Uncertainty, narrative economics, and the need for a diversity of modelling approaches

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Understanding uncertainty in economics

Distinguish ‘uncertainty’ from calculable ‘risk’ (Knight, 1921)
Uncertainty: ‘The outstanding fact is the extreme precariousness of … knowledge’ (Keynes, 1936); the problem of knowledge (Hayek, 1948)

Distinguish shortcomings of knowing agents, models or institutions (bounded rationality, information asymmetries and framing biases) from ontological aspects of uncertainty:
• multifaceted nature of reality
• increasing returns and threshold effects
• innovation and novelty causing ontological indeterminacy

Ontological indeterminacy ‘symmetrical ignorance’ (Skidelsky, 2009) and ‘fundamental uncertainty’ (Dequech, 2001):
• ‘What does not yet exist cannot now be known’ (Shackle, 1972)

The future is not ‘statistical shadow of past’ (Davidson, 1996) but rather unknowable until critical choices and creative inventions made
More or less tractable knowledge problems

1. Information asymmetries can be overcome with greater transparency

2. Inability to make precise predictions in complex systems characterised by threshold effects and increasing returns can be offset by better use of simulations of impact of changes to key parameters

3. Impossibility of unmediated access to multifaceted reality – the necessity for interpretation and folly of naïve empiricism – implies need to understand structuring role of models, conceptual grids etc

Diversity of modelling approaches helps overcome contingent biases in interpretation and framing of problems (Bronk, 2009)
Innovation, indeterminacy and non-computability

Core link between uncertainty and innovation spelt out by Shackle (1979): ‘novelties of imagination … injecting, in some respect ex nihilo, the unforeknowable arrangement of elements’

Novelty and imagining new options break previously stable regularities and make future partially undefinable and non-ergodic

First-order uncertainty implied by innovation compounded by second-order creative reactions of others (Bronk, 2011)

Schumpeter (1943): competition that counts comes from new products, technologies etc ‘process of industrial mutation … incessantly revolutionizes the economic structure from within’ – an endogenous process of ‘Creative Destruction’

Markose (2005): ‘competitive co-evolution’: ‘arms race of product innovation’: cf. viruses with ‘strategically induced’ mutation rates

Market is a ‘creative process’ (Buchanan & Vanberg, 1991) – an indeterminate and self-organising system, with no predictable equilibrium
Uncertainty and the contingency of expectations

If imagination is root cause of uncertain futures, it is also one of principal tools for coping with them (Bronk, 2011) – in form of ‘imaginaries’ or ‘fictional expectations’ (Beckert, 2016)

Whereas rational expectations hypothesis (REH) assumes expectations are ‘informed predictions of future events’ (Muth, 1961) since future is ergodic – its parameters predetermined – and competitive pressures eliminate systematic errors ...

in indeterminate competitive and innovative market systems, expectations cannot be anchored in a pre-existing future reality or objective probability functions derived from past

Expectations and valuations are contingent ‘fictions’

Shackle (1972): ‘valuation is expectation and expectation is imagination’

And, since expectations have important role in creating the future, they are self-referential (Keynes’ beauty contest) and the legitimate object of political debate, contestation and power
Decision-making *despite* uncertainty

**Keynes** (1936): ‘individual initiative will only be adequate when reasonable calculation is supplemented … by animal spirits’

**Calculative devices still perform useful role in uncertainty:**
- calculating aspects of unknown future amenable to probabilities
- simulating complex interaction effects
- diagnosing newly emerging patterns and causal relationships increasing returns and threshold effects
- social role in *justifying* and *legitimizing* action (Beckert and Bronk, 2018)

But beware dangers of ‘scientism’ (Hayek, 1952), pretence of computability, and illusion of control

**Models, forecasts and narratives perform two other key roles:**
- provide the conviction and confidence required for action
- coordinate the expectations, decisions and actions of multiple actors

*In absence of convergence on uniquely rational expectations, market outcomes are determined by dominant narratives, models and new era stories*
Role of narratives in conditions of uncertainty

Economic actors must have fictional expectations to give them the confidence to act and provide ‘interpretive frames to orient decision-making despite the incalculability of outcomes’ (Beckert, 2016)

In particular, narratives serve to:
• ‘keep ontological uncertainty at bay’ (Lane and Maxfield, 2005)
• provide meaning and ‘create commitment to act’ (Tuckett, 2011)
• integrate existing information and known causal mechanisms, assign roles to actors and objects, develop a ‘plot’ and provide motive to act (King, 2017; Beckert and Bronk, 2018)
• provide forceful fictions and blueprints that coordinate action

Because narratives are effective coordination devices and partially performative, they are instruments of power and control:
• central banks, for example, use narratives to ‘cajole expectations in a particular direction’ (Holmes, 2018)
• political and market power rests with those able to make their narratives and imaginaries count (Beckert, 2016)

NB Conversation is key means of discovering guiding narratives
Narrative economics: understanding market trends

Shiller (2017) call for ‘narrative economics’ to understand causal relationship between narratives and economic fluctuations:
• narratives are subject to emotional contagion amenable to study with models borrowed from epidemiology
• ‘new era stories’ become conventional frames involving group emotions at macro-level (Akerlof and Shiller, 2009)
• ‘discourse analysis of news feeds’ to measure shifts in emotions registered in texts as tool for predicting market trends (Tuckett, 2018)

Importance of ‘narrative revision’ (King, 2017) in explaining abrupt change in expectations and market instability

Grand narratives associated with socio-economic regimes (Boyer, 2018)

Emotional contagion, rhetoric, power, discourse of best practice and market pressures for ‘mimetic convergence’ (Orléan, 2014) lead to dominant narratives and widely shared models analytical monocultures, shared blindspots and herding behaviour that can profoundly destabilize markets (Bronk, 2011)

NB Contrary to REH, homogenous expectations and shared analysis are a warning sign of instability
Framing effects: the epistemic danger of monocultures

All knowledge is partially dependent on conceptual frames we internalize rather than being mirror-like reflection of reality.

Theoretical or conceptual frameworks distort as well as focus our vision, so that if we rely on one such lens (the apparently ‘best’ analytical framework) we are liable to error.

Modelling monocultures imply limitations in our vision, analytical blindspots and inability to spot bias in our analysis.

Policy or regulatory monocultures are dangerous because enforcement of homogenous practices and shared analytical routines leads to homogenization of how we think.

Feedback loops between shared practice and thought.

Epistemic closure prevents successful revision of ‘best practice’ (Bronk and Jacoby, 2016).

Lessons from biology and portfolio theory

Analogy of monocropping:
wide spread use of single crop strain → highly correlated vulnerability to novel threats

Other lessons from biology:
• protective effect of genetic diversity
• importance of firebreaks and modularity in interconnected systems to limit contagion

Lessons from portfolio theory: diversification as protection against uncertainty. But note:
• diversification only succeeds in reducing variability of returns and danger of unexpected wipeout if assets are negatively or weakly correlated with one another

→ protective effect of highly differentiated modelling and regulatory frameworks
The innovative potential of a diversity of models

In conditions of uncertainty, diversity of models is key to ability to innovate and spot newly emerging problems:

- repeated juxtaposition of alternative ways of thinking and acting or ‘dissonance’ (Stark, 2009) → new insights through innovative recombinations of ideas
- flexible use of different perspective or cognitive spectacles → disruption of established ways of looking at problems and ability to see different facets of a problem
- Diamond (2011): ‘The complexity of the economy calls for the use of multiple models that address different aspects …[M]odels are incomplete – indeed, that is what it means to be a model’
- Each model is a diagnostic tool for teasing out certain systematic tendencies and spotting newly emerging patterns

‘Disciplined eclecticism’ (Bronk, 2009): where choice of method is driven by prior multi-paradigm assessment of problem
Conclusion:

Capitalist economies are characterized by competitive innovation and hence are radically indeterminate.

In such conditions of uncertainty, economic actors rely on a contingent combination of calculative devices, narratives and imaginaries to motivate and coordinate action.

The contingency of expectations implies a contingency of valuation and the absence of a unique equilibrium.

Markets depend on shared narratives to coordinate investment and instill confidence but on decentralized and diverse cognition to avoid errors and provide stability.

*Markets and economics work best at shifting boundary between shared mental models and cognitive dissonance.*
References (1)


References (2)


