The Future of Macroeconomics

Why observation of the behaviour of human actors and how they combine within the economy, is an important next step

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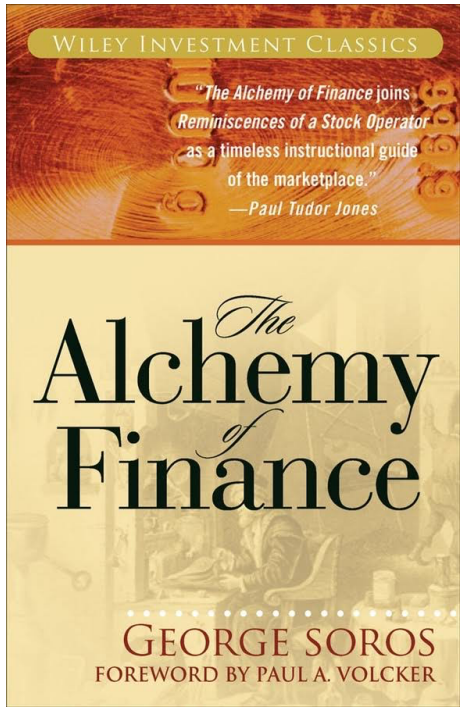
Edinburgh. INET Conference, October 23rd, 2017

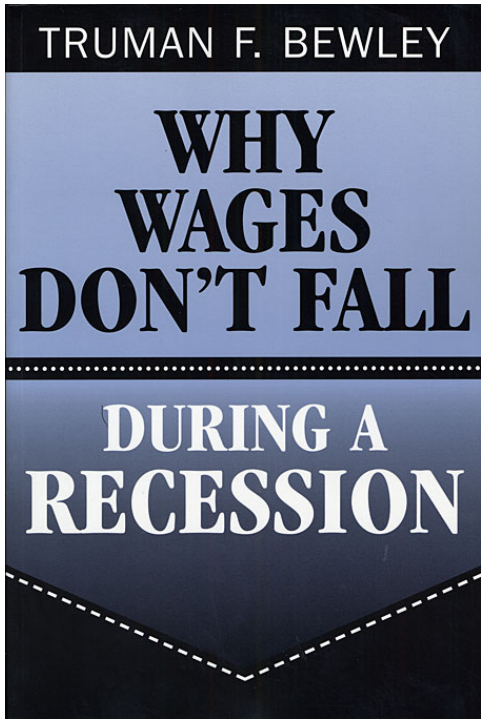
Introduction

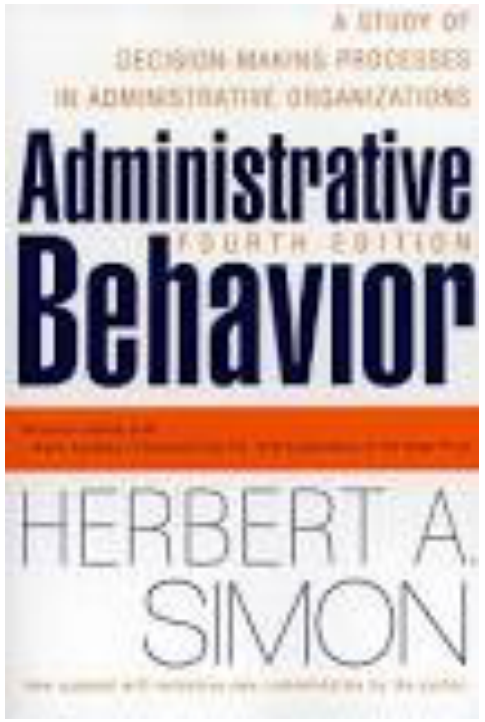
- Future macroeconomics might re-establish a credible reputation in three ways:
  - **Incorporating secure advances made in other areas of economic thinking**
    - E.g. information economics or game theory, etc
  - **Using new methods of analysis and data handling.**
    - From physics and computer science, such as agent based modelling and machine learning.
  - **Facing a fundamental issue at the heart of economic thinking**.
    - Human economic agents simply *cannot know* the economic facts of the world or co-ordinate on them except through their human interpretive and perceptive capacities, necessarily based on brain architecture and psychology located in specific social environments.

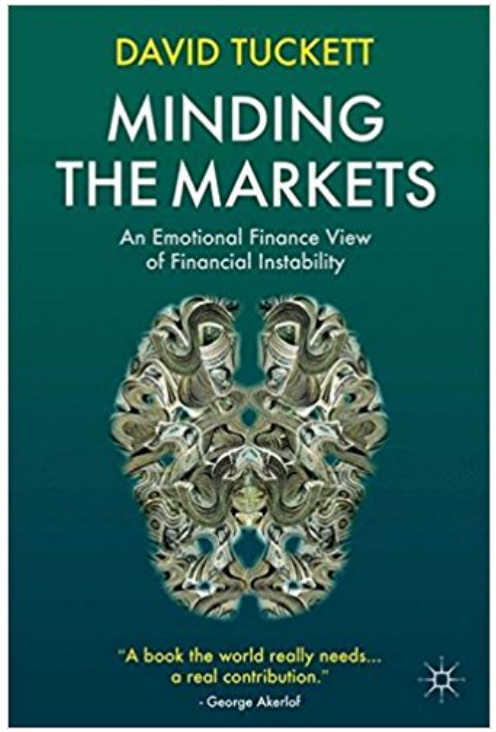
In modern social and brain science facts are not available for action except via embodied and socially influenced perception and memory…

Start by studying the conditions constraining decision-makers …









Social Interaction, Fallibility and Reflexivity are the norm:
None of the descriptions of decision-making in these studies are consistent with standard models. Nor are those from other similar work.

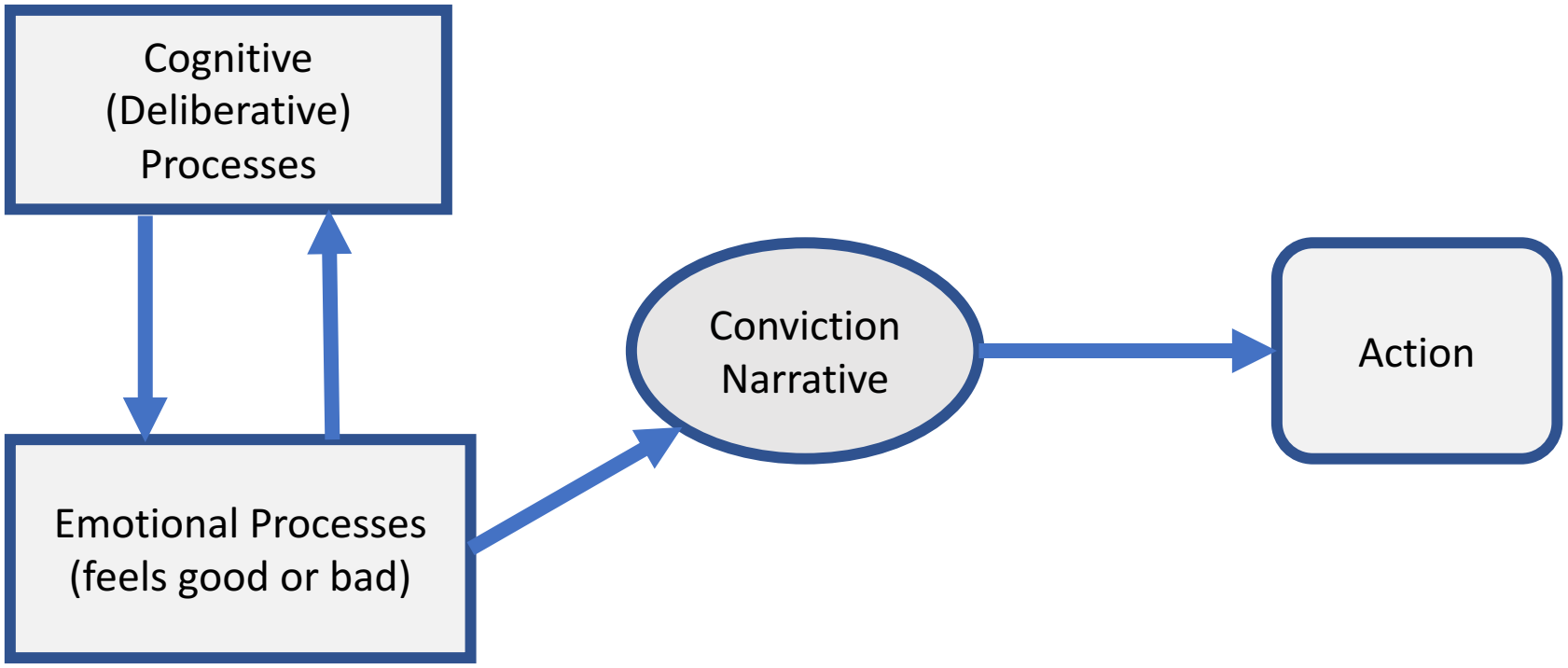
Ecological Validity and Bounded Rationality

- “the task is to replace the global rationality of economic man with a kind of rational behavior that is compatible with the access to information and the computational capacities that are actually possessed by organisms, including man, *in the kinds of environments in which such organisms exist.*” (italics added). Simon, 1946
- The assumption of global rationality and the assumption of risk rather than uncertainty has avoided the proper study of how economic actors co-ordinate. The future needs to address them.

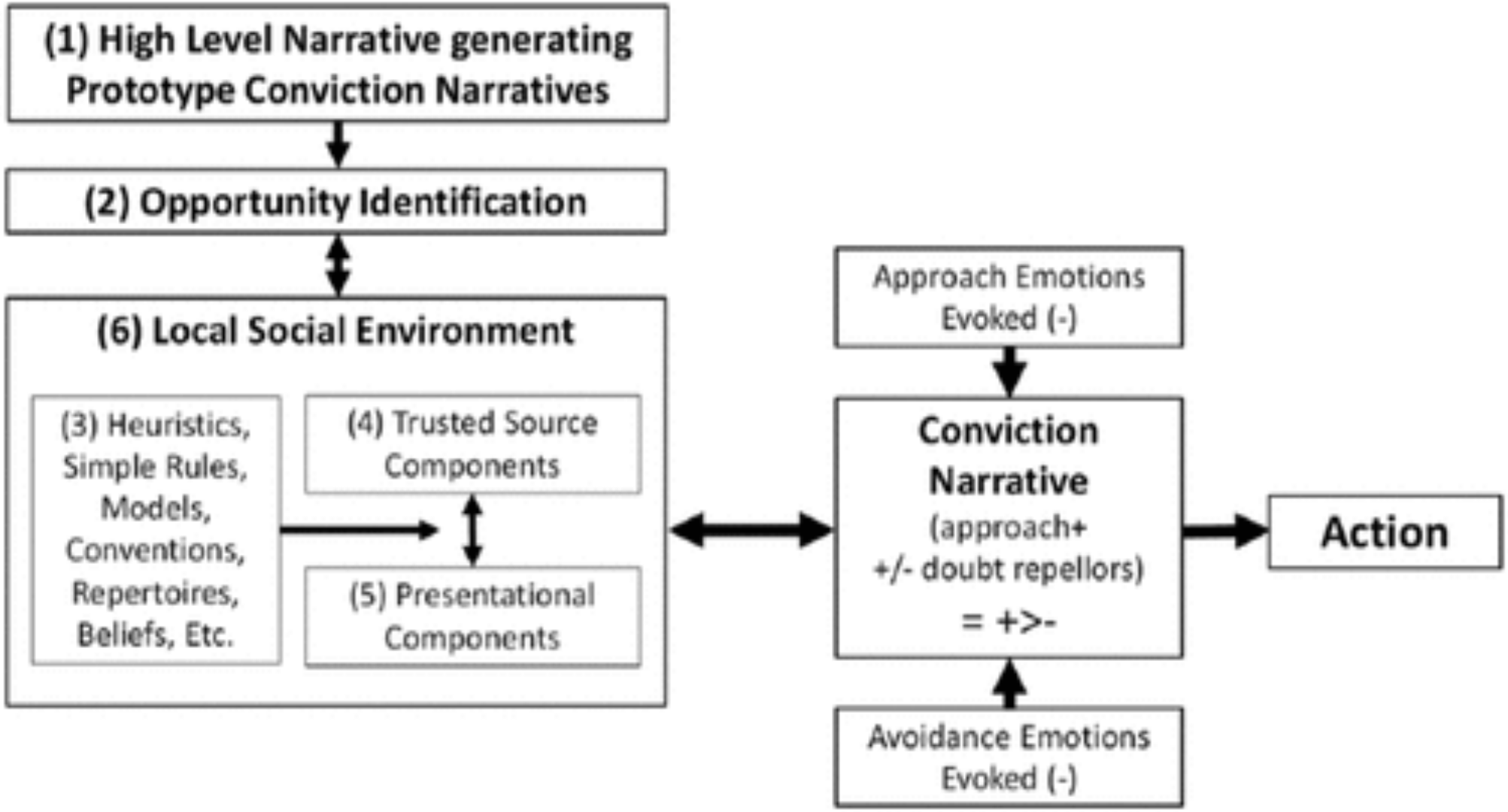
Conviction Narrative Theory (CNT)

- Actors 'supplement' and support reasonable calculation with 'animal spirits', and so put aside thoughts '*of ultimate loss … as a healthy man puts aside the expectation of death'* .. [if] *the animal spirits are dimmed and the spontaneous optimism falters, leaving us to depend on nothing but a mathematical expectation, enterprise will fade and die;—though fears of loss may have a basis no more reasonable than hopes of profit had before.* (Keynes 1936, p162)
- CNT is a new social-psychological theory of decision-making which asks how economic actors manage to act in **radical uncertainty and with what consequences for the way they co-ordinate when their decisions are aggregated.**
- **Agents adopt conviction narratives (narratives they think accurate and feel are true) that are subjectively capable of supporting action because they cognitively and affectively manage both the anticipations of potential gain and loss associated with its uncertain consequences.**
- **Conviction narratives are rapidly responsive to changes in narrative sentiment.**

Cognition and emotion combine to facilitate action….



CNT - selecting and supporting action under (radical) uncertainty

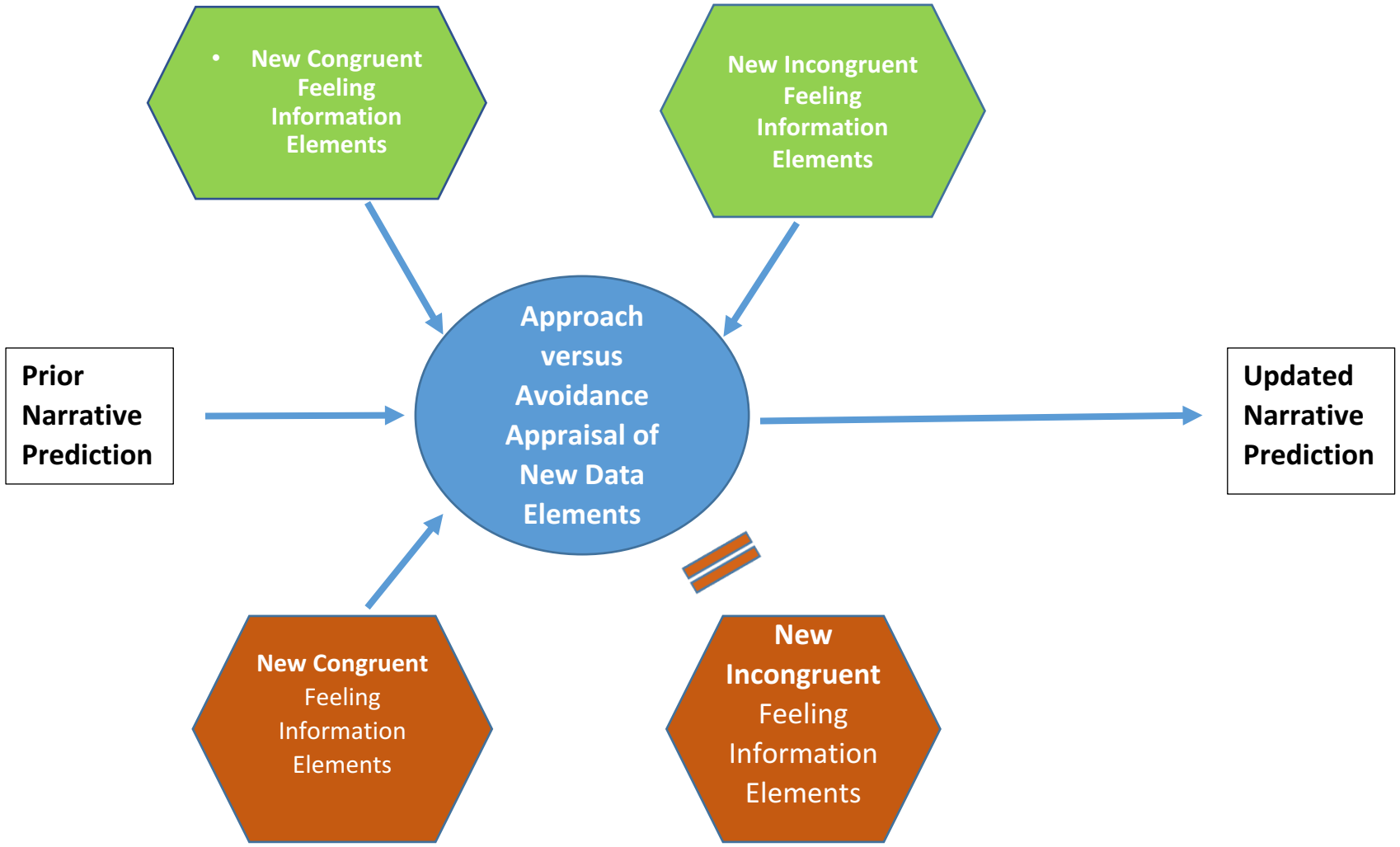


Reproduced from Tuckett and Nikolic, 2017

Divided State Theory

- In CNT, all decisions made under uncertainty necessarily require (ex ante) conviction narratives.
  - Conviction is achieved by imagining possible narrative outcomes which evoke approach and avoidance.
- Under uncertainty we can expect **from an outside view** that most narratives would contain some grounds for feeling approach and some for avoidance → **inside** anxiety repelling techniques can be used to diminish avoidance. Or **inside** excitement amplifying techniques can create an attachment to a idealised **Phantastic object**.
- "Divided state" (D^S) – is a situation in which certain topics or situations exhibit an unusual lack of balance – either avoidance (anxiety) or approach excitement seem **internally** to diminish or disappear. (Switch)
  - *We think what we can tolerate to feel, things not tolerated are not seen.*

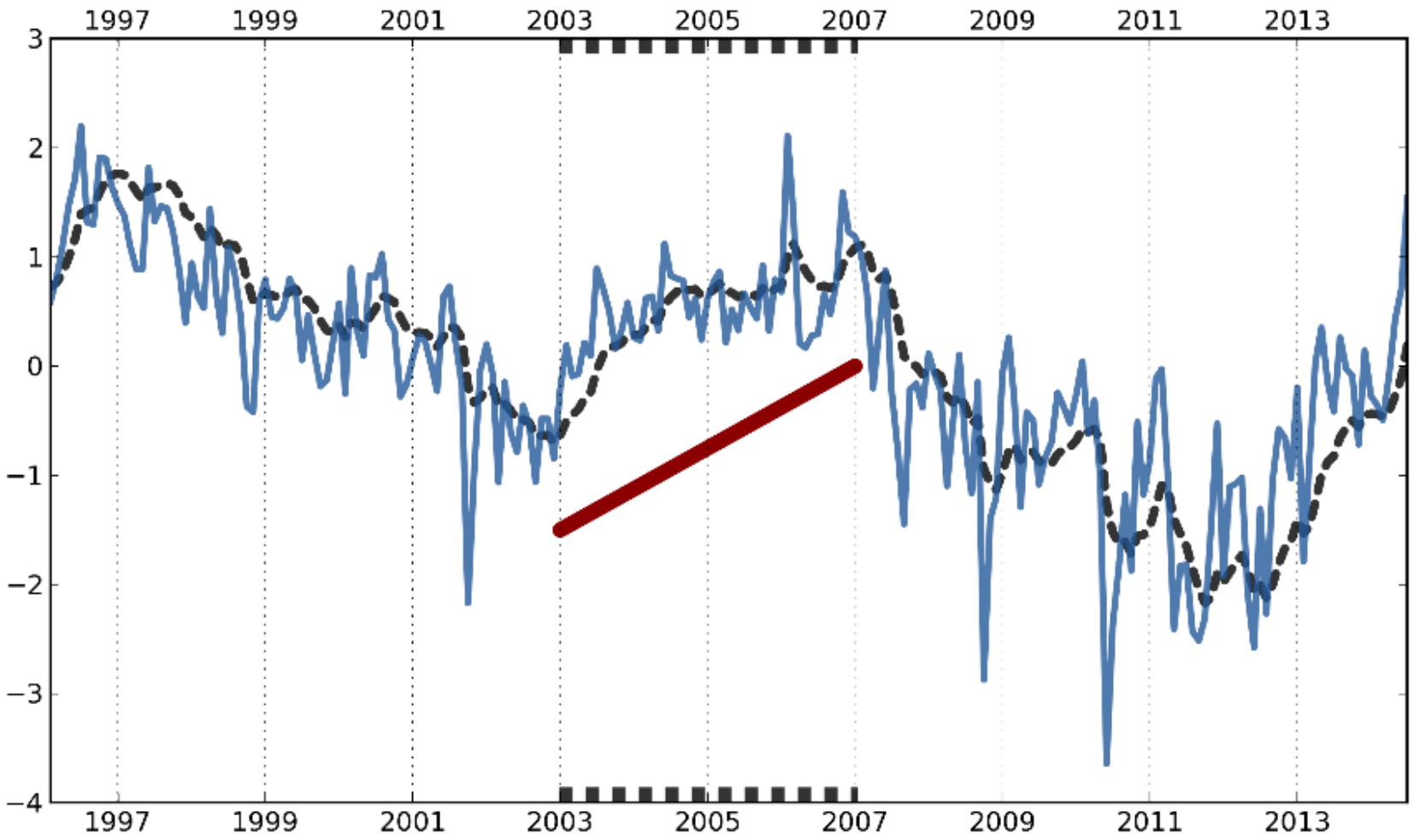
Updating in D^S and I^S States



Topic Sentiment: Liquidity Articles in US Reuters

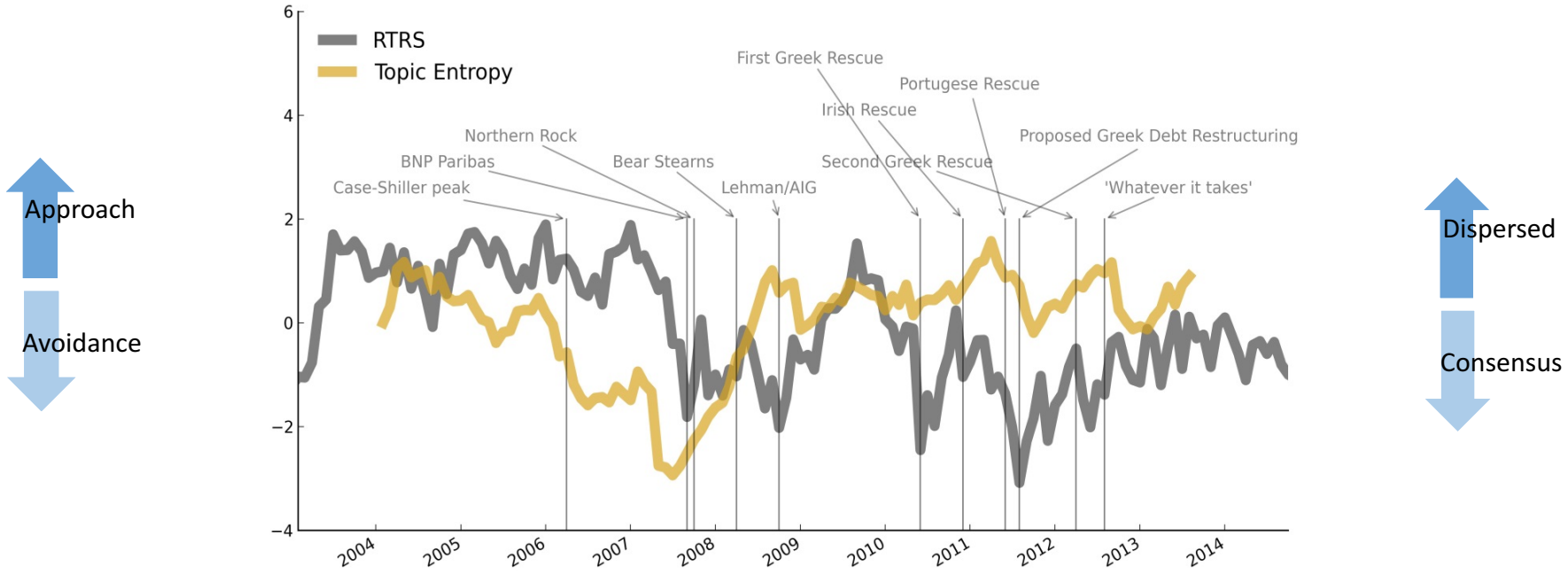
Approach

Avoidance



RSS = Number of Approach Words Less Avoidance words (normed)

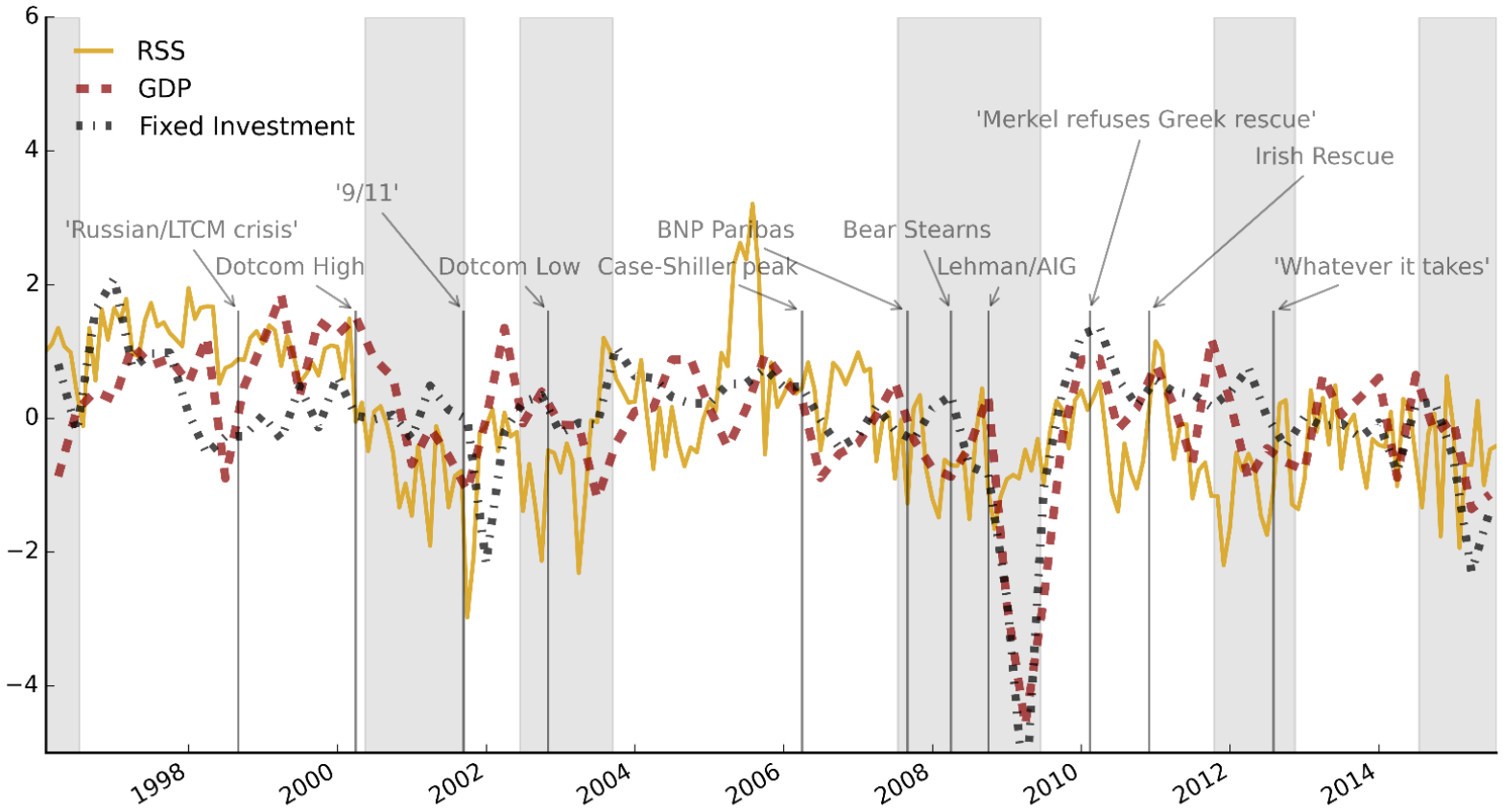
Topic Consensus



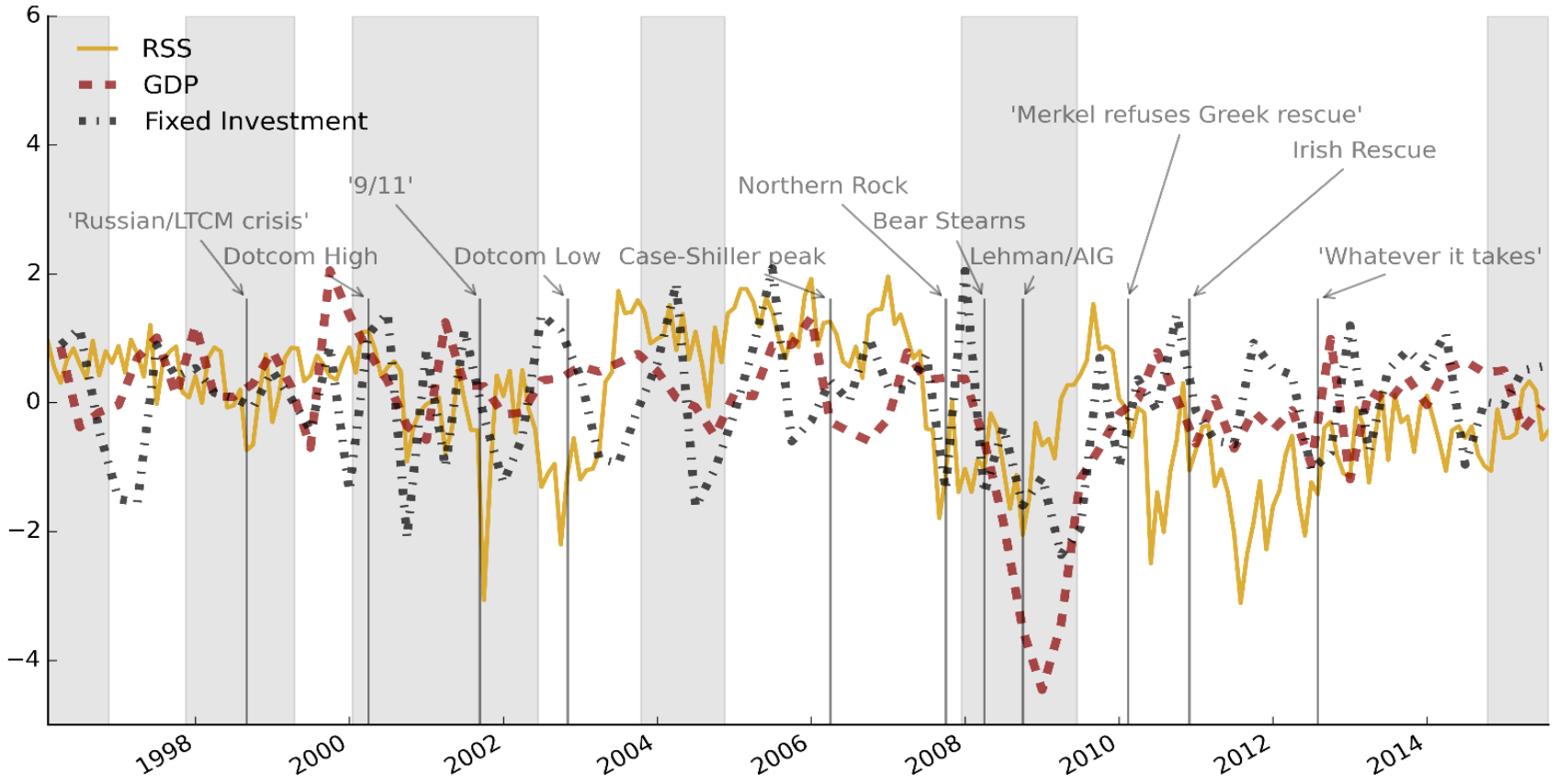
Reflects news content – does not explicitly model opposing views or capture market consensus, but market consensus may reflect what people read:

- *"The history of speculative bubbles begins roughly with the advent of newspapers. […] Although the news media… present themselves as detached observers of market events, they are themselves an integral part of these events. Significant market events generally occur only if there is similar thinking among large groups of people, and the news media are essential vehicles for the spread of ideas."* (Shiller, 2000)

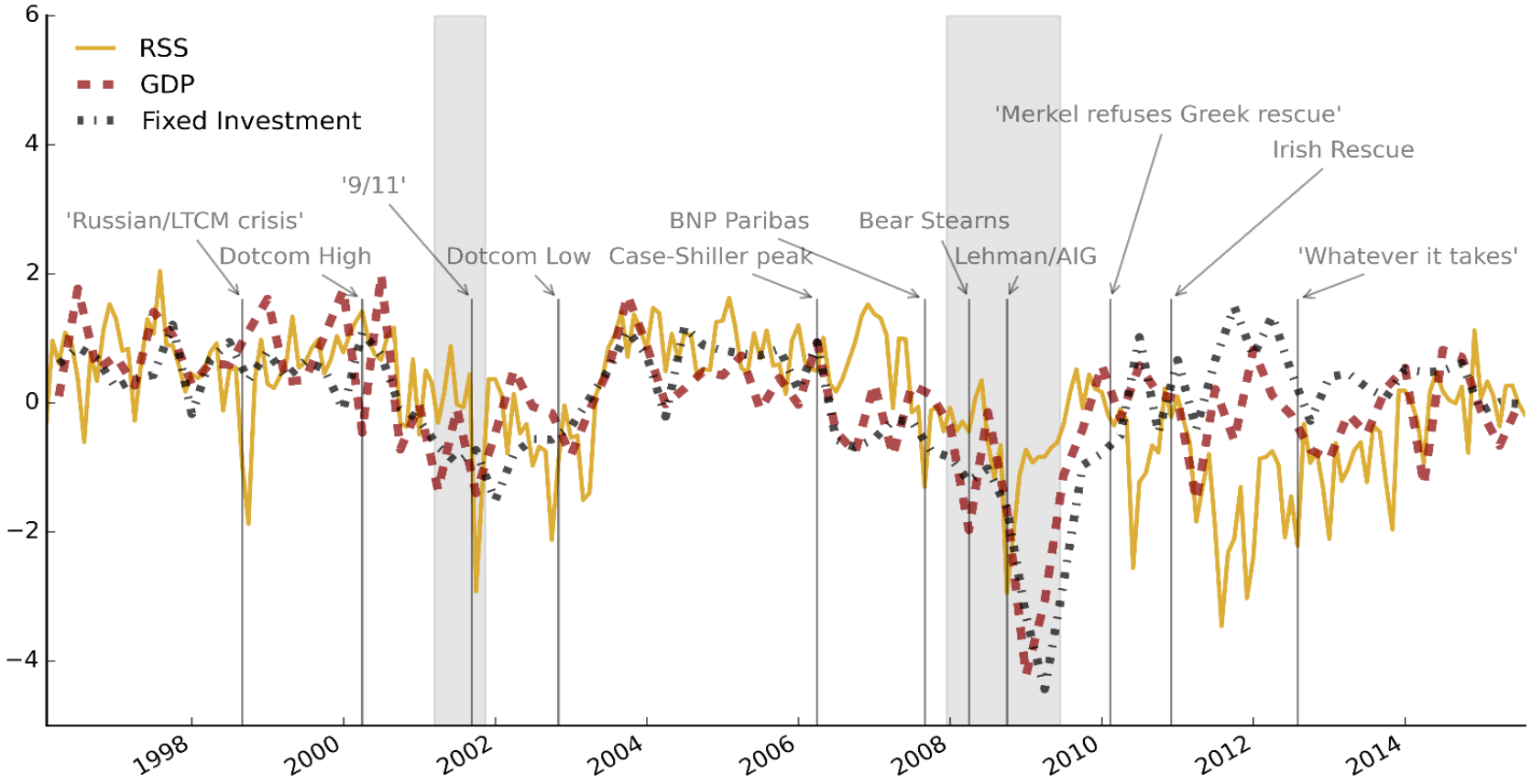
RSS (Animal Spirits) and the Canadian Economy



RSS (Animal Spirits) and the UK Economy



RSS (Animal Spirits) and the US Economy



Cross sectional Comparisons: RSS & Eight Economies

Table II Cross-Sectional Comparisons of RSS Shifts in 2007 and 2008

Number of standard deviations from the mean value over the period 2003Q2 through 2007Q2; US, UK, Germany, France, Spain, Sweden, Canada and Ireland

Country	2007Q1	2007Q2	2007Q3	2007Q4	2008Q1
US	-0.31	-0.91	**-4.37**	**-3.54**	**-4.42**
UK	0.28	**-2.11**	**-6.52**	**-5.33**	**-6.33**
Germany	-0.13	-0.12	**-3.16**	-1.84	**-3.65**
France	1.22	0.03	**-2.59**	**-2.63**	**-4.38**
Spain	-0.28	**-2.56**	**-2.48**	**-2.09**	**-2.28**
Sweden	0.27	-0.47	-0.76	**-2.44**	**-3.20**
Canada	-0.24	0.18	-1.91	**-3.05**	**-4.06**
Ireland	0.76	**-3.21**	-1.37	-1.31	**-2.09**

Note: 2 standard deviation moves in bold

Granger causality

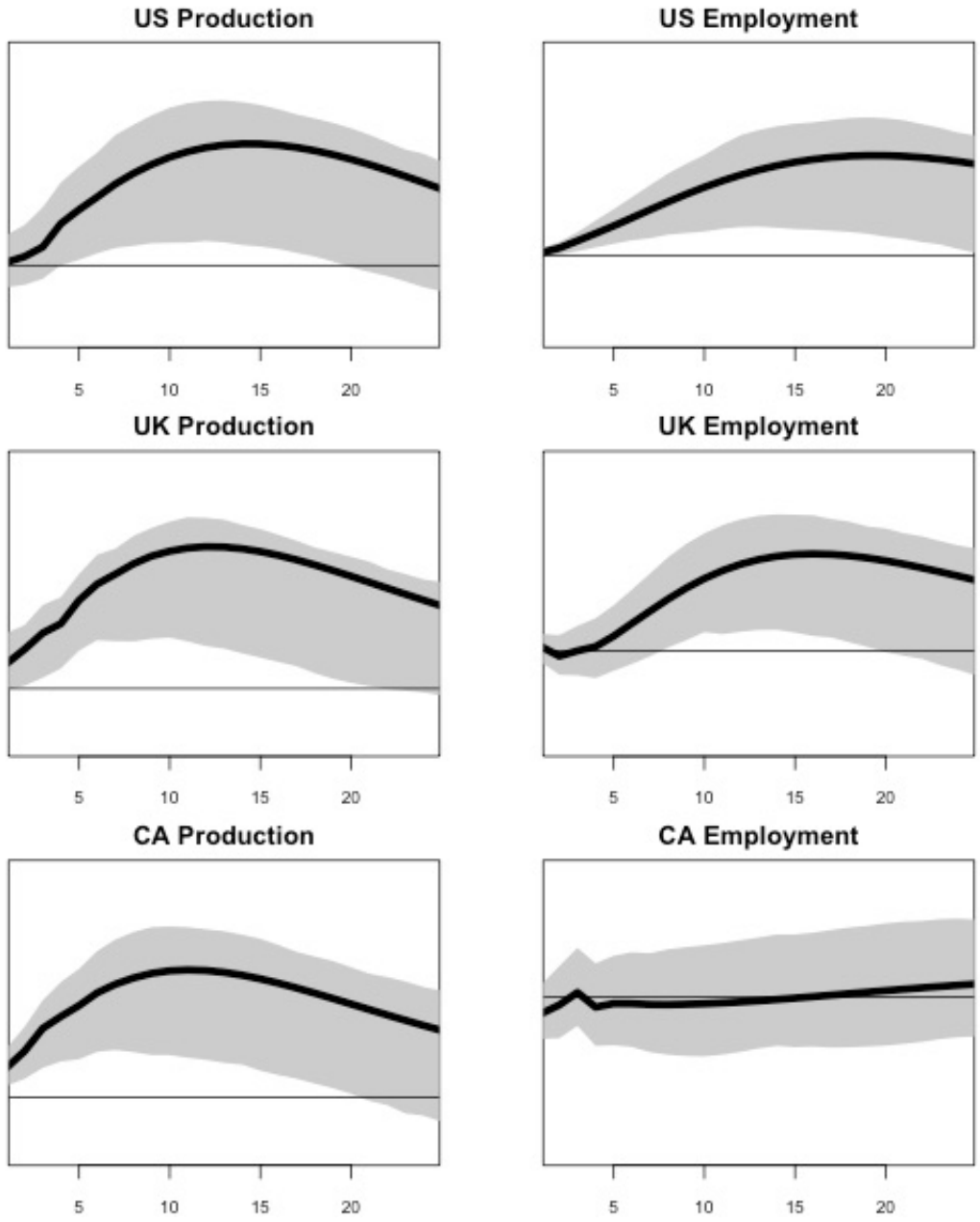
Table IV Granger Causality between Changes in RSS, GDP and Investment

	GDP from RSS	GDP to RSS	I from RSS	I to RSS
UK	0.41	0.24	0.69	0.071*
US	0.007***	0.85	0.03**	0.1
CA	0.29	0.28	0.036**	0.91

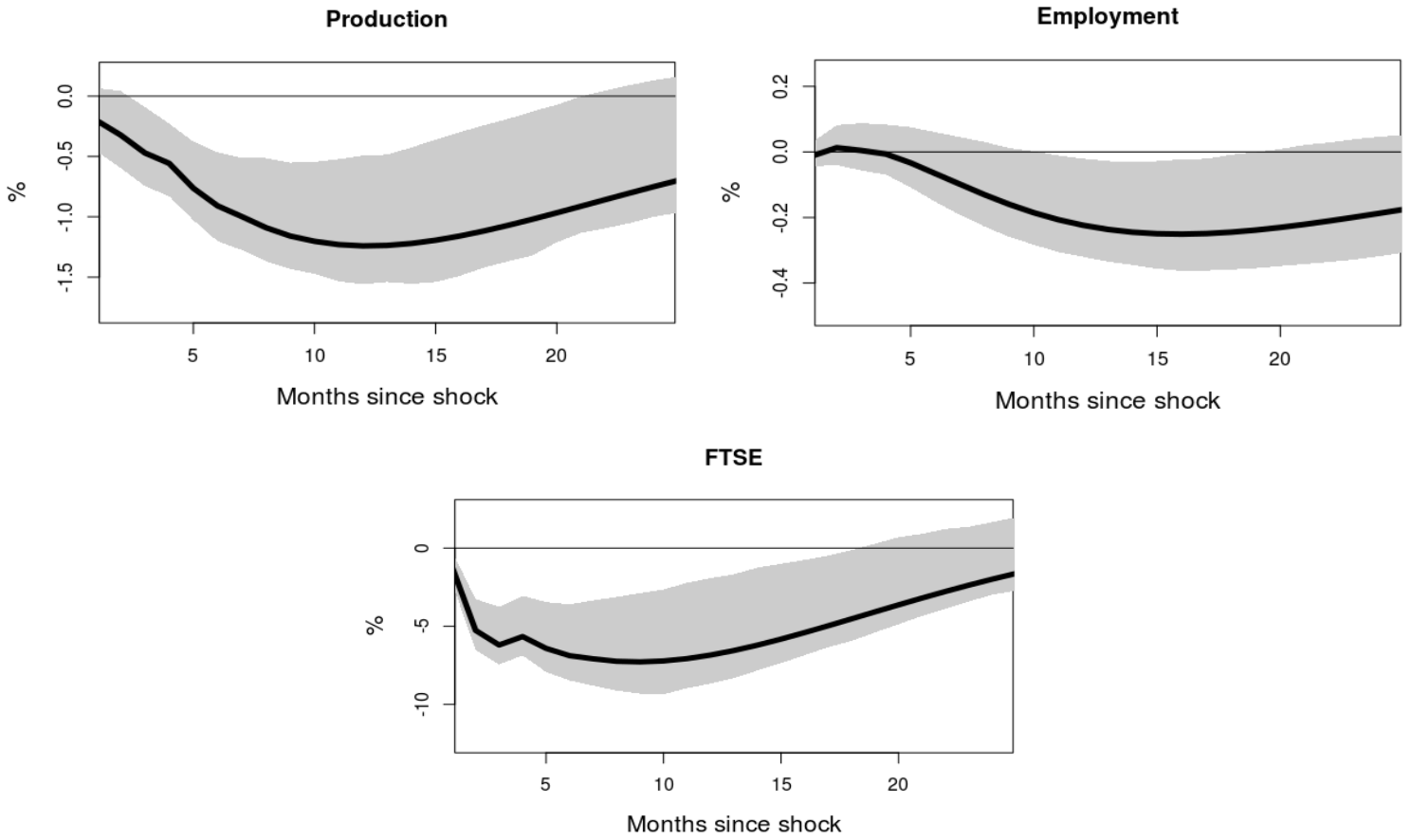
Note: *p<0.1; **p<0.05; ***p<0.01

Vector Auto Regression (VAR)

The impulse response of RSS on IP and Employment, for the US, UK, and Canada



UK VAR
(Impact of a negative shock)



We also follow Baker et al (2016) in considering shocks to RSS equivalent to the difference between the mean value in 2005-2006 and the mean value in 2011-2012 – periods either side of the crisis dominated by relatively stable and high levels of RSS and by volatile and low levels of RSS respectively. The difference between the two periods represents 2.5 standard deviations of RSS.

The maximum increase in the FTSE resulting from a 2.5 standard deviation shock in RSS is 7.28%. For employment and industrial production the corresponding figures are 1.24% and 0.25% respectively.

Granger causality between (US) RSS and other common measures of sentiment

Table VI: Granger Causality between RSS, the EPU, E5Y and the MCI

	From RSS	To RSS
EPU	7.1e-06***	0.054*
E5Y	0.087*	0.63
MCI	0.019**	0.84
Note:	*p<0.1; **p<0.05; ***p<0.0	

Conclusion

- Macroeconomic models could advantageously drop the assumption that economic actors are able to know what is going on in the economy.
  - It removes radical uncertainty and other aspects of reality.
- Drop the distinction between rational and irrational (or behavioural)
  - →**incorporate a theory of rational action which takes account of what we know about the way human sentient and social actors take decisions under radical uncertainty.**
  - A lot of highly targeted ethnographic research should be valuable.
- CNT, a high-level theory of describing how agents use narrative and emotion in decision-making under radical uncertainty, may be useful.
- Applications of CNT using algorithmic analysis narratives in news and narratives show some promise.