Romanticism and Idealism. Frederick Beiser has shown how close the early Romantics were in their thinking to Herder. (Beiser 2003) They were not anti-Enlightenment or anti-rational; they were part of the radical Enlightenment with all that this entailed. They were strongly committed to advancing democracy and they were attempting to develop a more adequate notion of rationality and a more organic view of nature from those being developed by proponents of the moderate Enlightenment. It was only later that their commitment to both rationality and to democracy waned. This opened a division between them and Hegel who originally had been closely associated with the young Romantics. Hegel elaborated an Objective or Absolute Idealism into a pan-rationalist cosmology which served to sustain the radical Enlightenment, but it became increasingly implausible and in turn generated another reaction against pan-rationalism. (Toews 1980; Toews 2004) The philosophers involved in this reaction (including the young Marx) divided, with one stream engendering neo-Kantianism, hermeneutics and existentialism, movements of thought that attempted to delimit the cognitive claims of the natural sciences, the other with efforts to revive natural philosophy and develop a post-mechanistic science. It is through such fragmentation that the plot of the radical Enlightenment was weakened and almost lost. By seeing it as a fragmented tradition in this way it becomes possible to appreciate process philosophy as the movement of thought which, having recovered the original project, can grant a place to the various intellectual advances of these sub-traditions, and then reintegrate them (Gare, 2002).

## 8. Reviving the Radical Enlightenment

We can now get back to the original question, What is, and what should be, the place of process philosophy in current civilization? I have been arguing that process philosophy should be seen as a development of the philosophy that lay at the core of the radical Enlightenment. While the radical Enlightenment was the original or

'true' Enlightenment, it was largely subverted by the moderate Enlightenment. Nevertheless, up until the third quarter of the twentieth century, the radical Enlightenment was becoming increasingly influential and until thirty years ago, looked like triumphing over the 'fake' Enlightenment. Its most recent advances, however, were associated with a decay and fragmentation of the philosophical vision underpinning its achievements, largely through the philosophical confusion of the political left and the triumph of analytic philosophy over metaphysics among professional philosophers. Process philosophy, the legitimate heir of the radical Enlightenment, has been marginalized. The consequent confusion in those committed to the ideals and goals of the radical Enlightenment has made it possible for proponents of a mutant form of the moderate Enlightenment to recapture the initiative and almost totally marginalize proponents of the radical Enlightenment.

At the beginning of this paper I pointed out the role of history in orienting people to create the future. One of the most important tasks to revive the radical Enlightenment is to emplot its history in such a way that this captures people's imaginations so that they can reorient their lives to become participants in creating the future it projects. It is necessary to enable people to appreciate what this history is, which must include an account of where the radical Enlightenment came from, what it projects, what have been its great achievements, and what are the challenges confronting it. It is necessary to recognize a developing tradition and appreciate it as such. To a considerable extent this has been undertaken in the history of ideas, although in a fragmented way. Philosophers belonging to the radical Enlightenment are now being appreciated as never before, Bruno and Herder being cases in point. We now have a better appreciation of the background to the emergence of the process philosophy of Peirce, James, Dewey, Bergson and Whitehead. However, the connection between all these thinkers and the relationship between them and broader intellectual, social and political movements that I have sketched here is still poorly understood.

In the political realm, the advance of social democracy, including public education, redistributive taxes, social security and rights for workers whereby people were provided with the means to play their role as citizens of a democracy and whereby the market was reduced

to an instrument of the community, along with recognition of the right of all nations throughout the world to form themselves as States, control their markets and determine their own futures, and the development of the League of Nations and then the United Nations to guarantee this, were enormous advances of the radical Enlightenment and should be appreciated as such. But history has been falsified by proponents of the moderate Enlightenment who lay claim to the achievements of the radical Enlightenment, particularly when it comes to the advance of democracy, blinding people to any appreciation of the conditions for achieving this. By promoting possessive individualism as democracy, opponents of the radical Enlightenment have been able to dismantle many of these hard won achievements and undermine people's liberty with very little resistance. We are now moving back to markets, out of the control of democratic communities, concentrating power, in the present case, into the hands of the managers of transnational corporations and their supporters, with political parties and State institutions being co-opted or captured and reduced to their instruments, and public property pillaged. (Korton 1996) This has resulted in the massive concentration of wealth and power, the revival of imperialism, the reduction of vast numbers of people to insecure cogs in the global economic machine, and the impoverishment of those unwilling or unable to take on such a role. It is creating a world-system which is inexorably undermining the environmental conditions for human existence. This has been represented as the spread of "democracy"; but this form of the moderate Enlightenment has so concentrated power and abrogated its traditional concerns with tolerance and individual liberty that even its proponents are disoriented by the juggernaut that has emerged. (Gray 2002) There are vast numbers of people appalled by current developments in the world, but for the most part, they are left without direction. They can only complain about the deterioration of their immediate life conditions and a range of threats which they feel powerless to do anything about. It is necessary to revive the radical Enlightenment and revive the quest for real liberty and real democracy. (Prugh, Costanza & Daly 2000)

It is in this context that the place of process philosophy in current civilization needs to be understood. It is the philosophy through which democracy can be defended and justified and which can then

orient people to live democratically. It is, I have suggested, the most advanced philosophy of the radical Enlightenment. However, where the radical Enlightenment is concerned, a philosophy cannot be proclaimed simply because it best serves its purposes. Philosophy cannot be reduced to a mere instrument. Rather, as an aspect of its commitment to democracy the radical Enlightenment is committed to free enquiry in pursuit of the truth. If we are to have real democracy where the people themselves are the governors, philosophy is required to provide people with a coherent world-view, open to questioning, to enable them to understand issues, make judgements about what is in the common good and participate in public debates. Philosophy in this sense is something that the moderate Enlightenment could and has abandoned. Although it was still adhered to by philosophers such as Hobbes who laid the foundations for the moderate Enlightenment, Hobbes argued that science is merely the accumulation of knowledge of how to control the world. (Hobbes 1986, ch.5) So, it matters little if a range of contradictory beliefs are upheld, so long as research extends control and this knowledge is passed on to others. And since this mechanistic vision is implicitly committed to placing all power in the hands of one or a few people who treat everything and everyone as predictable instruments, (Toulmin 1992) there is no reason why anyone other than the tyrant or oligarchy who rule should need to put things into perspective. Philosophy can be reduced to academic parlour games. The radical Enlightenment, however, requires not only the revival of this more traditional notion of philosophy but also the institutions to sustain and disseminate it. It requires philosophy and metaphysics as understood by process philosophers and so provides the conditions whereby process philosophy can be presented and taken seriously as a philosophy and contest the claims of other philosophers; and if it can be defended, then people can uphold it within institutions and live their lives accordingly.

It is the requirement of democracy for a coherent world-view that provides the basis for promulgating and defending process philosophy. A coherent conception of the world requires acknowledgement that there are beings which are able to develop such a coherent conception of the world, and any conception of the world that rules this out is incoherent. This implies beings who are free, conscious a-

gents. This was the insight of Kant and the Idealists of various kinds which process philosophers have embraced, but defended on naturalistic foundations. This is the intellectual core of process philosophy which makes its claims to truth difficult to resist. Once the possibility of freedom has been defended, justifying it as a goal is relatively easy, particularly when the alternative involves acceding to the destruction of the global eco-system. In a free court of enquiry, process philosophy can both defend itself and intellectually justify the radical Enlightenment and play the cultural role required for the democracy it is concerned to promote. So, in order to defend themselves process philosophers should appreciate themselves as part of the radical Enlightenment, and those concerned to realize the ideals of the radical Enlightenment, most importantly, to advance democracy, should appreciate its history and the importance of philosophy in general, and process philosophy in particular, to its advance, and then clarify their ideals accordingly.

#### Literature

- Barnard, F. M. (1965). *Herder's Social and Political Thought: From Enlightenment to Nationalism*. Oxford: Clarendon Press.
- Barnard, F. M. (1988). *Self-Direction and Political Legitimacy: Rousseau and Herder*. Oxford: Clarendon Press.
- Baron, H. (1966). *The Crisis of the Early Italian Renaissance*. Princeton, New Jersey: Princeton University Press (revised edition).
- Beiser, F. C. (1992). *Enlightenment, Revolution, and Romanticism: The Genesis of Modern German Political Thought, 1790-1800*, Cambridge, Mass.: Harvard University Press.
- Beiser, F. C. (Ed.) (1996). *The Early Political Writings of the German Romantics*. Cambridge: Cambridge University Press.
- Beiser, F. C. (2003). *The Romantic Imperative: The Concept of Early Romanticism*. Cambridge: Harvard University Press.
- Berlin, I. (2000). *Three Critics of the Enlightenment, Vico, Hamann, Herder*. London: Pimlico.
- Boucher, D. (1997). *The British Idealists*. Cambridge: Cambridge University Press.
- Braudel, F. (1972). *The Mediterranean and the Mediterranean World in the Age of Philip II*. London: Collins.
- Braudel, F. C. (1985). *Civilization and Capitalism 15th-18th Century. Vol. III. The Perspective of the World*. London: Fontana.

- Bruno, G. (1998). *Cause, Principle and Unity*. Cambridge, Cambridge University Press.
- Cassirer, E. (1951). *The Philosophy of the Enlightenment*. Princeton: Princeton University Press.
- Dodds, B. J. T. & Jacob, M. C. (1995). *Newton and the Culture of Newtonianism*. New Jersey: Humanities Press.
- Dupré, L. (1993). *Passage to Modernity: An Essay in the Hermeneutics of Nature and Culture*. New Haven: Yale University Press.
- Easlea, B. (1980). *Witch-hunting, Magic & the New Philosophy: An Introduction to Debates of the Scientific Revolution 1450-1750*. Sussex: Harvester Press.
- Gare, A. (1995). Understanding Oriental Cultures. *Philosophy East and West*, 45 (3), 309-328.
- Gare, A. (1996). *Nihilism Inc.* Sydney: Eco-Logical Press.
- Gare, A. (1999). Speculative Metaphysics and the Future of Philosophy: The Contemporary Relevance of Whitehead's Defence of Speculative Metaphysics. *Australasian Journal of Philosophy*, 77 (2), 127-145.
- Gare, A. (2000). Philosophy, Civilization and the Global Ecological Crisis: The Challenge of Process Metaphysics to Scientific Materialism. *Philosophy Today*, 44 (3/4), 283-294.
- Gare, A. (2002). The Roots of Postmodernism: Schelling, Process Philosophy and Poststructuralism. In Anne Daniell & Catherine Keller (Eds): *Process and Difference*. New York: State University of New York Press.
- Gatti, H. (1999). *Giordano Bruno and Renaissance Science*. Ithaca: Cornell University Press.
- Gosselin, E. A. & Lerner, L. S. (1995). Introduction. In Gordano Bruno: *The Ash Wednesday Supper*. Toronto: University of Toronto Press, 11-60.
- Gray, J. (2002). *False Dawn*. London: Granta Publications.
- Habermas, J. (1988/1992). *Postmetaphysical Thinking*. Cambridge: Cambridge University Press.
- Halévy, E. (1904/1928/1978). *The Growth of Philosophic Radicalism*. London: Faber and Faber.
- Herder, J. G. (1774/2004). *Another Philosophy of History and Selected Political Writings*. Indianapolis: Hackett.
- Herder, J. G. (1787/1940/2003). *God, Some Conversations*. Indianapolis: Bobbs-Merrill.
- Herder, J. G. (1993). *Against Pure Reason: Writings on Religion, Language, and History*. Marcia Bunge (Ed.). Minneapolis: Fortress Press.
- Hill, C. (1975). *The World Turned Upside Down*. Harmondsworth: Penguin.

- Hobbes, T. (1651/1986). *Leviathan*. Harmondsworth: Penguin Books.
- Horkheimer, M. & Adorno, T. W. (1944/1993). *Dialectic of Enlightenment*. New York: Continuum.
- Israel, J. I. (2002). *The Radical Enlightenment: Philosophy and the Making of Modernity 1650-1750*. Oxford: Oxford University Press.
- Jacob, M. C. (1981/2003). *The Radical Enlightenment: Pantheists, Freemasons and Republicans*. The Temple Publishers (2<sup>nd</sup> edition).
- Jacob, M. & La Volpa, A. (2003). Review of Jonathan I. Israel *The Radical Enlightenment*. *The Journal of Modern History*, 75 (2), 387-393.
- Korten, D. C. (1996). *When Corporations Rule the World*. San Francisco: Berrett-Koehler Publishers.
- MacIntyre, A. (1984). *After Virtue: A Study in Moral Theory*. Notre Dame: University of Notre Dame Press, (2<sup>nd</sup> edition).
- MacPherson, C. B. (1962). *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford: Oxford University Press.
- McIntyre, J. L. (1903). *Giordano Bruno*. Kessinger Reprints.
- Mannheim, K. (1936). *Ideology and Utopia*. San Diego: HBJ.
- Mendoza, R. (1995). *Giordano Bruno's Prelude to Contemporary Cosmology*. Shaftsbury, Dorset: Element Books.
- Merchant, C. (1982). *The Death of Nature: Women, Ecology and the Scientific Revolution*. London: Wildwood House.
- Nisbet, H. S. (1970). *Herder and the Philosophy & History of Science*. Cambridge: Modern Humanities Research Association.
- Pocock, J. G. A. (1989). Civic Humanism and Its Role in Anglo-American Thought. In *Politics, Language & Time: Essays on Political Thought and History*. Chicago: University of Chicago Press.
- Pocock, J. G. A. (1975/2003). *The Machiavellian Moment: Florentine Political Thought and the Atlantic Republican Tradition*. Princeton: Princeton University Press (2<sup>nd</sup> edition).
- Prugh, T., Costanza, R. & Daly, H. (2000). *The Local Politics of Global Sustainability*. Washington: Island Press.
- Richards, R. J. (2002). *The Romantic Conception of Life: Science and Philosophy in the Age of Goethe*. Chicago and London: The University of Chicago Press.
- Schelling, F. W. J. von (1800/1978). *System of Transcendental Idealism*. Charlottesville: University Press of Virginia.
- Skinner, Q. (1978). *The Foundations of Modern Political Thought, Volume One, The Renaissance*. Cambridge: Cambridge University Press.
- Skinner, Q. (1998). *Liberty Before Liberalism*. Cambridge: Cambridge University Press.

- Skinner, Q. (2002a). Augustan Politics and Renaissance Constitutional Thought. In *Visions of Politics, Volume II, Renaissance Virtues*. Cambridge: Cambridge University Press, 344-367.
- Skinner, Q. (2002b). *Visions of Politics, Volume III, Hobbes and Civil Society*. Cambridge: Cambridge University Press.
- Skinner, A. S. (2003). Economic Theory. In A. Broadie (Ed.): *The Cambridge Companion to the Scottish Enlightenment*. Cambridge: Cambridge University Press.
- Toews, J. E. (1980). *Hegelianism: The Path Toward Dialectical Humanism, 1805-1841*. Cambridge: Cambridge University Press.
- Toews, J. E. (2004). *Becoming Historical: Cultural Reformation and Public Memory in Early Nineteenth-Century Berlin*. Cambridge: Cambridge University Press.
- Toulmin, S. (1994). *Cosmopolis: The Hidden Agenda of Modernity*. Chicago: Chicago University Press.
- Young, R. M. (1985). *Darwin's Metaphor: Nature's Place in Victorian Culture*. Cambridge: Cambridge University Press.
- Zammito, J. H. (2002). *Kant, Herder, and the Birth of Anthropology*. Chicago: University of Chicago Press.
- Zammito, J. H. (2003). "The Most Hidden Conditions of Men of the First Rank": The Pantheist Current in Eighteenth-Century Germany "Uncovered" by the Spinoza. *Controversy. Eighteenth Century Thought*, 1, 335-368.

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