

Creating the Future

Arran Gare agare@swin.edu.au

Philosophy and Cultural Inquiry, Swinburne University,
Melbourne, Australia

Published in: The Palgrave Encyclopedia of the Possible

Definition:

“Creating the future” is a notion introduced by Alfred North Whitehead to define the task of universities and the function of philosophy. Implicitly, it is a rejection of the idea that the future is already determined, and in some sense, already exists, with the appearance of temporal becoming an illusion. “Creation” originally meant “the action of causing to exist”, or “a coming into being”. The “future” is not normally considered to be what can be created. Originally, it meant “yet to be”. It now tends to be defined in relation to time, as “the time to come”, where “time” is assumed to be an independent existent along with space as the “containers” of material beings, with the future in some sense pre-existing its becoming present. The quantity of “matter” or “mass-energy” is assumed to be constant and to change its position and configurations in predictable ways over time. To refer to the future as being created is to reject this view of the universe and the basic concepts that define it, replacing these with concepts that can make intelligible the freedom of and creativity of people, the future as in process of being created, and humans as partially responsible for what future is created. It is to recognize that there are real possibilities that can be envisioned, understood, chosen, and brought into existence, with some process philosophers claiming that new possibilities can also be created.

Keywords

A.N. Whitehead; Universities; Philosophy; Ecological civilization

Historical context

“The task of a university”, wrote Alfred North Whitehead in the epilogue to his book *Modes of Thought* (1938, p.171.), “is the creation of the future, so far as rational thought, and civilized modes of appreciation, can affect the issue. The future is big with every possibility of achievement and tragedy.” This proclamation, while appearing simple, is founded on a speculative philosophical system that challenges and attempts to replace assumptions that have dominated science and the broader culture since the Seventeenth Century. From the perspective of scientific materialism originating at that time, there is no creation, except possibly an original act by God in creating the universe with all its components and laws of motion. It was a conception of the universe consisting of inert matter moving endlessly, meaninglessly according to immutable laws, and the success of science was defined in terms of how everything else that appeared or happened in the world could be explained as merely the effects of these laws of motion. It was essentially a deterministic, block universe. While science has moved beyond this conception of the universe in detail, giving a place to a diversity of elementary particles and forces, to energy and information, mainstream science is still dominated by assumptions put in place by Newton, requiring of explanations the construction of mathematical models that map

out all possible states of a system and show which possible states must necessarily have been or will be, given boundary conditions and the current state of the world. Possible states are mere mathematical constructs for specifying what is in the present, what has been in the past, and what must necessarily be in the future. Including some indeterminacy in these models and accepting probabilities accords more significance to possible states, but not much more.

From this perspective, living beings, including humans, are complex machines, and free will is an illusion, even if some indeterminacy is acknowledged. Organisms survive because their structure ensures that they operate to maintain and reproduce themselves in competition with other living beings, or perhaps as Richard Dawkins argued, they are the survival machines of their genes. Thomas Hobbes (1982, p.113) argued that thinking ultimately is nothing but adding and subtracting, and science is knowledge of how to control the world to satisfy appetites and avoid aversions, most importantly, death. The most important additions to this cosmology since Hobbes as far as characterizing life and mind is concerned has been Darwinian evolutionary theory and the addition of information to what exists (along with matter and energy and forces of attraction and repulsion). Information is equated to negative entropy and the basis of cybernetic feedback mechanisms of control. DNA, making up our genes and determining our adult form, encodes information. The brain processes information just as do computers. Modern science, characterizing living beings as information processing cybernetic machines and explaining human interactions through games theory and economic models, upholds a Hobbesian/Darwinian worldview.

While this cosmology provoked a reaction from philosophers defending the reality of consciousness, free will, and grounds for ethical action transcending egoism, even Immanuel Kant and Friedrich Schelling, who were most concerned to defend the reality of freedom, still accepted a deterministic universe. Such determinism was challenged by Henri Bergson who argued that there is an asymmetry between the present and the past and the present and the future. In *Creative Evolution* (1983) he argued that the future, while influenced by the past, is open and that genuine creation, not entirely determined by the past and not simply random, is possible. In *Process and Reality* (1972), Whitehead developed a speculative cosmology based on advances in logic and the sciences that would rigorously defend this view of the universe. Identifying, questioning and rejecting deep assumptions that had dominated thinking since the Ancient Greeks and had crystalized with scientific materialism, most importantly, the notion "substance", Whitehead developed a categorial scheme that made "creativity" the first category of the "ultimate", the most basic category through which all that exists is defined and must be understood.

What this means is that Whitehead was rejecting the idea that there is some "substance" – "matter" or whatever - that is moving, rearranging or reorganizing predictably over time, arguing that the universe consists of "organisms" understood as self-creating processes. What exists first of all are "actual occasions", the being of which is constituted by their becoming. These elementary organisms do not exist in isolation but only become only through relating to past and contemporary processes. They are constrained by these, but not completely determined by them. They are capable of and do form into "societies", which are more complex "organisms". In Whitehead's categorial scheme there are also "pure potentials" or possibilities, characterized as "forms of definiteness", which can be selected and realized as "ingredients" in these creative processes of becoming. Originally, Whitehead referred to these potentialities as "eternal objects", but later, dropped this term. Later philosophers inspired by Whitehead's philosophy argued that, with the evolution of the universe, new possibilities come into existence (Code, 2002)

It is in terms of this philosophy that Whitehead developed his notion of creating the future, defending the reality of human freedom, and characterized universities as participating in creating the future.

What is “Creating the Future”?

Given Whitehead’s characterization of universities and philosophy as playing a role in creating the future, developing the notion of “creating the future” is itself participating in creating the future, and illustrates what it involves. In *Modes of Thought* (1932) Whitehead railed against philosophers who worked within the limits of the dictionary on the assumption that humankind has already entertained all the ideas required to elucidate experience. It is here that he defended philosophy as “an attitude of mind towards doctrines ignorantly entertained.” He continued: “The philosophic attempt takes every word, and every phrase, in the verbal expression of thought, and asks, What does it mean?” (p.171f.) To overcome the limitations of language, words must be redefined. As he wrote in *Process and Reality* (1978, p.4), “Words and phrases must be stretched towards a generality foreign to their ordinary usage; and however such elements of language be stabilized as technicalities, they remain metaphors mutely appealing for an imaginative leap.”

In stretching words, it is clearly necessary to assume that they have some meaning before they are stretched. The words “creating” and “future” have common-sense meanings, although these are not entirely clear and they have altered over time, and both are more limited than implied by Whitehead’s use of these words. With our positivistic understanding of science and technology, which Whitehead and his allies have been concerned to oppose, “creating” was accorded little place. Advances in science are taken to be the outcome of investments employing trained people to apply the scientific method to accumulating knowledge, which now can be equated with information, with metrics being developed to measure efficiency in its production. Evolutionary epistemology characterizes this as a further rearrangement of matter, energy, and information in the struggle of cyborgs for survival and domination, which with enough knowledge, could be explained, and in principle, predicted. “Creation” has been accorded a greater place in the arts and humanities. This is associated with the celebration of writers and artists who produce something entirely different than has ever been produced before. However, this trivializes this area of culture (and creativity), which as Hobbes (1982, p.102) argued, should be regarded as amusements and nothing else. This view of the arts, and along with the arts, the humanities, has engendered fashions changing at ever faster rates, without any evidence of progress. Only science and technology facilitating more efficient control are recognized as achieving and contributing to progress. In placing rational thought and civilized modes of appreciation at the centre of creating the future, Whitehead was rebelling against such thinking, portraying the great advances of science and technology along with the arts and humanities as major creative achievements.

It was in carrying through this rebellion that Whitehead made “creating” central to his speculative cosmology. The coming into being of elementary particles, galaxies and stars with planets were essentially creations, as was the emergence of life on Earth, the emergence of ecosystems, multi-celled organisms, animals, and humans. Creation is also evident within these created processes, for instance in the development of embryos into fully functioning organisms, and human newborns into cultured individuals able to participate responsibly in social and cultural life. While scientific materialists attempt to explain away such creative developments, for instance, by explaining epigenesis in organisms as simply control by DNA of biochemical reactions, scientists influenced by Whitehead see such developments as deeply problematic for mainstream science.

It is not just a matter of having to accept the reality of emergence. “Emergence” names a problem, not a solution, especially when considering the emergence of sentient life and consciousness. Construing being itself as essentially creative was Whitehead’s solution to the problem of emergence (Gare, 2002). New self-stabilizing patterns or “organisms” coming into existence, some radically different from the conditions of their emergence, but dependent upon them, were made intelligible by Whitehead through giving a place to creative self-formation of “organisms”. As actual occasions or societies of actual occasions, these “organisms” can realize entirely new possibilities, or as Whitehead characterised them, new forms of definiteness. These in turn make possible further creative emergence, creating further possibilities. The formation of the solar system created a planet that provided the conditions or possibility for the emergence of life. Primitive life made possible the emergence of sentient beings, then conscious beings, and then humans with language, then specialised discourses and institutions of learning, leading to the emergence of philosophy, mathematics, science, and literature. In this way, the possibility was created for philosophers to develop their understanding of the cosmos and to become conscious of its creativity, and of their own work as participation in its creation.

Rejecting the Newtonian conception of time as an independently existing actual entity, Whitehead (1978, p.320) argued that the past and the future must be defined in relation to the duration of actual occasions and causal efficacy. The past is that which present actual occasions are responding to, while the future is that which these actual occasions can causally influence. There is not only one duration, but a multiplicity of inter-related durations. Diverse actual occasions create the continuity of extension, which is the most general form of connectedness between them. Extension is real, because relations are real, but it is not actual but potential. As Whitehead (p.66) put it, “[t]his extensive continuum expresses the solidarity of all possible standpoints throughout the world; it is the first determination of order – that is, of real potentiality – arising out of the general character of the world.” Space and time are aspects of this extensive continuum, an order of potentialities for independence and interaction created by durational processes which, as processes of becoming, are creating space and time. Space and time are not the pre-existing containers of durational processes but are themselves created relations that, as ordered patterns of potentialities, become components of these processes.

Universities and Philosophy in the Context of Creative Evolution

As conceived through more recent Whiteheadian cosmology, the evolution of the universe, of life and humanity have generated an increasing range of new possibilities, and capacity to explore and embrace these. It took a billion years for eukaryotic cells that could combine to form complex multi-celled organisms to evolve from primitive life. It took several hundred thousand years for homo sapiens to develop civilizations, making possible the development of literacy and educational institutions, providing the conditions for the development of rhetoric, history, mathematics, and philosophy. It took two thousand years before history, mathematics and philosophy engendered experimental science. In each case, new possibilities were generated and embraced. The nature of this emergence is evident in the sequence of life forms. Plants have possibilities for altering their conditions of survival by being able to grow towards light and send roots down to water and produce chemicals to deter parasites. A sequence of new possibilities opened with animals being able to move. A snake responds to its immediate perceptual field and will pursue a mouse, but if the mouse disappears, the snake will cease pursuit. If a cat is pursuing a mouse and the mouse disappears it will continue pursuing the mouse. Its cognition extends to what is not immediately present in its perceptual field. Humans through language can consciously develop their cognition over generations,

enabling them to develop their comprehension of the entire universe and its history and envisage possibilities that have never existed.

This capacity was greatly augmented through the development of history, mathematics and philosophy, and then experimental science, and the institutions to advance these. New scientific theories not only explain what is but reveal new possibilities. Thermodynamics postulates absolute zero Kelvin at minus 273 degrees Celsius as the lowest possible temperature. The universe is cooling so that outer space is now 2.7 degrees Kelvin. Humans have now been able to cool helium down to very close to 0 degrees Kelvin, which unless there are other intelligent beings in the universe, is a temperature that has never existed before. This could open up the possibilities of new forms of technology exploiting superconductivity or superfluidity, just as Maxwell's explanation of light as a propagating wave of electro-magnetic fields enabled Hertz to discover radio waves, ushering in a sequence of new forms of electronic media and other forms of technology, opening new possibilities for communication and organization of societies.

Such technological advances most clearly manifest the role of rational thought in creating the future. However, Whitehead was also concerned to defend the role of civilized modes of appreciation. Predicting the possible consequences of actions, including such technological developments, and evaluating these and then choosing to avoid paths heading to disaster, is far more difficult. History is one of the most important disciplines in this regard. History originated in Ancient Greece as *Istoria*, learning through inquiry into the causes and consequences of conflicts (exemplified by Thucydides *History of the Peloponnesian War*), and then acquired a broader meaning, eventually becoming what we now understand as history. History is central to all intellectual endeavours and all complex human actions, from building a house to creating a civilization, since history is required to comprehend what has been achieved in the past, what the present situation is, what the unfinished projects are and what their problems are. History is required to situate each agent, whether individual or organization, in the context of these projects and problems, and therefore to reveal what is required to advance these projects. The development of advanced mathematics, philosophy and science would not be possible without their history. Without history, disciplines fragment into fashions. History is also required to evaluate such developments and projects, to identify their goals, their trajectories, and their unintended consequences. In a major and very influential work of history, Whitehead in *Science and the Modern World* (1932) portrayed the scientific revolution of the Seventeenth Century as a triumph of the achievements and potential of mathematics, combined with developments in natural philosophy that revealed the possibility of advancing knowledge through performing experiments, seen at the time in the broader context of fulfilling God's role for humans on Earth, showing how it led to the industrial revolution. This in turn led to undreamt of affluence, the triumph of European imperialism, increasingly destructive wars, the development of nuclear weapons capable of destroying civilization, a population explosion and the destabilization of the global ecosystem through the production of greenhouse gases and the destruction of local ecosystems that now threaten the future of humanity.

It is in this context that Whitehead's claim for the role of philosophy in creating the future should be understood. For Whitehead, philosophy is not one discipline among others, but the discipline that puts all specialist areas of enquiry, including history, mathematics, the different disciplines within science and the arts into perspective. Striving to achieve a coherent, comprehensive understanding of the cosmos and its history and our place within it, philosophy questions the assumptions of specialists and reveals alternative research programs, while acknowledging that full understanding can only be approached and never finally achieved. Striving for self-understanding, philosophy defines what humans are in all their complexity as individuals, as members of communities, institutions and

civilizations, as a species and as a form of life. It has the task of revealing the possibilities for achievement and destruction in all of these, and the responsibility of each individual participant. It is part of human self-creation. It is on this understanding that Whitehead could characterize the task of a university as the creation of the future and then portray philosophy as central to this.

Life and the Future of Civilization

Reflecting on the history of philosophy in relation to the scientific revolution of the Seventeenth Century and its consequences, in *Science and the Modern World* (1932, p.x) Whitehead portrayed philosophy as:

... the most effective of all the intellectual pursuits... It is the architect of the buildings of the spirit, and it is also their solvent:- and the spiritual precedes the material. Philosophy works slowly. Thoughts lie dormant for ages; and then, almost suddenly as it were, mankind finds that they have embodied themselves in institutions.

This claim was defended in the broader perspective of the whole history of European civilization in *Adventures of Ideas* (1933). The last part of this book was devoted to characterizing civilization conceived as the realization of human potential as the ultimate goal of humanity.

Whitehead's philosophy was designed to advance civilization by addressing and overcoming the basic flaws in the culture of modernity engendered by the scientific revolution. He was principally concerned to challenge positivist theories of knowledge and replace scientific materialism, overcoming the division in modern civilization between science and the humanities, and all the problems engendered by this division. This involved a new understanding of nature and of life, reinterpreting recent advances in physics and making intelligible the emergence of subjects and consciousness within nature. The most important group of people inspired by Whitehead were not professional philosophers but scientists; however, these scientists embraced Whitehead's grand vision for philosophy and its role in science and civilization and contributed to developing this philosophy. To begin with, Whitehead's main influence was on biologists, notably the theoretical biology movement led by C.H. Waddington and Joseph Needham.

The theoretical biology movement was opposed to the reductionism of biochemists and orthodox Darwinists and focussed on embryology and epigenesis. The problem in embryology is to explain how cells dividing and multiplying differentiate and generate the complex forms of adult organisms. Inspired by Whitehead, Waddington characterized this as a self-causing process developing on necessary paths, or chreods, through individuation engendering sub-processes and sub-subprocesses etc. associated with specific organs and their components. These necessary paths are self-stabilizing and if development is deflected, will return to their paths. However, these processes can become unstable and switch to different paths or be captured by other processes. DNA plays a role in influencing these paths of development and which paths will be taken, but should be seen as encoded instructions to be utilized by the developing organism rather than the organism being determined by it, without any simple one to one correlation between DNA and the phenotype or adult organism. Also, which paths are taken can be in response to the environment of the developing organism. That is, while these necessary paths imply some predictability in patterns of development in nature, there are other possible paths that could, and under certain circumstances, would be taken. While developed to characterize the processes of embryology, Waddington believed these concepts could be generalized to characterize developments elsewhere, including developments in ecosystems,

cognition and human societies. Formalized mathematically by René Thom as catastrophe theory, others extended these ideas even further.

Waddington's colleague, Joseph Needham, became an historian of science and a sinologist. His massive study *Science and Civilization in China* (1954-2015) examined the different trajectories of Western and Chinese science in the context of the histories of these different civilizations. Whitehead had argued that his thought was more in accordance with Eastern than Western thought, and Needham took Whitehead's organic philosophy as a key to understanding Chinese thought, showing that through the influence of Chinese thought on Leibniz and the influence of Leibniz on Whitehead, Whitehead's philosophy was influenced by Chinese thought. He argued that the Song Dynasty neo-Confucian Zhu Xi, who had integrated Daoist and Buddhist ideas into Confucian philosophy, with his concepts of *qi* (energy) and *li* (pattern) had anticipated the modern scientific view that nature consists of patterns or energy developing on different paths. "Chreods" can be seen as another name for "Dao". Applied to civilizations, and to the development of science, Needham was showing that very different paths could be taken by humanity, and science itself could develop in different ways, although he claimed that the synthesis of Chinese thought with Western science being developed by the tradition that Whitehead was advancing was superior to all previous science.

Considering the "requisites for social progress," in *Science and the Modern World* (1932, p.244), Whitehead identified the main threats to such progress: "The two evils are: one, the ignorance of the true relation of each organism to its environment; and, the other, the habit of ignoring the intrinsic worth of the environment which must be allowed its weight in any consideration of final ends." Waddington was one of the early followers of Whitehead to focus on the problem of environmental destruction and sought to work out what humans could do to prevent this. Embracing Whitehead's claim that we are creating the future, his reflections on this were published as his last book *The Man-Made Future* (1978). Here he showed how the concepts he was developing could be applied to dealing with these problems. Lao-Tzu (n.d.) is attributed the observation that "Unless you change direction, you are likely to end up where you are going." With scientific materialism, there was no possibility of changing paths. Humans, as survival machines for DNA, will act predictably in their own interests, with some immediate concern for other members of their species sharing their DNA, but no ability to work for the common good of humanity or life, making the trajectory we are on unavoidable. The Whiteheadian inspired science of Waddington, along with Needham's sinology, reveals the possibility of taking a different path. Ecological economics, also strongly influenced by Whitehead through the work of Herman Daly and John Cobb Jr. (1994), shows how economic institutions can be developed to ensure the economy serves the common good of humanity, understood as communities of communities, and prevent ecological destruction.

In 2007 the Chinese government was convinced by environmentalists that ecological destruction, including global warming, would be disastrous for the future of China and for the world. Pan Yue, the Vice-minister of China's State Environmental Protection Administration, argued that since Chinese would be worse affected than other people, China needed to lead the world in creating a global ecological civilization. The government embraced the goal of ecological civilization, although not necessarily in the radical form envisaged by Pan Yue and his allies. Philosophers, economists, ecologists, and other scientists around the world influenced by Whitehead embraced and promoted this goal for the whole of humanity. They are claiming we are not condemned by human nature to continue on our present path of ecological destruction to increase our own immediate affluence and to win out in power struggles at the expense of our common future. There are real possibilities, yet unrealized, for creating a world order committed to augmenting the conditions for life and humanity, including the life of the global ecosystem of which human communities are part (Gare, 2010).

Summary: Creating the Future and the Possible

Defining the task of a university as creating the future was not merely rhetoric on the part of Whitehead. It was spelling out the implications of a cosmology that he had presented and defended as the basis for understanding and advancing recent developments in science and redefining nature and life and the place of humanity within nature. This was presented as part of the effort to overcome the dualisms afflicting modern civilization where the scientific revolution of the Seventeenth Century had rendered sentient life and mind unintelligible, resulting in an irreconcilable division between the sciences and the humanities. While the humanities originated in the Florentine Renaissance with the quest to inspire people to defend their liberty, take responsibility for their actions and realize their potential to govern themselves, science rendered the notion of responsibility an illusion. Knowledge was seen as the means to make predictions and to control nature and people efficiently, and the drive for this efficiency was explained through people's appetites and aversions, being themselves products of arrangements of matter that had survived against rivals because of this drive. In the conflict between the sciences and the humanities, the humanities were already facing defeat in the early part of the Twentieth Century when Whitehead was developing his philosophy. Whitehead's cosmology was not only a defence of the humanities through aligning science with it, but a clarification of its aims, identifying these with the advance of civilized modes of thought, and civilization itself. Drawing on the entire past of European civilization while stretching words to create new meanings, Whitehead's philosophy was itself an instance of the creative advance of civilization, enabling this creativity to be understood. By encapsulating its implications in the phrase 'creating the future' to redefine the function of the university, he was helping to create the future.

In mounting this defence of civilization, Whitehead accorded a central place not only to creativity but to potentialities or possibilities. Scientific materialists accorded a place to possibilities only as means to represent what is the current state of matter and what necessarily must have happened in the past and will happen in the future. Without major revision, scientists could also allow that without detailed knowledge it is necessary to be satisfied with making predictions of probabilities, or even allow that basic laws of physics are not entirely deterministic. In these cases, possibilities are accorded some significance and even ontological status, but are accorded no causal efficacy. For Whitehead, possibilities are ingredients in the elementary beings of the universe, its basic "organisms" or processes, and their role is accentuated with the more complex processes of life (what have come to be known as "anticipatory systems"). With evolution, possibilities grasped as potentialities have become increasingly important aspects of agency. With humans, rational modes of thought have greatly increased the potentialities of humans to transform their worlds. However, these potentialities can be destroyed as innovations can take on a life of their own as people become addicted to the short-term benefits they provide, either satisfaction of their appetites or power over others. It is science as the quest for understanding beyond being an instrument for developing technology, along with civilized modes of appreciation cultivated by the arts and humanities, that humans through their educational institutions can come to appreciate their role in creating the future, revealing new possibilities and judging which possibilities should be aspired to and thereby incorporated into projects. The importance of recognizing this has become manifestly evident in the face of the global ecological crisis, and people inspired by Whitehead are striving to reveal the possibility of and to create a new kind of civilization based on affirming the value of life and a commitment to augmenting life, not only contemplatively, but in practice. Universities are central to this task.

References:

Bergson, Henri. (1983) [1911]. *Creative Evolution*. Trans. Arthur Mitchell. Lanham: University Press of America.

Code, Murray. (2002). Whitehead's Almost Comprehensive Naturalism. *Process Studies*. 31(1): 3-31.

Daly, Herman E. and John B. Cobb Jr. 1994. *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future*, 2nd ed. Boston: Beacon Press.

Gare, Arran. 2002. Process Philosophy and the Emergent Theory of Mind. *Concrescence*. 3: 1-12.

Gare, Arran. 2010. Toward an Ecological Civilization: The Science, Ethics, and Politics of Eco-Poiesis. *Process Studies*, 39(1): 5-38.

Hobbes, Thomas. (1982) [1651]. *Leviathan*. Harmondsworth: Penguin.

Lao Tzu. (n.d.). Lao Tzu Quotes, Sayings and Words of Wisdom. Retrieved July 22, 2020, from SuccessConsciousness at <https://www.successconsciousness.com/blog/quotes/lao-tzu-quotes/>.

Whitehead, Alfred North. (1932) [1926]. *Science and the Modern World*. Cambridge: Cambridge University Press.

Whitehead, Alfred North. (1933). *Adventures of Ideas*. N.Y. Macmillan.

Whitehead, Alfred North. (1938). *Modes of Thought*. N.Y.: Free Press.

Whitehead, Alfred North. (1978) [1929]. *Process and Reality, Corrected Edition*. London: Free Press.