Jens Beckert and Richard Bronk

Fictional Expectations and Imagination in Economics

Introduction

This chapter demonstrates how economics can learn lessons and draw useful analogies from literature and literary theory. These lessons apply at two levels: they help illuminate the everyday behaviour and belief systems of economic agents, and they also have implications for the nature of economics as an academic discipline.[1]

We argue that, to understand behaviour and the formation of expectations in modern economies, it is necessary to examine the role of imagined states of the world in helping people construct and navigate the uncertain future. Modern capitalism is a quintessentially creative and imaginative system: it is driven as much by dreams, emotions, and dystopias as by calculation; it is structured by language and narratives; and it has novelty and radical uncertainty at its heart. This has implications at a meta level for the nature of economics: economists need to engage in metaphorical thinking – the imaginative transfer of concepts from one domain to another – to shine new light on the dynamism and innovation that are central to economic activity but poorly explained by current economic models. They must take seriously the role of imagined futures and other forms of fiction in guiding the expectations and behaviour of economic actors. Indeed, we argue for a new form of "narrative economics" and the use of analytical imagination to help "read" and "interpret" the stories, imagined futures, social frames, and calculative practices that structure economic decision-making.

Suggesting a central role for fiction and imagination jars with the conception that most economists have of their discipline as the most precise and empirically grounded of the social sciences: they focus on using mathematical models to analyse and predict the market behaviour of economic agents. These models are frequently sophisticated and incorporate vast data sets of relevant factors. But at their core is a simple assumption that economic actors rationally optimise their utility within given constraints in the light of "rational expectations" (or informed predictions of the future) with the result that economic outcomes tend to a predictable equilibrium. Since markets are fiercely competitive, economists assume that anyone behaving irrationally would tend to lose out to those who internalise the correct model of how the economy works and have a firm grasp of objective probability functions. From their perspective, it would be retrograde to assume that market participants in practice *imagine* the future and attempt to convince others of their fictions. Why would it make sense to replace (or complement) the dominant "rational expectations" hypothesis with one of "fictional expectations"?[2]

Our theory of fictional expectations is founded on two pillars: first, empirical observation of actual economic decision-making; and secondly, epistemological theory about the problems of knowledge facing economic actors, especially in relation to the future.

There is now a growing body of empirical studies demonstrating the large role played by narratives in structuring behaviour and guiding expectations in the economy. Robert Boyer has detailed how successive phases of recent capitalist history characterised by increasing levels of uncertainty have been structured around a series of beguiling "grand narratives" (or overarching stories) – such as "*Japan number one*, the *new economy*, and the omniscience of financial markets" – that each serve for a time to coordinate investment and increase confidence.[3] David Tuckett has likewise shown that stock-market investors rely on investment *stories* to give them the necessary conviction to act.[4] At a policy level, Douglas Holmes has demonstrated how far central banks rely on rhetoric and communication to achieve the goals of policy: a central bank's public statements seek to persuade market participants to internalise policy goals as their own expectations. So, for example, when Mario Draghi said in 2012 that the European Central Bank would do "whatever it takes" to rescue the euro, these three words did more than anything else to calm market expectations and solve the euro crisis.[5] At the level of consumption, we are frequently influenced by imaginaries of future pleasure that we project onto the next generation of new goods, under the influence of a constant stream of marketing images and narratives.[6]

To understand why narratives and imagined futures seem to have such a significant effect in structuring expectations and behaviour, we need to understand the problems that economic actors face in knowing enough to make the sort of rational calculations that economic models assume are possible. In all walks of life, human beings face barriers to knowledge and struggle to make sense of multi-faceted reality. But economic actors face an additional problem: a large part of the economic activity typical of modern capitalism is geared to the future. People save for a retirement that may never happen; they invest in new products or processes that they expect will deliver useful service in the future; or they buy assets in the hope they will rise in value. But, crucially, the future envisaged is not – as is commonly assumed by economists – a straightforward statistical shadow of the past: it is neither predictable according to well-understood laws of motion like the future of planetary orbits; nor, for the most part, is it predictable in objective probability terms (like the incidence of road deaths) on the basis of past data and observed factors. To use Frank Knight's terminology, the future is often a matter of radical *uncertainty* rather than calculable *risk*.[7]

There are several reasons for this: first, global markets and financial networks have many of the classic properties of complex adaptive systems – with non-linear reactions and threshold effects – so that small changes in initial conditions can snowball into radically novel outcomes.[8] Second, market capitalism is frequently subject to counter-movements of social and political protest and the unpredictable policy changes these imply.[9] Most importantly of all, the economic future is to a significant extent the contingent creation of a dynamic series of collective and individual attempts to *reimagine* and refashion the economy. In other words, the economic future is not "out there" waiting to be discovered; rather, as James Buchanan and Viktor Vanberg put it, it is unknowable in advance because it has "yet to be created" by how we and others imagine, choose, and *will* it to be.[10]

This has enormous implications for the nature of economic behaviour: first, economic actors frequently become disoriented and anxious when faced with what Zygmunt Bauman calls "liquid modernity" and the growing realisation that uncertainty is "*the only* certainty"; and, as David Tuckett argues, they consequently rely on "conviction narratives" to "manage anticipations of gain and loss" and "support action emotionally."[11] Second, it can no longer be assumed that market prices reflect the best available facts about the future, nor that expectations are guided largely by calculations of objective probability functions. Instead, as George Shackle put it: "Valuation is expectation and expectation is imagination."[12] Economic actors have no choice but to imagine the unknowable future; and the contingent imaginaries (and attendant emotional states) that structure their expectations and motivate action help determine market prices and construct the future. Imagined futures or fictional expectations matter to economic decision-making as much as data about past regularities.

Once this insight is acknowledged, it puts a whole new complexion on the nature of economics as a discipline: economic models themselves can be seen as simplifying fictions designed to encapsulate causal mechanisms and help us spot emerging patterns and diagnose persistent tendencies; and, in many cases, it is these modelling fictions that structure market expectations and behaviour and thereby influence (or "perform") the future. At the same time, economists must learn to interpret the particular fictions (whether in the form of models or narratives) that motivate economic actors in different situations if they wish to explain outcomes or have any hope of predicting uncertain futures.

Uncertainty and Imagination in Modern Capitalism

To underine the importance of fictional expectations in the economy, it is worth explaining further why uncertainty is such a central feature of modern capitalism and how the human capacity to imagine new futures and create different types of fiction relates to that uncertainty.

Joseph Schumpeter first pointed out that the competition that counts in markets comes "from the new commodity, the new technology … the new type of organization." The consequent "process of industrial mutation," he argued, "incessantly revolutionizes the economic structure *from within*"; and this "process of Creative Destruction is the essential fact about capitalism."[13] In other words, the economic system is itself a source of constant novelty, which disrupts the predictable links between past and future and makes the future inherently uncertain. It is the capacity of entrepreneurs to imagine new ways of doing business, new products, or simply new symbolic significance for existing items that is responsible both for the dynamism of capitalist economies and for the radical uncertainty at their heart. The economist George Shackle noted that "our own original ungoverned novelties of imagination" are responisble for "injecting, in some respect *ex nihilo*, the unforeknowable arrangement of elements."[14] It is this imaginative capacity to invent new ideas and novel fictions (or counterfactuals) – and to react creatively to the innovations of others – that makes it impossible for economic agents to assume that the future will closely resemble the past or behave in accordance with existing models. The limitless ability of the human mind to make new connections across synapses in the brain (and between existing ideas) and then, as William Wordsworth put it, to "build up greatest things / From least suggestions" is sufficient to ensure that our socio-economic future is indeterminate and unpredictable.[15]

If the human imagination is deeply "subversive of established order" and one of the main causes of uncertainty, it is also our principal tool for navigating uncertain futures.[16] It facilitates choice by allowing us to play with different scenarios and visualise a variety of counterfactuals and possible options. It can also furnish us with the confidence and motivation to act *despite* uncertainty by providing us with working fictions detailing how the future might unfold – fictions that go well beyond existing information. Actors act *as-if* the future will unfold in a certain way, even though they cannot know. In this sense, fictional expectations take the role of "placeholders", compensating for the impossibility of knowing for sure. As the essayist, William Hazlitt, pointed out, even the basic utilitarian notion central to economics that individuals pursue their own self-interest should be recognised as essentially an imaginative enterprise: because the future is "undetermined" and even our identities and preferences change over time, we must imagine the interest that our imagined future selves would feel for an imagined future, and it is this imaginary that excites in us a current "emotion of interest" sufficient to motivate us to act.[17] This link between imaginaries and emotions is crucial. As J.S. Mill noted, "the imaginative emotion which an idea when vividly conceived excites in us, is not an illusion but a fact, as real as any of the other qualities of objects."[18]

Decisions made in conditions of economic uncertainty are then based on fictional expectations – on contingent imaginaries and interpretations of what the future may hold. But these fictions and interpretations are not solely individually formed or internalised. Indeed, most fictions are strongly influenced by the social norms and institutional settings in which they operate. At key points, narrative entrepreneurs and opinion formers seek to challenge prevailing orthodoxies, refashion the social context in which we form expectations, and make their images of the future count; but, to be socially influential, these new images must in turn become shared – what Kenneth Boulding calls "public images" [19] that structure beliefs and action beyond an individual.

The socially constructed nature of expectations may reduce the uncertainty that individuals face by constraining the likely range of their fellow citizens' reactions to novel situations. But, crucially, this can have knock-on effects that actually increase uncertainty in the economic system: since interpretations of the uncertain future are always prone to error, the social formation of fictional expectations and the prevalence of widely shared narratives (for example, homogenous scripts of what constitutes best practice) can lead to herd behaviour and the sort of highly correlated errors that can destabilise markets and lead to disruptive and indeterminate outcomes.[20]

Fictional expectations are not, of course, formed without recourse to rational calculation. Indeed, as William Hazlitt argued, we need a "reasoning imagination" that adapts our imaginaries to emerging patterns and evidence of hard constraints.[21] Just because the future is uncertain does not mean that we have no clue about the future. Economic activity is largely structured by the "often fraught co-production of expectations" by imagination, information, and calculative devices. Calculative instruments and models act as instruments of – and props to – the economic imagination.[22]

Four Types of Working Fiction

Before we explore some of the resemblances between fictional expectations and literary fictions, and outline a new form of narrative economics, it is important to distinguish between fiction and fantasy and to uncover the layers of fiction at work in economic decision-making.

The prospectuses and narratives peddled by the "projectors" in eighteenth-century Europe were often little different from the fantasies found in novels, except they were designed to persuade the gullible to invest.[23] Today, for the most part, the fictional expectations of market participants are not wilful fantasies designed to deceive themselves or others; instead, they include a story of what will constitute the actors' own best interests, in which (as Martin Giraudeau argues) imaginative foresight is "under strict knowledge oversight."[24] Economic actors create fictions about the future that are heavily laced with, and structured by, the output of analytical procedures and models designed to diagnose emerging patterns and analyse relevant information. Their expectations nevertheless remain fictional – the product of imagination – to the extent that it is impossible to overcome barriers to knowledge. In particular, statements regarding uncertain futures (and how to reach or avoid such futures) necessarily entail assumptions that cannot be based solely on observable truths. Intentionally rational decisions must be based on how we imagine the future – on the kind of "*as-if*" thinking central to fictional texts.

The fictional element envisaged here is complementary to – and more radical than – the constructive fictions that Hans Vaihinger and others argue are necessarily a feature of our attempts to make sense of brute reality.[25] We all act *as if* the world-as-it-appears-to-us when constructed according to contingent categories and linguistic frames our minds supply resembles the world-as-it-really-is. As Wordsworth put it: "In weakness we create distinctions, then / Believe that all our puny boundaries are things / Which we perceive and not which we have made."[26] In other words, all rational analysis – indeed all perception – is to some extent fictional in the sense of being a necessarily contingent construction of reality-as-it-appears-to-us. The English Romantic poets were among the first to recognise the significance of this. S.T. Coleridge saw the mind as a "lantern" directing our attention to some aspects of reality; while for Wordsworth, the mind is a "creator and receiver both" and half-creates what we perceive.[27] As M.H. Abrams wrote in *The Mirror and the Lamp*, facts (as the derivation of the word from the Latin *facta* implies) came to be seen as "things made as much as things found, and made in part by the analogies through which we look at the world as through a lens."[28]

To this primary element of *constructive fiction* in all human understanding of the world, we can add a second type of working fiction found in any *social* interaction. When individuals try to make sense of societies or economies, they are interpreting a social reality that is *pre-interpreted* by the actors enacting it. This means that citizens and social scientists alike must interpret the fictional constructions that others place on their own predicament because these fictions help structure social reality by influencing perceptions and behaviour. All social analysis (whether practical or academic) is then a sort of *reflexive fiction* – a simplifying (often narrative-based) construction and interpretation of the fictions guiding the behaviour of others.

In addition to these constructive and reflexive forms of working fiction used by human beings in all societies, there is a third found in capitalist economies characterised by widespread policy and product innovation and the emergence of novel outcomes in complex systems. When dealing with indeterminate and uncertain futures, our everyday expectations are fictional in a more radical sense: it is not only that – epistemologically speaking – we are always deprived of unmediated access both to the world-as-it-really-is and to the contingent and socially performative interpretations of others; it is also that in an ontological sense there is no socio-economic future-as-it-really-*will*-be "out there" ahead of its creation by the interdependent decisions, choices, and innovations as yet unmade. Our *fictional expectations* can have no anchor in – or uniquely rational relation to – underlying future reality for the simple reason that the future does not yet exist.

There is a fourth and final working fiction relevant to economics: economists create models to represent the workings of the economy. As Deirdre McCloskey argues, these models are fictions comparable to literary texts, and – as Mary Morgan points out – stories are central to their construction and use.[29] Game theory, for example, is heavily grounded in a story of the prisoners' dilemma that both structures the model and defines its relevance to analysis. Many models embed metaphors deep in their mathematical structure – those of standard economics drawing heavily on analogies from nineteenth-century physics and its structuring assumptions of a system-tendency to equilibrium.[30] General equilibrium theory, in particular, is a metaphorical system of great imaginative as well as mathematical power – where the economy as a whole is modelled as a closed system tending to a general equilibrium, thanks to complete futures markets and complete information. As Kurt Heinzelman argues, the economist is "a poet, a maker of fictions" [31]. These fictions are hopefully useful as diagnostic tools for teasing out such systematic tendencies as do exist in economies, but they can also distort analysis as a result of the simplifying assumptions and misleading metaphors embedded within them. What is more, as Michael Power points out, the "fictional ideas" dreamt up in academic departments often end up constituting the "rationalities" and regulating the practices of financial markets. Fiction blends seamlessly into social reality – by structuring everyday beliefs, norms, and practices.[32]

Fictional Expectations and Narrative

The act of naming the expectations of economic actors "fictional" draws attention to their literary features, and implies that lessons can be learned from literary theory about the nature and function of the imaginaries involved. In particular, fictional expectations generally adopt a narrative form that helps make sense of the world and generates the required conviction and social legitimacy for action.[33] Such narratives combine due-diligence assessments of known constraints and causal mechanisms with imaginaries of how the future might look that go well beyond observable facts. They may take the form of "new era" stories, promised fortunes, or dystopias that must be avoided. They may be influential in their own right, or become embedded in the assumptions of algorithms or other calculative technologies. As Harro van Lente and Arie Rip demonstrate in empirical studies of innovation processes, narratives assign roles to economic actors and technological objects and develop a "plot" – a storyline of how an imagined future may unfold.[34] Such stories motivate by delineating an emotionally charged vision of the future. They provide a road map that helps counter anxiety in the face of uncertainty by simulating possible outcomes and making them feel tangible. In short, narratives provide a logic of action and populate the present with imagined futures that seem worth investing in. Aptly, David Tuckett speaks of “conviction narratives.”[35]

One of the main reasons that fictional expectations adopt a narrative form is to ensure that an imagined future can be conveyed to others. In so doing, they ape literary texts by following social conventions of language and narrative structure but also by occasionally departing from these conventions in original and enlightening ways, thereby casting a new and unexpected light on current reality and economic possibilities. For example, the fictional expectations of economic actors may use surprising metaphors to illuminate novel possibilities or express abstract ideas, and they often experiment with different counterfactual images of reality. Whenever fictional expectations are promulgated to others, their originators – like the authors of literary texts – also rely on various rhetorical devices such as plot consistency and verisimilitude to render their imaginaries credible and secure the authority needed to convince their audience.

In a further parallel with the concerns of literary theory, there is often a significant gap between the meaning of an economic story intended by its author and that read into it by other actors. The fictions created by (and motivating) any one actor become – in the act of being told to others – open to re-interpretation according to what the literary theorist Jonathan Culler calls the “horizon of expectations” of the reader.[36] This essential process of reading and interpreting the narratives and expectations of others (the better to know how to act) is partly a creative act of imaginative empathy – and, as such, is itself a source of indeterminacy in the economy. Social and linguistic context play an important but not necessarily deterministic role in structuring interpretations.

The fictional expectations motivating *individual* behaviour are, of course, themselves partially dependent on *social* narratives and the social context of institutions, networks, and power structures. The stories we tell and the expectations we have are influenced by key opinion formers, as well as the grand narratives and shared calculative devices that structure the field of expectations. The formation of expectations in the economy is – like the writing of literature – a combination of individual creative thinking and social construction. It is impossible to understand the expectations of particular economic actors or the credibility of their narratives without considering the conceptual and linguistic context in which they are formed, and without being alive to their resonance with the dominant social narratives and economic structures of the day. So, for example, the fictional expectations of most of those operating in derivative markets ahead of the financial crisis of 2008 were inextricably bound up with what Michael Power has called the "grand narrative of risk management" and a series of related risk practices, models, and manuals that ensured a widespread and ultimately fatal confusion between radical uncertainty and forms of risk amenable to objective probabilities.[37] As Elena Esposito argues, these financial models were – like all fictions – "extremely controlled constructions"; but since they were not accurate representations of future reality, they ended up "reproducing" the very uncertainty they claimed to control.[38]

Performative Fictions and Power

Fictional expectations and the stories, mathematical models, and calculative devices embedded in them matter to economic outcomes (and to the discipline of economics) because they structure beliefs and help actors decide how to act *despite* the uncertainty they face. When widely shared, economic stories and models help coordinate the actions of multiple actors. Indeed, expectations can be said to have the sort of "performative" effects in markets that Donald MacKenzie noted in relation to the models derived from finance theory.[39] They tend to structure the future at least partially in their own image or – in the case of dystopias – in sharp reaction against the vision implied. And, since economic narratives and theories (like finance models) tend – if internalised by sufficient numbers – to influence outcomes, they inevitably become instruments of political or market power. The future is shaped by political battles to establish the dominance of particular narratives.

A straightforward economic example of these battles is the use by central banks of "forward guidance" to cajole expectations in the desired direction. As Douglas Holmes puts it, communication has become for central banks the "decisive means to achieve" the goals of policy; or, in the words of Ben Bernanke, the former governor of the US Federal Reserve, "monetary policy is 98 percent talk and only two percent action."[40] The direction of capitalist economies is increasingly the outcome of a struggle between different state and market actors to establish their narratives and visions of the future as the most credible.

One performative effect of economic narratives and models is more indirect than this simple notion of steering the expectations of others implies, namely that they influence how other actors frame evidence, construct data, and define their own interests. As Michel Foucault argued in his analysis of the relationship between knowledge and power, power depends on the "production of truth," and knowledge is partly a product of contingent power relations. Indeed, power – together with the discourses and related practices associated with it – "produces reality; it produces domains of objects and rituals of truth."[41]

Jenny Andersson gives a topical example of this in an analysis of the Arctic as a political and economic realm. Rival claims over the region are partly established with the help of predictive technologies that, through a "highly selective *sorting* of available images of the future," seek to establish a dominant narrative about the future that suits particular interests. Yet crucially, since "future opportunities do not by definition yet exist," the interests that the different actors pursue are partly defined by a "repertoire of future-making," ranging from quantitative forecasts to "highly narrative genres of nation branding" and images of pristine wilderness or natural resources under threat.[42] Political and economic power belongs to those who make their narratives, imaginaries, and models count as those that will frame evidence, define interests, and structure behaviour.

Narrative Economics and Analytical Imagination

Empirical evidence of the role played by narratives in structuring expectations and coordinating behaviour – together with theoretical and psychological understanding of the importance of narratives in enabling people to make sense of their predicament and have the confidence to act *despite* uncertainty – has led to high-profile calls for the establishment of a new form of "narrative economics." For example, in his book, *Narrative Economics*, the Nobel-Prize-winning economist, Robert Shiller, takes seriously the role of narratives in explaining key inflection points in the economy and examines the usefulness of epidemiology models in capturing the *contagion* dynamics underlying the diffusion of influential stories.[43] The ex-Governor of the Bank of England, Mervyn King, agrees that narratives “play a big part in decisions taken under conditions of radical uncertainty” and argues that sudden “narrative revisions” underlie many of the abrupt changes in perceptions of the future that cause market and political instability.[44]

If such narrative economics is to reach its full potential, though, its methods of research need to be improved by better analytical techniques for uncovering how economic narratives, models, and shared calculative devices are successfully transmitted between individuals and come to structure market expectations. For this, a prime source of insight is literature and literary theory – in conjunction with the methods of economic sociology, anthropology, political economy, economic history, and science and technology studies.

In particular, economists should engage in more *discourse analysis* – close reading of the contingent narratives and models structuring fictional expectations. This may involve deconstruction of the hidden ideologies, social power structures, rhetorical devices, and linguistic frames determining both the meaning and ease of transmission of narratives or models for the actors whose expectations they guide. As Charles Taylor and others have argued, social scientists can only fully explain patterns of behaviour if they read and carefully interpret the significance and meanings that discourse and actions have for the actors concerned. Such a reading involves grasping the relevant nexus of culture, language, and practice – the “web of intersubjective meanings” – and entering into the actors’ way of life “if only in imagination.”[45] In the study of economic history, too, an investigation of the narratives and imaginaries that people have used and projected to give themselves and others the necessary conviction to act provides a fascinating lens to explain the course of historical events.[46]

Economic actors, economists, and economic historians alike must interpret a pre-interpreted world – in particular, the contingent ways in which various actors visualise and imagine uncertain futures. This puts a premium on what co-founder of the London School of Economics, Beatrice Webb, called *analytical imagination*: the ability to project yourself into the specific mindset of others and understand how they see the world. As F. R. Leavis pointed out, Webb believed that such analytical imagination – or intellectual sympathy with those different from ourselves – is best acquired by engaging in the study of literarature, which can consequently be considered highly "relevant to the essential qualifications" of social scientists.[47]

Economists also need a firmer grasp of how far their own discipline is structured by fictions and language. For example, as McCloskey argues, economists should acknowledge the "metaphorical saturation of economic theories" and the extent to which metaphors (for example, those derived from physics or games) unconsciously structure and distort the assumptions made, while determining the mathematical logic of models and framing the way data is collected.[48] Such understanding of the role of metaphor may then allow for open-minded experimentation with different structuring metaphors and fictional assumptions to yield complementary insights and alternative perspectives on economic conditions and behaviour.[49]

Finally, the prevalence of radical uncertainty in capitalist economies underscores the need for economic actors and the social scientists studying them to treat their expectations, interpretations, and explanations as provisional. In other words, they must learn to combine the conviction necessary for action or analysis with what the poet John Keats calls "*negative capability,"* the capacity to live with "uncertainties, mysteries, doubts, without any irritable reaching after fact and reason."[50] We can only hope to interpret events, spot emerging patterns, and create new solutions if we are imaginatively receptive to new pointers and flexible in the fictions we use to make sense of the world and construct a better future.

Notes

[1] For the key distinction between economic behaviour and the discipline of economics, and the relevance of literature and literary studies to understanding both these "object" and "meta" levels, see Richard Bronk, *The Romantic Economist: Imagination in Economics* (Cambridge: Cambridge University Press, 2009); and Doris Pichler, "The Inter- and Transdisciplinary Potential of Literary Studies: Law, Economics & Literature – Reflections on a Possible Liaison," in *Literaturwissenschaft heute: Gegenstand, Positionen, Relevanz*, edited by Susanne Knaller and Doris Pichler (Gottingen: V & R Unipress, 2013), 232.

[2] For a canonical expression of the "rational expectations hypothesis" central to standard economics, see John F. Muth, "Rational Expectations and the Theory of Price Movements," *Econometrica,* 29.3 (1961), 315-35; and for the theory of "fictional expectations," see Jens Beckert, *Imagined Futures: Fictional Expectations and Capitalist Dynamics* (Cambridge, MA: Harvard University Press, 2016).
[3] Robert Boyer, "Expectations, Narratives, and Socio-Economic Regimes," in *Uncertain Futures: Imaginaries, Narratives, and Calculation in the Economy*, edited by Jens Beckert and Richard Bronk (Oxford: Oxford University Press, 2018), 41.
[4] David Tuckett, *Minding the Markets: An Emotional Finance View of Financial Instability* (London: Palgrave Macmillan, 2011).
[5] Douglas Holmes, *Economy of Words: Communicative Imperatives in Central Banks* (Chicago: University of Chicago Press, 2014).
[6] See Colin Campbell, *The Romantic Ethic and the Spirit of Capitalism* (Oxford: Blackwell, 1987).
[7] Frank H. Knight, *Risk, Uncertainty, and Profit* (Boston: Houghton Mifflin, 1921).
[8] See W. Brian Arthur, *Complexity and the Economy* (New York: Oxford University Press, 2015).
[9] See Karl Polanyi, *The Great Transformation* (Boston: Beacon Press, 1957).
[10] James M. Buchanan and Viktor J. Vanberg, "The Market as Creative Process," *Economics and Philosophy* 7.2 (1991), 167–186.
[11] Zygmunt Bauman, *Liquid Modernity*, second edition (Cambridge: Polity, 2012), viii; and David Tuckett, "Conviction Narrative Theory and Understanding Decision-Making in Economics and Finance," in *Uncertain Futures*, 74.
[12] George Shackle, *Epistemics and Economics: A Critique of Economic Doctrines* (New Brunswick: Transaction Publishers, 1992), 8.
[13] Joseph Schumpeter, *Capitalism, Socialism and Democracy* (London: Routledge, 1992), 83–84.
[14] Shackle, George, *Imagination and the Nature of Choice* (Edinburgh: Edinburgh University Press, 1979), 52–53.
[15] To understand the nature and power of the human imagination, there is no better source than the writings of the Romantic poets and philosophers. The quotation here is from William Wordsworth, *The Prelude* (1805), Book XIII, lines 98-9, edited by E. de Selincourt (Oxford: Oxford University Press, 1960), 231.
[16] Bronk, *Romantic Economist,* 201.
[17] William Hazlitt, *An Essay on the Principles of Human Action* (1805), reprinted in *The Selected Writings of William Hazlitt, vol. 1*, edited by Duncan Wu (London: Pickering & Chatto, 1998).
[18] John Stuart Mill, *Autobiography* (London: Penguin 1989), 123.
[19] Kenneth E. Boulding, *The Image: Knowledge in Life and Society* (Ann Arbor: University of Michigan Press, 1961).
[20] See Richard Bronk and Wade Jacoby, "Uncertainty and the Dangers of Monocultures in Regulation, Analysis and Practice," MPIfG Discussion Paper, 16/6 (Cologne: Max Planck Institute for the Study of Societies, 2016).
[21] Hazlitt, *Principles of Human Action,* 19, 21.
[22] See Jens Beckert and Richard Bronk, "Introduction to *Uncertain Futures*," in *Uncertain Futures*, 4, 10, 13-15.

[23] See Martin Giraudeau, "Performing Physiocracy: Pierre Samuel Du Pont de Nemours and the Limits of Political Engineering," *Journal of Cultural Economy* 3.2 (2010), 225–242; and Valerie Hamilton and Martin Parker, *Daniel Defoe and the Bank of England: The Dark Arts of Projectors* (Winchester: Zero Books, 2016).
[24] Martin Giraudeau, "Processing the Future: Venture Project Evaluation at American Research and Development Corporation (1946–73)," in *Uncertain Futures*, 275.
[25] Hans Vaihinger, *The Philosophy of "As-If": A System of the Theoretical, Practical and Religious Fictions of Mankind* (London: Routledge & Kegan Paul, 1924).
[26] William Wordsworth, "Fragment," dated by E. de Selincourt to 1798–1800, reproduced in Bronk, *Romantic Economist*, 285.
[27] Wordsworth, *Prelude*, 27; and Samuel Taylor Coleridge, *Table Talk*, 21 September 1830, reprinted in "The Oxford Authors" *Samuel Taylor Coleridge*," edited by H.J. Jackson (Oxford: Oxford University Press, 1985), 596.
[28] M.H. Abrams, *The Mirror and the Lamp: Romantic Theory and the Critical Tradition*, (Oxford: Oxford University Press, 1953), 31.
[29] Deirdre N. McCloskey, *The Rhetoric of Economics*, second edition (Madison: University of Wisconsin Press, 1998); and Mary S. Morgan, "Models, Stories and the Economic World," in *Fact and Fiction in Economics: Models, Realism and Social Construction*, edited by Uskali Mäki (Cambridge: Cambridge University Press, 2002).
[30] See Philip Mirowski, *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics,* (Cambridge: Cambridge University Press, 1989).
[31] Kurt Heinzelman, *The Economics of the Imagination* (Boston: University of Massachusetts Press, 1980), 50.
[32] Michael Power, *Organized Uncertainty* (Oxford: Oxford University Press, 2007), 183–184.
[33] See Beckert, *Imagined Futures*, 61-94.
[34] Harro van Lente and Arie Rip, "Expectations in Technological Developments: An Example of Prospective Structures to Be Filled in by Agency," in *Getting New Technologies Together: Studies in Making Sociotechnical Order*, edited by Cornelis Disco and Barend van der Meulen (Berlin: de Gruyter, 1998), 203-29.
[35] David Tuckett, "Conviction Narrative Theory and Understanding Decision-Making in Economics and Finance," in *Uncertain Futures*, 62-82.
[36] Jonathan Culler, *Literary Theory: A Very Short Introduction* (Oxford: Oxford University Press, 1997), 64.
[37] Power, *Organized Uncertainty*, viii.
[38] Elena Esposito, "Predicted Uncertainty: Volatility Calculus and the Indeterminacy of the Future," in *Uncertain Futures*, 228, 233.
[39] Donald Mackenzie, *An Engine, Not a Camera: How Financial Models Shape Markets* (Cambridge, MA: MIT Press, 2006).
[40] Douglas R. Holmes, "A Tractable Future: Central Banks in Conversation with Their Publics," in *Uncertain Futures*, 178. Ben Bernanke, "Inaugurating a New Blog," 30 March 2015, https://www.brookings.edu/blog/ben-bernanke/2015/03/30/inaugurating-a-new-blog/.
[41] Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings 1972-1977* (London: Harvester Press, 1980), 93; and *Discipline and Punish: The Birth of the Prison* (London: Allen Lane, 1977), 194.

[42] Jenny Andersson, “Arctic Futures: Expectations, Interests, Claims, and the Making of Arctic Territory,” in *Uncertain Futures*, 85-86.
[43] Robert J. Shiller, *Narrative Economics: How Stories Go Viral and Drive Major Economic Events* (Princeton: Princeton University Press, 2019).
[44] Mervyn King, *The End of Alchemy: Money, Banking and the Future of the Global Economy* (London: Abacus, 2017), 136, 332.
[45] Charles Taylor, “Interpretation and the Sciences of Man,” *Review of Metaphysics* 25 (1971), reproduced in *Readings in the Philosophy of Social Sciences*, edited by Michael Martin and Lee C. McIntyre (Cambridge. MA: MIT Press, 1994), 181-207.
[46] See Jonathan Levy, “Capital as Process and the History of Capitalism,” *Business History Review,* 91.3 (2017), 483-510.
[47] Beatrice Webb, *My Apprenticeship* (1883), extracts quoted and discussed in F. R. Leavis, “Introduction,” *Mill on Bentham and Coleridge* (London: Chatto & Windus, 1958), 24-26. See also the American pragmatist George Herbert Mead and his notion of “taking the role of the other”: George Herbert Mead: *Mind, Self and Society. From the Standpoint of a Social Behaviourist* (Chicago: University of Chicago Press, 1934).
[48] McCloskey, *Rhetoric of Economics,* 40.
[49] See Bronk, *Romantic Economist,* 4-5, 22-25, 273-276.
[50] John Keats, “Letter to George and Tom Keats,” 21 December 1817, extract reprinted in *Romanticism: An Anthology*, edited by Duncan Wu (Oxford: Blackwell, 1998), 1019.

DOI: https://doi.org/10.1017/9781009026550

Online access to chapter on Cambridge Core at:
DOI: https://doi.org/10.1017/9781009026550.021