

Futures Traded

Abstract

The ideas that the future is, on the one hand, open to transformation and, on the other, empty of content on the other are not simple givens in human culture. Rather, they have a long history, in which a variety of habits of mind and cultural themes are interwoven. Above all, they involve a claim of ownership in which rights over the future are transferred from the divine to human beings in the present. Here we examine how these ideas evolve through three interrelated strands within Western culture, that is, perfectibility, progress and profit. *Perfectibility* is a theme that unites natural philosophy (early modern science) and ancient Greece, via the Orphic and neo-Platonic idea that the goal of human existence is to emulate the divine by seeking perfection. The creation of ideal and invariant mathematical models of real entities and their relationships were undertaken within this context of a broader understanding of virtue, which united the perfectibility of human knowledge and scientific progress achieved. In the project of the 'restoration of perfection', both neo-Platonic and Baconian, this knowledge was applied not only to the human but also to the natural world. Nature is viewed as having an *abstract future*, that is, one in which events perpetually express the same eternal laws. *Progress* shapes the secular intellectual culture of the 18th century. Whereas religious traditions had seen the future as the product of a covenant established between God and humanity, the idea of progress emerges from within utopian literature, natural philosophy and 17th century millenarian political movements, depicting the future as open. History was governed by laws ultimately rooted in human psychology, and the aggregate direction of human evolution could be predicted using statistics and the new mathematics of probability. Consequently, the open future gradually became overshadowed by the imposition of an abstract future ascribed to 'social nature', pushing the question of collective and individual responsibility for the future into the background. *Profit* as a basic orientation of economic practice and the emergent discipline of economics in the 18th century views the future as empty, as a quantifiable resource that institutions and technologies of exchange can utilise to increase profit in the present. Supporting this perspective are 'Newtonian' theories of economic natural law and the use of mathematical modelling, both rooted in an understanding of economics as the aggregate result of individual activity. Classical and neoclassical economics sees problems of responsibility as being resolved by the economic system's natural laws: decision making has to rely on the abstract future of a mathematically-modelled economy. In this way, the possibility of an ethical context for the transformation of the future is eroded by collapsing the open human future into the *empty future* of an entirely naturalised economic humanity.

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1. Introduction

In contemporary industrialised societies, the future is represented as an empty space into which we move unhindered, its vacancy allowing us the freedom to transform and improve our lives. This understanding of the future is not a mental image, however. It informs and drives all kinds of social practice, constituting a basic habit of mind through which complex social activities can be coordinated. So sedimented is this assumption that it appears entirely natural: however, it has a multi-faceted history, some of which we narrate here.

The assumption that the future is empty is rooted in a set of social practices whose focus is on the *trading* of the future, and whose contingent process of development can be described in many ways. Here, we concentrate on a series of changes in social habits of mind that mark shifts in the relationship between two other ways of understanding and constructing the future.

- The first of these is the future as *abstract*, that is, as belonging to everyone and no one; an object of scientific predictions, it is the result of extrapolating mathematical relationships between phenomena out along the axis of Newtonian time.
- The second is the future as *open*, that is, as belonging to some degree to human beings themselves; as produced through human intervention supported by an awareness of freedom and potentiality. This can be usefully contrasted both with an abstract future and a predestined or providential future where ownership of future time lies with non-human agents.

As these forms of future-orientation emerged, their relationship with each other increasingly became marked by tensions. Eventually, as we shall see, these tensions are resolved after a fashion by the emergence of a third form, the *empty* future, in which a central problem associated with the open future, i.e. which potential future to choose, is solved using mathematical methods to quantify the prospective gains and losses entailed by each of the alternatives. With the appearance of an autonomous market economy towards the end of the 18th century, and an independent social science called economics within the same period, foundations were laid for the cultural dominance of an empty future.

The narrative concerning this historical relationship between abstract, open and empty futures will concern three cultural 'themes'. Each theme shifts the balance between the assumption that the future is a predictable result of the past, and the opposed assumption that it is the open realm of human intervention rooted in free action (see Appendix).

- *Perfectibility*: in ancient Greece, neo-Platonism marks a major shift in the human relationship with the future by insisting on the ethical duty of human beings to transform both themselves and the world around them through intellectual effort. The goal of transformation is the emulation of the divine, achieved by penetrating beneath the transient appearance of things to their invariant essence. Many of neo-Platonism's specific assumptions about nature and humanity also underlie natural philosophy's (early modern science) search for the eternal laws of nature. Nonetheless, there remains a crucial discontinuity between these traditions, which is caused by the (at first implicit) loss in science of a theological dimension to its understanding of the future. Nature became seen as a realm governed by autonomous laws that, although decreed by God, did not require his intervention. Within nature, the future would therefore be nothing other than a repetition of the past, something which only human intervention could – and should – change, for the benefit of humanity.
- *Progress*: The potential for transformation yielded by natural philosophy inspired early social scientists to use the assumptions of Newtonian science in their study of human societies, in the hope of discovering the eternal laws of social change and stability. Seeking to use this knowledge of the abstract future of 'social nature' to promote the advancement of society towards a higher condition of harmony, they appeared as oracles of progress towards a future state of perfection that had never yet existed in the world. Nonetheless, this commitment to an open future achieved through collective human effort, and through this, an overarching ethical framework with human perfection as the

goal, stood in tension with the abstract future embodied by the natural laws of history they sought to discover. Even if history were governed by laws, human practice continually introduces unpredictability into it.

- *Profit*: among the early social scientists, the study of trade and commerce as indicators of progress accompanied actual changes in economic practices, which began to free trade from extra-economic restrictions. The use of predictions about the future as a means of generating wealth through the borrowing of capital fed the increasing autonomy of the economy within industrialising societies. Within the emerging discipline of economics, these practices of prediction were given the support of a formal methodology based on the Newtonian model of probabilistic explanation developed by social scientists. This made it possible to simplify the context in which choices about what futures were desirable would be made. Instead of debating endlessly about what qualitatively distinct visions of social progress should be followed, methods of economic forecasting allowed a quantitative comparison of policies in terms of their likely costs and benefits to be conducted. In this way, the open future of collective, goal-oriented action becomes an *empty future*, where the value of visions of progress is determined by their exchange value, not their use value. On this basis the abstract future of economic analysis determines what should be chosen, channelling human action according to 'iron laws'.

An empty future becomes a resource and a commodity, capable of being *traded* in the present for the advantage of those alive now and their immediate descendants. Ownership is assumed at the collective level for those who are living now, such that anyone can stake an individual claim. As a result the empty future becomes a fragmented future, projected, used and consumed in the myriad cases every day when a plan is formed that relies on economic forecasting, whether this is the buying of a house, the setting of interest rates, or the building of a nuclear power station that must one day be decommissioned.

However, although the social dominance of empty futures appears to resolve the tension between the desire to know the laws governing social nature, and the unpredictability of human action, this is not the case. The aggregate effects of economic activities are not, as dissident economists have been pointing out for a long time now, actually predictable. The complexity of large-scale economic interactions does not lead to linear mathematical solutions, contrary to the ideas of the first few generations of economic theorists.¹ Relying on mechanistic assumptions and linear mathematical methods makes economic planning possible. But it also results in the fragmentation of the future, as it makes possible as many different attempts to construct the future as there are economic actors. This leads to ever-greater complexity in the economic system, both in terms of interactions between economic processes in the present and in terms of the future consequences of these processes. Linearity, when used as the basis for millions of transactions every day, leads to disorder. The individualisation of futures made possible by the empty future is therefore quite different to the individualisation of futures implied by knowledge practices such as divination. Where divination aims at divulging *future presents* that tell of an individual's fate, and thus at preparing an individual for what is to come, economic forecasting and action aims at outlining and realising a potential *present future*, a possibility drawn from present knowledge.

In such a fragmented context, policy decisions cannot be made on the grounds of economic predictions alone. In subsequent chapters, we shall argue that a new ethical framework for action and policy is required, one which acknowledges anew that the future is open, not empty. In other words, it is necessary to affirm, with the social thinkers of the Enlightenment, that the future belongs to humanity, but that this sense of 'ownership' has to do with human responsibility for the future. Consequently a new conception of responsibility has to replace mere obedience to the laws of 'social nature', however this is conceived.

¹ Michael Hudson, "The Use and Abuse of Mathematical Economics," *Journal of Economic Studies* 27, no. 4/5 (2000).

2. *From Neo-Platonism to Natural Philosophy: Transformability and Perfectibility*

One of the main intellectual currents in the development of modern science was the neo-Platonic philosophical tradition, which began in ancient Greece before being picked up on by early Christianity. The various strands of neo-Platonic thought viewed the perfectibility of humanity as an individual goal achieved through emulation of the divine, an idea which flows into Christian thought, but also continues on into the intellectual culture of early modern science.

For neo-Platonism, intellectual discipline made it possible to know the true, hidden nature of things, and thus to observe the world, as it were, from a point outside time. Knowledge progresses, not through esoteric study of the ways of the gods, but by investigating the invariant structure of the physical world, the 'essence' behind the transient appearances that we experience through our senses.

Its roots lay in Orphic religious cults, which created a revolution in ancient Greek religion. Whereas the earlier polytheistic Olympian religion had taught that the future was in the hands of the Gods, whose domain should not be trespassed on by humans, Orphism taught that perfection, the realisation of human potential through the emulation of the divine One, is the goal of all human beings.²

Behind the appearance of the world as a temporal series of events, is thus a perfect order whose reality transcends time. From Plato through to Plotinus and beyond, this way of thinking sees the link between past and future as one between the start of a journey and its ultimate destination, an image which is true of both individual lives and the story of the cosmos. The guiding light of this journey is provided by eternal truth. The journey begins in confusion – in a literal state of chaos for the cosmos, and for the individual in a state of immersion in the world of the senses. Just as God's creation of the cosmos divides and orders primal chaos, so through discipline and study does the individual ascend to higher and higher levels of perfection, escaping in the process enslavement by the senses, and by extension, by time itself. This effort on the part of human beings also assists in bringing the universe to a state of perfection, as intellectual labour reveals the secret order of the cosmos implanted by its creator and thus aids in achieving perfect human governance of nature.³

Chief among the tools used to achieve intellectual ascendance is mathematics, which distinguishes the neo-Platonic tradition to a degree from the rival Aristotelian one. For neo-Platonists the nature of things and of the relations between them is primarily quantitative, whereas for Aristotle, quantity is only one of the ten categories through which the being of things can be understood, and is not the most important. For neo-Platonism, 'the space of geometry is identical with the space of the universe'.⁴

There are therefore three central assumptions in neo-Platonism. In a changed form, these survive to influence the practices of 'natural philosophy', the early modern form of natural science:

- The transcendence of time through discovery of invariant natural structures (the essence behind transient appearance) is the goal of knowledge
- Mathematics is a means to this knowledge
- Knowledge of the eternal order provides a guide for action

The methodology adopted by the natural philosophers also changes the way the future is understood by transforming the ethical framework that guides future-oriented action. The result is a widening of the separation insisted on by the neo-Platonists between God (the One) 'in himself' and created nature.

² John Passmore, *The Perfectibility of Man* (Indianapolis: Liberty Fund, 2000), pp. 43-4.

³ Plotinus, *Enneads*, trans. A. H. Armstrong (London: Heinemann, 1966), IV.3.7 and IV.8.6.

⁴ Edwin Arthur Burtt, *The Metaphysical Foundations of Modern Physical Science* (London: Routledge and Kegan Paul, 1959), p. 33.

Following the progressive refinement of algebra in India, the Islamic world and Europe up to the 16th century, mathematical approaches to nature changed. Instead of seeking evidence of the eternal order in large-scale regular natural patterns (as when the orbits of planets were likened to circles by Ptolemaic astronomers), investigators began to look for invariant order among the smallest constituents of natural phenomena. They used algebra to describe the motions and processes that give rise to these larger patterns in the first place.⁵

This shift of emphasis made possible a new explanatory scheme for natural phenomena, utilising a simple set of mathematical principles that explained the harmony between the various parts of a natural system. In fact, this approach adhered more rigorously to some key assumptions of neo-Platonic ontology than the soon-to-be outmoded Ptolemaic view of the universe. By seeking to make explanations of natural phenomena as mathematically simple as possible, it was hoped that the laws of nature could ultimately be placed in a hierarchy, with the most general mathematical laws at the top, thus providing a unified world-picture. With this goal as his inspiration, Copernicus designed a scientific method based on hypotheses, suggesting that a true hypothesis must bind together mathematically a number of things that seem to be distinct and thus unifies them at a higher level of description.⁶ This was taken a step further by Johannes Kepler (1571-1630), who, in distinguishing firmly between the primary and secondary qualities of things, determined that the primary qualities of things had to be qualities that could be expressed algebraically, with the secondary qualities (heat, colour, weight etc.) which we experience being merely effects of these primary ones. The relationships between things that determined changes in these primary qualities, which were held to be discoverable through experiment and mathematical modelling, were assumed to hold timelessly throughout natural processes. This meant that the same hierarchical relationship between an unchanging essence and mere appearance that featured within neo-Platonism re-emerged as a central assumption of natural philosophy.⁷

Further, natural philosophy returned to Plotinus' two-pronged theory of human purpose, within the context of a Christian interpretation of human nature, to provide a framework for scientific investigation in which the future and humanity's relationship to it was interpreted anew. This future was depicted by Francis Bacon (1561-1626) as one which would comprise both a general advancement of human learning, and an increasing level of control over natural processes.⁸

On the practical side, Bacon claimed that, although Adam had, through his sin, lost original dominion over nature, there was still possible a kind of inferior dominion, to be sought through knowledge.⁹ Knowledge of nature would enhance human capacities for transforming the natural world through the development and application of technology. As in some of the writings of the neo-Platonists, this process of transformation was seen as potentially leading to the restoration of a kind of perfection to the natural world.¹⁰

Further, Bacon's scientific method itself implies a specific future for natural philosophy considered as a social practice of theoretical knowledge, one which leads towards an ever more perfect understanding of the world. This is because the probabilistic nature of inductive reasoning based on experiment necessitates the collective review of results in order for it to consolidate the knowledge it produces. Bacon saw a need for experiments to be methodically organised and recorded, with the aim of incrementally and ceaselessly improving knowledge of the natural

⁵ Hans Jonas, *The Phenomenon of Life: Towards a Philosophical Biology* (Chicago; London: University of Chicago Press, 1982), p. 68.

⁶ Burt, *The Metaphysical Foundations of Modern Physical Science*, p. 45

⁷ *Ibid.* pp. 57-8.

⁸ Edgar Zilsel, "The Sociological Roots of Science," *American Journal of Sociology* 47 (1941-42). p. 557.

⁹ Herbert Butterfield, *The Origins of Modern Science 1300-1800* (London: G. Bell & Sons, 1965), pp. 98-9.

¹⁰ George Ovitt Jr., *The Restoration of Perfection: Labor and Technology in Medieval Culture* (New Brunswick, London: Rutgers University Press, 1987), pp. ix-x.

world.¹¹ With this way of doing science, an idea of collective intellectual progress is therefore made possible, a concept which would feed into 18th century concepts of general human progress (see next section).

Nonetheless, progress in both in practical control and theoretical knowledge is only meaningful within the context of post-Reformation Christian belief – that is, insofar as human beings remain bound by their finitude. Science is seen as a corrective, a means to free the human mind from a fixation on mere appearances, and thus to help bring the individual soul closer to God and perfection. But this quest for perfection remains constrained: as embodied, finite and sinful, human beings are also mainly motivated by their natural desires, and are therefore also subject to the ultimate law of nature, which is the repetition of the past. While the new science therefore organises itself around a specific image of the future as progress in theoretical and practical knowledge, it also circumscribes the ethical meaning of this advance. Just as Augustine had argued that humans could not achieve salvation through their endless ingenuity alone, the natural philosophers left room in their universe for the efficacy of faith. Whereas neo-Platonists had emphasised that perfection could be achieved through intellectual effort, ending in the contemplation of the One, for the natural philosophers, final redemption could only be possible through the grace of God, granted to a contrite soul freed from immersion in the physical world.

Within natural philosophy, there is therefore an implicit separation between nature and God. In earlier neo-Platonism, natural forms were seen as 'instances' of the Forms that existed in the divine mind, meaning that there was a kind of ontological continuity between the divine and the finite. In the new scientific worldview, nature is a realm entirely apart from God, governed by autonomous laws which constrain it from time immemorial to time-bound patterns of mechanical repetition. God himself is entirely *outside* time, existing in eternity, and intervening only to create both time and the world, and to bring both to an end at the last judgement. Eternity therefore encompasses time, meaning that there are in effect two temporal orders. Within time, the future of nature (considered apart from any human intervention) is entirely *abstract*, being reducible to predictable variations on patterns that have occurred in the past. Natural philosophy thus exists in an implicit tension with Christian faith: from its point of view, one can understand nature without God, who simply set it in motion. It is not necessary to know God to know the laws of nature. The existence of an encompassing ethical context for the exploration of nature, and for human conduct in respect of it, is only given with faith, not through reason. This marks a firm discontinuity between natural philosophy and early neo-Platonism, for which intellectual contemplation of nature led directly to God.

The sense of nature as a realm separate from God, governed by autonomous laws, was consolidated by the time of Newton. It rested on five fundamental presuppositions that can be said to underwrite the model of mathematical simplification that guides research:

- *Change and process are understood quantitatively, not qualitatively.* The rationality and comprehensibility of the cosmos lies in the uniformity of motion of its parts.
- *Atomism.* Galileo advanced the hypothesis that these elementary constituents are atoms ('corpuscles').¹² These atoms are the sole bearers of the primary qualities of matter, qualities which could be defined in quantitative terms alone.
- *Universal mechanism.* Robert Boyle (1627–1691), and after him, Newton, affirmed that change is nothing but an alteration in the quantity of motion belonging to a body or collection of atoms, and that the only thing that causes such alteration is collisions between atoms.
- *Quantitative commensurability of space and time.* The measure of change is therefore nothing but the number of units of space traversed by a body in units of

¹¹ Butterfield, *The Origins of Modern Science 1300-1800.*, p. 101.

¹² Burt, *The Metaphysical Foundations of Modern Physical Science.*p. 77-8.

time. Space is the medium that is occupied by bodies, whereas time is the medium in which change occurs.¹³ Time is therefore the 4th dimension of space, a line divided into t-coordinates. There is no qualitative variation within space and time. All that changes is the position of bodies, with time being a linear succession of slices or snapshots of the changes in the arrangement of these bodies.

- *Absoluteness of space and time.* Newton identifies absolute space and time as the fundamental presuppositions of any mechanistic and atomistic theory of change and process. Change can be described objectively in terms of modifications of a universal space and time, containers within which all events happen.

The future of Newtonian nature is therefore abstract in that it cannot be known to have any inherent structure beyond those laws that can be mathematically deduced from past experience. In contrast to the neo-Platonic view, Newtonian nature has no inherent tendency towards perfection.

No longer having an inherent motion, let alone futurity, of its own, nature could therefore be subjected to intervention in ways limited only by human ingenuity. Intervention in nature could then be conceived of as an entirely positive act, resulting in the superimposition of a purposive order onto a non-purposive one. This evaluation of human intervention is made possible by the previously mentioned implicit separation between God and nature that is built into the mechanistic and atomistic ontology of natural philosophy. Nature becomes tacitly excluded from the ethical order that, in neo-Platonism, still unites the future of the natural and human worlds. The possibility emerges that this shall be replaced by a vision of the unlimited human exploitation of nature.¹⁴

3. Utopian Social Theory: Providence versus Progress

The neo-Platonic theme of the restoration of perfection to nature through human intervention forms the basis of Bacon's account of the practical and theoretical tasks of science. It is also reflected within early modern utopian literary and political traditions, as well as within the work of the early social scientists in the 17th and 18th centuries, whose concepts of progress drew on utopian themes.

Both early modern utopian thought and early social science share a common ethical context within which they view the future: a promise of a general redemption from conflict, inequality and suffering, together with an appreciation of the responsibility that this places on the living. This is also shared by the major orthodox and heterodox monotheistic religious traditions. Nonetheless there are major differences between religious and utopian/social-scientific understandings of this ethical context. The primary cause of these differences has to do with whether the future is envisaged as being in the gift of providence, and thus as the fulfilment of a *restoration*, i.e. a new realisation of a condition originating in the immemorial past, or alternatively as the achievement, through human effort alone, of a condition which has never yet existed in any form. Where the future is thought of as a restoration, ownership of the future remains with a non-human agent who is held to have created the world in a condition that should be restored to it. This restored condition is generally thought of as a transfiguration of the world as it exists (and therefore is not necessarily a literal return to a previous condition, but a 'higher' realisation of perfection, e.g. a New Jerusalem), and may depend (in various ways) on some form of ethically-guided human action. The guarantee of correct guidance lies in the covenant formed between a people, or humanity itself, and God. On the other hand, where the future appears as the promise of an

¹³ Ibid., p. 84

¹⁴ The warrant for this is not necessarily, as has often been thought to be the case, justified directly and solely by Christian doctrine itself. On the various forms of relationship with nature (including stewardship) that medieval Christian doctrine proposed, see Ovitt Jr., *The Restoration of Perfection: Labor and Technology in Medieval Culture*, esp. pp. 70-87.

entirely new way of being, then implicitly the ownership of and responsibility for the future is seen as lying entirely with humans and their capacity to understand and realise their own potential through their own efforts alone.

It is certainly the case that religious traditions often allow a definite role to human effort in bringing about their idealised future. For example, within the Judaeo-Christian-Islamic traditions that base themselves on the idea of covenant, there are conflicts over the extent to which human effort can work alongside divine grace in bringing about salvation. Orthodox belief has often tended to agree with the line taken by Augustine, who saw humanity as endlessly ingenious but nevertheless unable to bring about its own salvation.¹⁵ In Judaism, the Messianic tradition draws on texts from the Mishnah that inveigh against 'forcing', through human action, the coming of the Messiah.¹⁶ Heterodox and mystical tendencies for their part often stressed the efficacy of human action in preparing the way for, or even bringing about, redemption: examples include Pelagianism and the various millennial sects in Christianity, the Jewish Kabbalistic concept of ethical action or *tikkun olam* as 'remedy for the broken worlds'¹⁷, and the role of Sufism in Islam. In these traditions, the scope of human responsibility extends further along a continuum, ranging from responsibility for bringing about one's own salvation, to the redemption of creation itself. In some versions of the heterodox Judaic tradition there is even no guarantee that salvation can be brought about by God alone.¹⁸ Nonetheless, in all these traditions the ownership of the future still lies with a non-human agent, who sealed his title of possession in an immemorial past, and laid down the principles of ethical conduct through which the future could be created.

As theories of progress emerged in the 17th and 18th century alongside political affirmations of human freedom, what united them was the assumption that, if progress was to be made beyond conflict and suffering, then it had to be through human effort alone. Karl Mannheim has argued that the reliance of religious visions (whether orthodox or heterodox) of future states on a presupposed past means they tend to have a compensatory function, and indeed one that legitimates the role of religious authority in the present's vale of tears. He suggests that an important departure from this way of thinking is when 'wish-images' of utopia, acknowledged as creations of human imagination that depict a perfect future brought about solely by human effort, are used to 'shatter' the apparent naturalness and solidity of the present, by suggesting that other ways of being are in fact possible.¹⁹ It is the acceptance of the idea of *progress* as an alternative to the concept of providence, a kind of covenant with the human future proclaimed by secular 'prophets', rather than the divine past, that makes commonplace this refusal of the guiding role of the past. For the idea of progress, reality has to be thought of as radically transformable, independent of any divine promise.

Thomas More's *Utopia* (1516) links the idea of a transformable social reality to a rational analysis of social structure, employing a series of social categories for the comparison of the mythical society of Utopia with contemporary Europe. Against a background of social and technological change, More provided a model for thinking about different possible societies, as against the entrenched divine order of feudal organisation.²⁰ Once the future appears amenable to being shaped through human effort alone in accordance with standards produced through critical reasoning, the idea of progress is made possible.

¹⁵ John Passmore, *The Perfectibility of Man* (Indianapolis: Liberty Fund, 2000), p. 307.

¹⁶ William and Jed Silverstein Scott-Green, "The Doctrine of the Messiah," in *The Blackwell Companion to Judaism*, ed. Jacob Neusner and Alan J. Avery-Peck (Oxford: Blackwell, 2000), pp. 256-7.

¹⁷ Shimon Shokek, *Kabbalah and the Art of Being* (London; New York: Routledge, 2001), p. 44.

¹⁸ Lawrence Vogel, "Jewish Philosophies after Heidegger," in *Taking Responsibility: Comparative Perspectives*, ed. Winston Davis (Charlottesville and London: University Press of Virginia, 2001), pp. 136-7.

¹⁹ Karl Mannheim, *Ideology and Utopia*, trans. Louis Wirth & Edward Shils (London: Routledge and Kegan Paul, 1936), p. 173.

²⁰ Wendell Bell, *Foundations of Futures Studies: Values, Objectivity and the Good Society*, 2 vols., vol. 2 (New Brunswick, NJ: Transaction, 2004), pp. 9-14.

A utopian literary tradition followed in the wake of More's book, which was complemented by emerging knowledge of the historical variety of human societies, resulting in a growing consciousness of the widely varying possible forms of human social existence. These influences meshed with the conviction that human beings were capable of radically changing their social conditions which accompanied the revolution in England and the execution of Charles I.

This sense of possibility deriving from concerted human action influenced the early social science tradition. Nonetheless, within this tradition there remains the conviction that although the future is an open one, dependent on a will to transform the present, there is one morally right direction in which human societies should develop, towards ever-greater harmony and general happiness. Thus the future is still framed from within an ethical standpoint, although the content of this standpoint remains to be decided. To fill out the ethical context for the transformation of the present, a properly scientific study of the invariant laws of human psychology and social change was called for. An inherent link was thought to exist between the discovery of the laws that governed human social action and development and the creation of the morally just future.

For the 17th and 18th century thinkers of progress, responsibility for creating this future would rest primarily with the elite who possessed specialist knowledge of human nature, and who would orient the evolution of human society in the correct direction, avoiding obstacles and counter-influences. This indicated that, although these thinkers saw human history as being governed by natural laws, they thought that knowledge of these laws provided human beings with the capacity for free action. Although history was a kind of 'social nature' which could be studied on the basis of similar assumptions to those used by the natural philosophers, its future was still open, dependent on will and decision. Although tendencies of development could be extrapolated from the study of the past and present, this knowledge freed humans to imagine new possible lines of development and act to realise them.

By the mid-18th century, thinkers such as Turgot and Condorcet had begun to view societies as natural phenomena which could be studied in the same way as any other.²¹ Human society was drawn into the neo-Platonic space of algebraic and geometric reasoning, and thereby into Newtonian space and time. At the same time, it began to become alienated from the eschatological time of Christian theology. Within this new spatio-temporal frame, the development of societies could be seen as a succession of states of increasing or decreasing perfection, leading towards a realisation of the potential for development that humans, considered as rational rather than inherently sinful beings, had within them. One of the key methodological innovations in the study of human nature involved a similar mathematical advance to that taken by the natural philosophers. A gradual algebraic simplification of social relationships according to the principles of the new science of probability made it possible to describe human behaviour in terms of general, mechanistic principles. Although individual human beings were considered capable of free choice, this choice was at the same time not random, but rational. Consequently, patterns of behaviour could be expected to recur in certain circumstances, as individuals chose to act in ways they considered reasonable.

Statistical and probabilistic reasoning about the aggregate behaviour of groups of people consequently became a central tenet of the new paradigm, and aided the search for the social equivalent of Newton's universal gravitation, an attractive force that held all societies together.²² Deducing an analogous principle from the discovery of laws of human behaviour would enable social change to be managed by those with the right kind of scientific knowledge. Again, the neo-Platonic worldview was affirmed: knowledge of the true order underlying the transient appearance of human society would enable experts to remove obstacles to the true expression of the progressive forces inherent within human nature.

²¹ Barbara Goodwin and Keith Taylor. *The Politics of Utopia: A Study in Theory and Practice*. London: Hutchinson, 1982, p. 146.

²² Barbara Goodwin, and Keith Taylor, *The Politics of Utopia: A Study in Theory and Practice* (London: Hutchinson, 1982), pp. 124-5.

The new scientific paradigm, with its emphasis on the role of the action of forces in producing change, had threatened to remove humans from centre stage in the universe. The emergence of theories of natural progress returned them to this position by suggesting that human experience had an inherent meaning and purpose derived from the potential of humans to adapt their circumstances to satisfy the requirements of their own rational nature.²³ Instead of being founded by divine covenant, society was represented by adherents of the natural law tradition in political thought, such as Locke and Helvétius, as being rooted in natural moral principles that had to be allowed to achieve full expression. Actual political arrangements were seen as mostly obstructing the full development of natural human moral predispositions.

Human beings were therefore seen as natural objects for scientific study, but insofar as they were rational and capable of mastering scientific methodology, were also seen as agents of deliberate change. Two sets of assumptions thus governed the new social science: firstly, the Newtonian understanding of the cosmos made possible an analysis of society as a 'social nature' with its own abstract, predictable future rooted in natural law. On this basis, the laws of human psychology and collective association could be discovered. Secondly, the assumption that human beings were essentially rational and therefore free contributed an ethical framework for the investigation. The future was not merely abstract, but open: it would be given shape by a process of transformation that would realise the potential for perfection present in human beings. But these two assumptions gave rise to a problem: which of these understandings of what it is to be human was the foundation for the other? Towards the end of the 18th century, Kant remarked that in order to be able to study history at all as a domain governed by laws of development, it was necessary to assume that 'all natural capacities of a creature are destined to evolve completely to their natural end'.²⁴ Kant saw this assumption as a moral requirement, and therefore a matter of faith in the destiny of humanity. It was not itself a proposition provable through the methods of scientific investigation, but gave an ethical meaning to the work of social science. There was thus an inherent tension within the habits of mind upon which the new social science was erected, between the scientific methodology that rested on the assumption that the behaviour of humans as 'social atoms' was governed by natural laws, and the ethical framework that represented humans as perfectible agents of willed change.

This tension gives rise to a problem that underlay many of the intellectual debates that drove the Enlightenment: how to determine what the end state of human development should be? If the future stood open to transformation through human action, then debate concerned which of the various possibilities were to be preferred, and on what basis. This meant that there was a further problem to be tackled, which derived from the need, described by Kant, for investigators to make assumptions about what would constitute a desirable future for society in order to understand its past and present. Without these assumptions, it would be impossible to understand the direction of social development. But with them, it seemed that the Newtonian assumptions of the nascent social science would be violated: the universe, as described in social science, would once again take on an inherent direction of movement. Social nature would have, in addition to an abstract future, a teleological one – but the affirmation of the purpose of human social development would rest solely on the investigator's profession of faith in a particular understanding of human perfection and of the developmental potential within human nature, rather than on natural laws that had been discovered through scientific work. This tension between the abstract future of social nature and the open future of human potential would be resolved by economics, which provided an intellectual articulation of a new form of future that was being consolidated within the societies of the 18th century: the empty future of economic activity.

²³ John Bagnell Bury, *The Idea of Progress: An Inquiry into Its Origin and Growth* (New York: Dover, 1932), p.p. 115-6.

²⁴ Immanuel Kant, "Idea for a Universal History from a Cosmopolitan Point of View," in *On History*, ed. Robert E. Anchor and Emil L. Fackenheim Lewis White Beck (Indianapolis: Bobbs-Merrill, 1963), First Thesis.

4. *Economic Behaviour and Economic Theory: Emptying the Future*

Many of the early social theorists were interested in the growing importance of trade and commerce under the absolutist political regimes that emerged within the 17th century in Europe. The capacity of nations to increase their wealth was clear evidence, they proposed, of the natural tendency of human societies to progress. This interest led to the development of forms of intellectual enquiry in the 18th century which focused exclusively on the phenomenon of trade, just at the time when new forms of economic activity were coming to the fore, and having wide-ranging effects on the institutional make-up of societies. The processes of institutional change that support the evolution of these forms reach a peak of intensity in the Industrial Revolution, fulfilling what Karl Polanyi calls the 'disembedding' of the economy from the rest of society.²⁵

At this point, the economy was increasingly defined by the theorists of what became known as classical economics as an autonomous realm operating alongside other social institutions, according to its own natural laws. Like nature had been for the natural philosophers, the economic realm was seen by economic theorists as especially amenable to mathematical description and simplification. Whereas social science had begun with the idea that progress was an ethical commitment, and could only be achieved through positive acts of transformation, economics opened up a different prospect. Via a thoroughgoing, statistically-based investigation of the laws of trade it was proposed that the mechanisms of wealth generation would be laid bare. As the body of economic theory developed, it was affirmed that all that would need to be done for wealth to be efficiently distributed to fulfil human needs would be to take a 'hands-off' approach to the economy. Instead of taking definite steps to advance towards a particular vision of the future, all that would need to be done would be to identify how economic processes worked, and then ensure that other social institutions did not interfere with them. Not only would this lead to progress, but thanks to the economists' concentration on the allocation of wealth, a quantitative measure of progress would be provided – the more efficient this allocation, the more progress would have been made. This meant that the tension within social science that we examined in the previous section could be eased: no difficult choice between alternative futures was necessary, as scientific investigation of the laws of economics would make the best course of action clear to all rational beings. Again, as in the worldview of natural philosophy and social science, using mathematical analysis to penetrate beneath a confusing world of appearance to a stark, crystalline, essential reality would enable the future to be understood.

The habits of mind that formed the assumptions of natural philosophy began to encompass economic phenomena with the work of Richard Cantillon (1680? – 1734), who developed a Newtonian theory of trade, in which the economic system was viewed as an interconnected whole of mechanically functioning parts, driven by the self-interested urge on the part of individuals to accumulate profit. This urge played the same fundamental role in the economic system as Newton's law of gravitation in that of nature as a whole.²⁶

Central to Cantillon's theory, and indeed to subsequent mainstream economics up to the present day, is the idea that individuals played the role in the economics system of the atoms in the universe of natural philosophy, imparting by their activity motion to the whole. Just as the natural philosophers had used the atomic model to support their methodological commitment to mathematical simplification, the political economists developed their theories of wealth on the basis of the role of individuals in production, exchange and consumption. Consequently, the economists' conception of human future-orientation proved crucial, as it served to describe the 'motion' of the individual atoms. In this way, the future as envisioned by economics was composed out of a multitude of fragments, individual futures made up of economic decisions driven by self-interest, which could be aggregated mathematically. This would allow economic predictions to be made, and, provided interference from other institutions (such as the

²⁵ Karl Polanyi, *Primitive, Archaic and Modern Economies* (Boston: Beacon Press, 1971), 'Aristotle Discovers the Economy', pp. 81-2.

²⁶ Robert B. Ekelund and Robert F. Hébert, *A History of Economic Theory and Method* (New York: McGraw-Hill, 1997), p. 65.

government) decreased, would enable individual economic agents to plan their futures rationally and with confidence.

In this light, the early economists argued that the process of exchange is motivated, in the first instance, by the need to secure one's life and the pleasures that allow one to enjoy that life, but is ultimately guided by the desire to maximise one's 'betterment'. What is meant by 'betterment' in this context is the accumulation of economic power, one's capacity to control one's present and future circumstances in an essentially antagonistic social world.

Writers inspired by Cantillon such as Adam Smith therefore saw the economic system as a general clash of individual interests, but one whose inherent tendency leads to the promotion of the common good. Individual self-interest promotes a general and continual increase in economic activity without producing huge concentrations of economic power.²⁷ The pursuit of profit could therefore be seen as a social duty or moral imperative at the same time as it was an expression of self-interest.²⁸ Looked at in the round, the aggregate motion of the individual social atoms leads to a harmonious whole, and so the best future will be produced through the unfettered functioning of natural law.

The social reality this body of theory was attempting to describe was one in which economic practices had, since the late Middle Ages, increasingly organised themselves around a new understanding of the future as *empty*. The emergence and consolidation of these practices had been slowed by conflicts with the practices of other institutions, such as the Church, which maintained quite different views of the future. Lending money at interest, for example, had been seen as sinful by Christians up until the medieval period, given that it involved the illicit sale of future time, which belonged to God alone. As we shall see, this conflict was eventually removed by theological innovations.

The empty future was not the same as the abstract future of Newtonian nature. An abstract future is calculable by means of extrapolation from past observances. Unlike the predestined future that is told through divination or the providential future of Christian belief it belongs to no-one as such. Rather, it describes a future of repetition, the continued functioning of an external mechanism – such as Newtonian nature or the economic system. An empty future, by contrast, is a homogeneous medium of measurement, one in which different future outcomes are made commensurable by means of something that makes them comparable, and which therefore makes a choice between them possible. Money acts as such a means of comparison between different commodities.²⁹ It also serves as a means for comparing futures. Among the emergent economic practices, specific uses of monetary comparison meant that the *exchange-value* of different futures can be estimated. This already assumes that the future in which these outcomes will happen is within the ownership of agents in the present as a future of pure possibility, without any content.

Specifically, these innovatory practices concern the production and use of surpluses. A 'long surplus' in the form of a stock of money can be opposed to a 'short surplus' in the form of more of a perishable commodity that one needs to consume to survive. Such a long surplus represents the power to obtain any number of different commodities at any time. It thus changes one's attitude to uncertainty and transience, as money capital frees its possessor from the constraints and risks that accompany the cycles of production which characterise barter and subsistence economies. For example, the possibilities increase for accumulating objects on the basis of values other than their immediate utility for survival. The satisfaction of less pressing desires, as opposed to urgent needs, becomes possible.

²⁷ Adam Smith, *The Wealth of Nations*, 2 vols., vol. 1 (London: J. M. Dent & Sons, 1975), p. 61-2.

²⁸ Cf. Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. Talcott Parsons (London: Routledge, 1994), pp. 54, 62.

²⁹ Georg Simmel, *The Philosophy of Money*, trans. Tom Bottomore and David Frisby (London: Routledge and Kegan Paul, 1982), p. 146.

Importantly, owning a monetary surplus enables credit for future trading ventures to be obtained, using existing stock as collateral. This was made possible by the theological legitimation of the practices of lending money and trading for profit. The merchant's vocation and the lending of money became seen as justifiable due to the power of trade in producing wealth, and thus in serving the common good, finally being praised by the likes of Thomas Aquinas.³⁰ To lend money at interest became seen as legitimate compensation paid to the creditor for her giving up for a specific duration of future time a quantity of hoarded exchange value, and with it, a portion of her economic power.

This legitimation of credit meant that money could be lent on the basis of expectations of future returns. This enabled the production of monetary surplus for the purpose of driving investment in the means of creating surpluses. In this way, the future is now no longer seen as one in which surplus production in the present gradually creates independence from the cycles of subsistence production. Instead, the future is created around new cyclical structures of production and investment, with the goal of investment being an ever-increasing return. Planning production is no longer aimed at maximising the potential for consumption, but at providing for a continual increase in the rate of profit or surplus value extracted from economic exchanges. The only measure for deciding whether the future turns out to be better than the present is thus mathematical. It is this innovation in how futures are created and traded that produces the conditions of possibility for commercial and then industrial capitalism. Practices of investment and credit change the relationship between production and consumption by constructing the future in a fashion similar to Newtonian science. The future of credit and investment is a quantitative scale used for estimating the size of a return based on extrapolations of risk and different patterns of investment, and stretches into the long term, a future which is empty but for these results of economic forecasting, which is always practised from the standpoint of particular interests in the present. The desirability of a particular future outcome can be measured by determining the costs and benefits of pursuing it relative to others. In this way, the value of a particular present future is determined solely on a quantitative basis: does it lead to a larger profit than the alternatives? If so, then it is a more rational course of action. In this way, the future as such becomes tradable: one future outcome is tradable for another, on the basis of its estimated returns.

The goal of accumulation through the increase of rates of profit is ultimately to secure economic power to enable control over one's own future. Success in amassing surplus or attracting investment in the present produces a corresponding increase in power to transform the future. The goal of transformation is therefore to ceaselessly augment the power to transform. Accompanying these economic practices is therefore a shift in the ownership of the future, away from the divine and towards humankind, which is correlated with its emptying: the only content for this future is a projected increase in the power to transform reality through further economic activity.

This new economic reality therefore sees agents working to create the future first by entirely quantifying it as an extension of regimes of exchange value, and then by using this emptied future as a resource for increasing economic power in the present. Economics supports these new practices by arguing for their rationality as ways of achieving progress. In doing so, it unites the empty future upon which individual economic transactions are premised with its own abstract future, the unfettered operation of the laws of trade. Economics takes the empty future, understood as a means of comparing qualitatively different future outcomes of economic transactions, and, using its theories of natural economic laws, applies it to the totality of economic activity in society. The processes that contribute to the maximisation of wealth are those which collectively ensure that profit extracted from economic transactions increases over time. In classical economics, it was assumed that economic laws placed natural limits on how much profit could be extracted from specific transactions. For example, it was held that certain costs made up the 'natural price' of a commodity, and that selling it at a level too far above this baseline

³⁰ Jacques Le Goff, *Time, Work and Culture in the Middle Ages*, trans. Arthur Goldhammer (London, Chicago: University of Chicago Press, 1980), p. 61.

would result in a lower level of profit overall due to other producers selling it for less. Adam Smith depicted this as a natural harmony within the market, acting mechanically like an 'invisible hand' to keep economic relationships stable. This assumption means that rationality is no longer viewed as the potential of human beings for taking individual and collective responsibility for their common, open future, but instead becomes a criterion for individual economic decisions based on estimates of relative gains of exchange value.

When classical economics shifted its methodology in the mid-19th century, creating what became known as neo-classical economics (the paradigm that remains dominant in economics departments to this day) two theoretical 'refinements' occurred. First, the use of linear methods of mathematical analysis of the variables that are held to define economic relationships, based on differential calculus, was extended and made more rigorous. Secondly, a further simplification of the psychological model of self-interest on which the 'mechanics' of economic analysis are based was carried out. According to the centrepiece of neoclassical theory, the concept of marginal utility, the fundamental motivation for human action, and thus the basic thrust of all future-orientation, is to maximize the level of gratification they can achieve within the limits of their resources. This conception of human psychology was characterised by Francis Edgeworth (1845-1926) as that of a pleasure machine, for whom the passage from past to future was a clockwork transition from one unit of pleasure-intensity to another.³¹ In other words, for neo-classical economics, using the empty future as a way of making decisions based on expected returns of profit was a fundamental law of human nature.

The role of economics, and the empty future, as a policy tool was affirmed by the hugely influential use in France of cost-benefit analysis by Jules Dupuit in the 1840s to determine the best ways to provide public goods such as roads and water.³² As economic theory was increasingly brought together with policy and business practice, the problem of decision that had afflicted the early social scientists' conception of progress began to be eased. All that needed to be done was to conduct a rigorous economic analysis of the different proposed policies, and the option that would produce the greatest return would be immediately clear. The ethical framework of choice was replaced with a fully Newtonian framework of mechanistic analysis, within which the optimal outcome would simply appear at the far end of a calculation.

As the empty future of economics began to establish itself as the sole standard of rational planning, the fragmentation of the future that was presaged by the profit-driven practices of commercial and industrial capitalism was made a social and political principle by economics. Instead of human decisions about the future being formed within an overall value-consensus concerning the providential or progressive destiny of the human world, the ownership of the future had passed into the hands of individuals through mechanisms of economic choice. The only embracing context for individual economic decisions now became the economic 'climate' as a whole, a set of predictions about the abstract future of the economic system contained within the occasional oracular pronouncements of economists and the politicians whom they advised.

5. Conclusion

The future envisaged through economics is therefore designated as colonisable by a huge multiplicity of singular economic agents (individuals, corporations, governments, etc.) on the basis of self-interest, against the background of an assumed collective claim of the present on the future. Although this emptying of the future also leads to its fragmentation, as the all-embracing temporal narratives of perfectibility, providence and progress are replaced with as many quests for profit as there are agents, the essentially Newtonian assumptions of economic theory lead to the conclusion that there is a natural tendency within the economic system towards a progressive harmonisation of interests, a state of equilibrium.

³¹ Routh, *The Origin of Economic Ideas* (London: Macmillan Press, 1975), pp. 241-2.

³² Ekelund and Hébert, *A History of Economic Theory and Method*, pp. 269-71.

The future becomes seen as a territory which must be exploited for the sake of releasing ever-greater power to transform reality. In this way, the future envisaged by economics is the most open of futures, but the assumptions of economic theory leave no room for the ethical context within which both neo-Platonism and the early social scientists framed their understanding of the open future. Instead of being open in their sense, and therefore a field of action that requires responsibility, it is empty, and up for grabs. Economics therefore mirrors the achievements of natural philosophy: where the natural philosophers implicitly separated nature from God, seeing in it only an abstract future of repetition, economists separate the economy from the social field as such, in which the early social scientists had still seen human freedom operating. Human freedom does not direct the economy – rather, the laws of utility maximisation that, for neoclassical economics, circumscribe human psychology, direct the economy. A continuing quest for the pristine essence beneath the confused appearance results, with economics, in the identification of human freedom with economic necessity.

Within this framework, the future is no longer seen as unpredictable, and as such, as requiring taming. From a future embedded in natural and social processes, we have passed on to a future that is entirely disembodied from these processes, and which serves instead as a means of calculation, estimation and trading. The futures of providence, perfectibility and progress could never be traded: there was no framework within which this could be done. However, as we have seen, elements of the habits of mind that support the quest for perfectibility and progress eventually make possible the emergence of new social practices for which futures trading is the basis of all social action.

6. References

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7. Appendix: The Three Themes – Perfectibility, Progress and Profit

