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Monetary policy and the management of uncertainty: a narrative approach

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Abstract

In this paper we explore how macroeconomic theory might be augmented, and the practice of monetary policy better understood, if approached through ideas from social and psychological science. A modern, inflation-targeting central bank faces 'radical' uncertainty both in understanding the economy and in knowing how best to communicate policy decisions to influence behaviour. We make use of narrative theory to explore these challenges, drawing on fieldwork with the Bank's regional Agencies and conversations with staff and policy-makers. We find that the intelligence gathered from conversations with businesses is uniquely useful for both the analysis and communication of monetary policy. Such intelligence embodies knowledge about the plans which are making the future. It also provides insights into how economic agents understand the economy they are creating. These insights can help the Monetary Policy Committee to communicate its policy as a narrative the public understands and commits to. We propose further research to advance and test these ideas.

Key words: Monetary policy, narrative theory, uncertainty, inflation-targeting, central bank communication, macroeconomic theory, economic knowledge.

JEL classification: E52, E58.

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Introduction

Decision makers face radical uncertainty when they cannot calculate reliably whether the actions they take will produce the consequences they wish. In more formal terms this happens when the data they have available and the model governing how future innovation in the economy will play out is contestable.

Contemporary monetary policy pursued by inflation-targeting central banks is not solely based on macroeconomic theory. In part, this is because theory provides very little guidance as to how policy makers are to know what is happening in a dynamic evolving economy or how communication about their actions is most effective at influencing behaviour. But even more decisively it is because theory often ignores radical uncertainty (King, 2017; Kay and King 2020).

Until recently, theories about knowledge and communication which had developed outside economics were thought to have little obvious role so that inside academic economics they may have seemed to have had little relevance, as is still largely the case. Additionally, in the period before the Financial Crisis and the Great Recession, most macroeconomic theories and models were thought to provide good-enough analytic understanding (Blanchard et al 2017), although they explicitly ignored any important role for (Knightian or Radical) uncertainty.

In this contribution, we want to explore, in a preliminary way, how existing macroeconomic theory might be augmented and the practice of monetary policy better understood, if uncertainty and ideas about what constitutes knowledge in real-world contexts are approached through the lens of ideas from social and psychological science.

On the one hand, this means gauging the possible advantage of treating all economic actors as sentient participants in the economy - social beings interacting and communicating with each other through the full range of faculties they have evolved, particularly narrative sense-making and imagination (Abalofia 2010). On the other hand, this means it may be valuable to investigate economic actors by talking to them, seeking to gain their perspective on the actions in which they are engaged and then exploring ways to aggregate their forward-looking observations to become data for policy. For shorthand we will refer to the framework guiding this social and psychological science approach as Narrative Theory – a theory that aims to extend the existing thinking that support monetary policy by highlighting the challenges for data selection and analysis with which an inflation targeting central bank must cope, if uncertainty about data is explicitly factored into the implementation task. Also, on the policy side, it aims to add coherence to the explanatory element in current theories of monetary policy.

To develop our Narrative Theory of monetary policy, we proceed as follows. First, we introduce the concept of narrative from a social and psychological perspective, emphasising the theoretical role

narratives play in generating actionable knowledge in conditions of (Knightian) uncertainty. Second, we summarise some key elements of Holmes' (2014) work on narratives and the expanding communication imperative in central banks. Third, we describe aspects of our pilot study "conversing with and observing" staff who collect data and generate monetary policy at the Bank of England. Fourth, we offer some initial findings from the pilot to suggest that, framed within Narrative Theory, the data that members of the Bank's Agency Network (the "Agents") collect is uniquely useful for both the analysis and communication elements in modern monetary policy and might be still more so. We then propose further research to advance and test these ideas.

1. Narratives in social and psychological science and narratives in economics

The term "narrative" in most social and some psychological science has a long history playing a major role, to a greater or lesser extent explicitly, in foundational works of philosophy and social and psychological theory (such as that by Dilthey, Gadamer, Heidegger, Benjamin, Weber, Freud, Ricœur, Derrida, Lacan, Levi-Strauss, Jameson, Bruner and Habermas). However, as we will briefly explore, it is used very differently in this extensive body of work to the way it has recently begun to be used in economics.

In economics, narratives (and beliefs) are typically viewed as alternatives to rational expectations. They are argued to be important mainly because they have the potential, if they become widely shared or viral, to influence behaviour in irrational directions (Gennaioli and Shleifer, 2018; Shiller, 2019).

The difference between economists and social and psychological scientists in the way they view narrative, at least implicitly, rests on the domain assumptions held in the different disciplines around the presence of radical or Knightian uncertainty and the nature of the everyday knowledge available to economic agents to guide them. Although it was not always so (Keynes 1936, Parsons, 1937), the defining feature of the revolution in macroeconomics ushered in by Samuelson and Friedman is that economies can be analysed as forming mostly stable systems which from time to time must adjust to "shocks". In this approach, expectations of the future can rest on statistical optimisation of what is known. Optimal expectations, based on fairly stable knowledge of how an economy works, can be envisaged and shocks can be efficiently absorbed.

The defining feature of the analysis of social systems (of which an economy is one part) in social science, on the other hand, is that "order" or "stability" is constantly in question (Parsons 1937, Beckert 2016, 2019). So, whereas in modern economics unstable systems are treated as atypical, in social science it is considered usual - with a great deal of attention given to how systems can become more or less orderly, but only for a while.

The difference in view between the two sets of disciplines has important implications for the way they

have typically conceived the information available to economic agents, such as the Central Bank, when developing expectations of the future. It also has implications for whether economic models are used by policy makers as more or less faithful simplifications of the world – requiring very strong assumptions - or as "imaginaries" (Beckert and Bronk 2018, Beckert 2019), with heuristic value for playing with *possible futures*.

King (2017), a former governor of the Bank of England, stressing the need to accept that in a dynamic and evolving economy we "*cannot imagine the goods and services that may exist in the future, nor conceive of all the eventualities that may befall us"* (p129), has made the point that current theories of money and the market economy (including standard macroeconomics) do not deal with what he calls "radical uncertainty" in a way that allows them to explain how markets can provide "an effective link between the present and the future" (King 2017: p 11). As Kay and King (2020) elaborate, theories with less onerous assumptions than rational expectations would be useful.

One starting point is to suppose the interpretation of data necessarily plays a key role in any knowledge claim. Looking at today's economy and particularly its financial sector there is a lot of information circulating with *potentially* forward-looking implications and a great deal of economically remunerated activity devoted to interpreting it and anticipating it. Although radical uncertainty means that future asset prices or the success of business plans are inherently unpredictable and optimisation conceptually impossible[1], its reality does not prevent agents from forming expectations, creating for themselves a sense of actionable knowledge or acting. From a social science perspective, we can suppose, therefore, that agents might cope by expending effort, considering as much available information as they can, giving it meaning and relevance, applying a causal model of how they imagine things will evolve and then acting. There is evidence, talking to economic agents, that this is exactly what they do (e.g. Abolafia, 2005; Berezin, 2005; Bewley, 1999; Knorr Cetina 1999, 2005; Smith, 1999; Stark, 2009; Tuckett, 2011) and that this is how an economy is made.

In this view, economic information in the real-world, including the knowledge a central bank committee needs to apply a monetary rule or "reaction function" and explain what is being done, *does not* exist sui generis. It must be interpreted – that is *constructed* by sentient and networked social human beings deploying their brain and cognitive systems mediated within their social environments and using their imaginations.

It is in its role as constructing knowledge that narrative, viewed from within social science, cognitive and affective neuroscience and psychological perspectives, plays a key role. The capacity for narrative

[1] "Since knowledge is so often imperfect and problems are incompletely specified, optimisation is impossible and agents would not know even after the event whether they had optimised or not. For the reasons described above, the idea that probabilistic reasoning enables uncertainties to be incorporated within a framework of optimisation is mistaken. Real - human - decision makers 'satisfice', to use the term introduced by Herbert Simon; they find solutions that are 'good enough' rather than 'the best'", John Kay, personal communication.

develops early (Bruner, 1990, narratives are fundamental to human consciousness (Baumeister and Masiacampo, 2010) and for imagining the future ((Suddendorf, Addis and Corbalis, 2009). As discussed in the social and psychological science traditions, they evolved as a vital part of human cognitive and communication systems – being used to make sense of the present, simulate futures and allow plans to be shared and activated in cooperating human groups. Narratives are developed by individuals and shared at the group level. When they are shared, as Shiller (2019) demonstrates, they can have the force of fact.

From this perspective, the expectations agents develop in the macroeconomy are based on narratives about what is happening around them as well as what others are doing. Such narratives help them to overcome uncertainty and to act despite lack of reliable knowledge and the constant potential for loss – whether of reputation or profit.

Like the rest of the cognitive apparatus, narratives are embodied (Lakoff, 2012; Phelps, 2006) – which means that as "thought" or told or heard they activate brain networks, including the amygdala and orbitofrontal cortex (Rolls, 2019) and so evoke emotion (Fenton O'Creevy and Tuckett, 2019). Like human imagination more generally narrative's capacity to endow thought with a sense of reality is facilitated by the neurobiological accompaniments of "mental time travel" (Suddendorf, Addis and Corbalis, 2009). So, putting all this together, we might say that as economic agents simulate and imagine the outcome of future plans we can suppose the 'as if body-loop' (Bechara & Damasio, 2005) in the brain is engaged. It means that they are, so to speak, testing whether outcomes are good for their biological needs by putting their bodies out into the imagined future to simulate before they happen the expected experience of their future selves and the experiences of others. Such anticipation is socially mediated (i.e. it draws on locally available thinking judged as plausible) and so creates conviction where calculation alone cannot. It confers advantage and is in part automatic. It also means human actors feel together as well as compute together the outcomes that different narratives predict. In this way, they produce a sense of the subjective accuracy (verisimilitude, Bruner (1984)) of the narrative elements that then allow them to commit to action. (Tuckett and Nikolic, 2017).

In fact, Keynes (1936) had intuitively recognised this human capacity. Investment decisions, commitments to profit with a possibility of loss, "cannot depend on strict mathematical expectation", he wrote, "since the basis for making such calculations does not exist" (Keynes, 1936: 163). Rather, to act, investors in a project must put aside thoughts "of ultimate loss … as a healthy man puts aside the expectation of death" (Keynes, 1936: 162). His formulation recognised that uncertainty is coped with in economic decision-making by drawing on "animal spirits" (features of the human psyche) to overcome uncertainty and consequent anxiety, implicitly drawing on their narratives of confidence and those around them.

From these viewpoints we can suppose that agents in the macroeconomy develop expectations based

on "conviction narratives" (Tuckett and Nikolic, 2017). These enable then to support their economic activity, despite uncertainty. Doing so, they both contribute to and draw on shared conviction narratives circulating in their relevant networks. These narratives in turn can be supposed to both produce and to be produced by interpretations of the way the real economy is evolving. It follows that capturing the narratives people use to support their business and the wider shared group narratives they draw on to become convinced their narratives are accurate should indicate a great deal about the expectations with which they make the future.

2. Central Banking practice as the formation of narrative expectations

Thirty years ago, some central banks began to try to control inflation by seeking to influence expectations. Their effort was partly derived from macroeconomic theories about the role of expectations being developed in the US (Bernanke et al 1999, Lucas, 1976, Kydland and Prescott, 1977)[2] and partly the outcome of lived experience (Holmes, 2014). In any case, in the hands of central bankers who appear to have had a deep understanding of their societies, practice evolved. Fundamentally, in order to anchor the expectation that they will always do what is in their power to meet their target, inflation-targeting central banks have had to develop skills not discussed in theory. First, they have needed accurately and credibly to understand their economies and make medium term forecasts that they could communicate[3]. Second, d*e facto,* they have had to evolve skills in explanation and communication with their publics, including to manage their reputations as authoritative.

Dialogue between banks *and* their publics, therefore, is vital so that, consequently, regular, legible and credible communication skills have been evolved and are evolving.

The functioning of inflation targeting is that policy is made by central banks but market participants and the public do the work (Holmes, 2014; 2018). In this way, members of the public and market participants should be viewed as 'protagonists' in central banking, who simultaneously enact the economy according to policy pronouncements and enliven (or inform) the public sphere by engaging in conversation with policymakers. The economy changes conceptually and practically over time in profound ways. The conceptual tools—the variables—by which policymakers explain, interpret, and model economic and financial phenomena are transitory, if not fugitive. As a result, central bankers—like other policymakers—can reconfigure and stabilize their own understanding of the uncertain futures they face only through sustained conversational interaction with the market and the public. Such understanding gained through exploratory conversation is a precursor to the making of

[2] Lucas pointed out that in standard microeconomics, economists assume that people are rational. He extended that assumption to macroeconomics, assuming that people would come to know the model of the economy that policymakers use; thus the term "rational expectations.

[3] For example, using the Bank of England fan charts.

successful policy pronouncements designed to guide the expectations of the public in a desirable direction" (Holmes 2018).

It was "experiments", initially designed by the Bundesbank and then refined and formalised in a crisis by the Reserve Bank of New Zealand, which first brought narratives into play. Crucially, the idea was that officials, using written and spoken words (minutes, speeches, documents, press conferences, etc.), intended explicitly to go beyond the traditional ambiguity and secrecy for which central banks had been famous. As Holmes puts it, the aim was actively and explicitly to use language to "endow the future with discernible features". Words were crafted with great care and attention to create the pictures of the future their audience the Bank wanted them to expect. They were persuasive narratives or economic allegories (Blinder and Reis, 2005) designed to create expectations. Woodford (2001) quoted by Blinder (2008) was the theoretician who, building on developing macroeconomic theories of the role of expectations going back to the work of Wicksell, had most forcibly asserted that the essence of monetary policy is the art of managing expectations. In this view, effective control of overnight interest rates is not so much the end of successful monetary policy but a means to the end of affecting the evolution of market expectations. In this way, theoretically, "transparency" became "valuable for effective conduct of monetary policy," indeed a key component[4].

Blinder et al (2008) surveyed the history of central bank communication and the theories behind it. They suggest that communication can be an important and powerful part of the central bank's toolkit since it has the ability to move financial markets, to enhance the predictability of monetary policy decisions, and potentially to help achieve central banks' macroeconomic objectives. However, the large variation in communication strategies across central banks, they suggested meant that a consensus has yet to emerge on what constitutes an optimal communication strategy. Holmes quotes Posen (1997) to highlight the significance of the explanatory side of this development. Monetary targets, Posen suggested, were to be set by the Bundesbank because they "commit the Bundesbank to having to explain policy with respect to the benchmark on a regular basis…" As Posen recognised, "This is an explanatory impulse beyond the deceptively uninformative question of whether or not a specific target was met at the prescribed time."

Central banks, including the Bank of England, have gradually advanced practice so that in the words of a leading protagonist, their "overriding concern… is not to eliminate fluctuations in consumer price inflation from year to year but to reduce the degree of uncertainty over the price level in the long run…People will then stop worrying about inflation" King (2017 p 168).

The key idea is that because businesses and households base their decisions on expectations of the

[4] Another important reason for increased openness was the recognition of the need for accountability. In the UK, when responsibility for monetary policy was delegated to the Bank of England, an unelected body, legitimacy required the central bank to explain its actions so that it could be held to account.

future "the way we expect monetary policy to be conducted in the future affects economic outcomes today." (King, 2017 p176.) To anchor such expectations central bankers have learned routinely to craft their words carefully and to use them regularly at the time interest rates are announced to create what Holmes calls narratives of the future. In Holmes' language these narratives seek to make the future tractable - they constitute persuasive narratives that social scientists refer to as performative (Callon 2007, Mackenzie et al 2007) – i.e. they both seek to influence the now and actually to recruit the public to make the future.[5]

Several implications follow from this analysis of monetary policy implementation. To be successful an inflation targeting central bank will need to ensure that it is (1) tasked with a publicly agreed inflation target and is able (2) successfully and (3) credibly, to collect relevant data and to use it in creating forecasting models (4) that allow decision-makers to apply (5) and to be seen to apply a monetary rule which (6), aided by explanations must be publicly accepted as effective.

3. A Pilot Study: Methods and Background

Based on the social and psychological science summarised but not yet formulated in the way we are now able, in 2017 we proposed to the Bank of England's Chief Economist a pilot study to explore the work of the Bank of England's Agents and how the information they obtain about the business plans of economic agents interacts with the officials implementing the Bank's monetary decision-making policy cycle. The "Agents" it had seemed to us practiced a sort of anthropological fieldwork: a type of inquiry that is keenly sensitive to changing contextual information and, above all, to the insights, interpretations, and explanations of economic actors themselves. We hypothesised that, seen from the principles of the kind of narrative theory just outlined, the information obtained by the Agents might be fine-tuned to increase its potential value to the MPC and even to improve monetary policy. In line with our ideas the study would start from talking to three groups of actors involved in the way the Bank of England creates monetary policy at eight meetings a year.

1. **Nine Monetary Policy Committee (MPC) members**. Appointed by Government[6] for finite terms, they are responsible for achieving the 2% inflation target set by law backed by their power to set monetary policy (e.g. by adjusting interest rates). Four are external members and five are internal, Bank members (the Governor, three Deputy Governors and the Chief Economist). They each vote independently and transparently to set rates, agree minutes providing their reasoning, give speeches, attend the House of Commons Treasury Select

[5] "[C]entral bankers seek to endow the future with discernible features that we—the public—can reflect and act upon, animating or curtailing our propensities to produce, consume, borrow, and lend. It argues that central bankers, rather than predicting the future, seek to *create* elements of a tractable future. They do this with words. They use language to explore, promulgate, and sustain the ideas that animate our economic future, as well as the structures of feeling, the sentiments, expectations, and desires that make them real" (Holmes 2018:173).

[6] The Chief Economist is appointed by the Governor after consultation with the Chancellor of the Exchequer

Committee to justify their actions and four times a year agree a Monetary Policy Report[7].

2. **Twelve Regional Agents and their deputies** (the Agents). The Agencies based across the UK produce Agents' Economic Reports (AERs) ahead of each MPC meeting which form the basis of an Agents' National Summary (ANS). They are also responsible for targeted surveys of opinion among their contacts, planned in consultations after the previous MPC meeting. The ANS, and the outcomes of surveys, are published eight times a year alongside the MPC minutes, either in the Monetary Policy Report or as a quarterly Agents' Summary of Business Conditions (ASBC). These include indicative, numerical scores summarising directions of change over key national economic variables drawn from Agents' visits to their contacts (Agents' Summary Scores).

3. **The Agencies' Business Contacts across the UK** (contacts)**.** Nine thousand business, local authority and civil society contacts are each visited by the Agencies once a year, spread out through each MPC cycle. The contacts are in senior positions in UK firms and other organizations, including in the public and third sectors and often, but not always, well known to the Agency from relationships built up over previous visits. Each visit lasts an hour, is confidential, may sometimes include survey questions, and will cover general topics related to wages, employment, sales, output, profits and investment over the preceding year and business plans going forward. The Agents also answer contacts' questions and explain the MPC's current thinking.

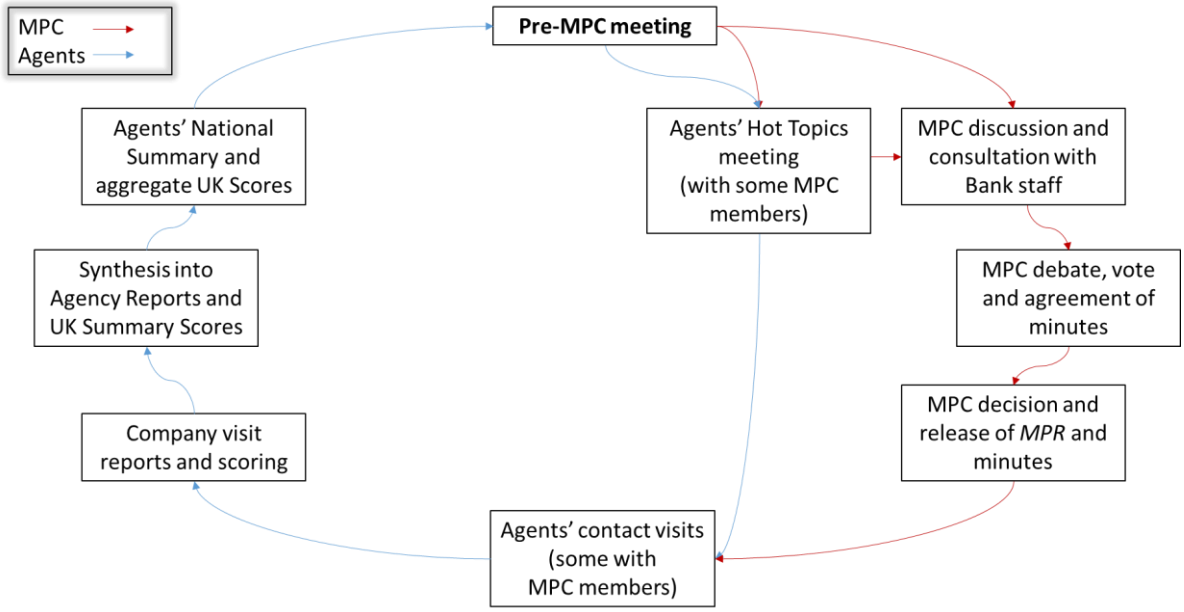
The cycle of some of the key meetings that take place in the formulation of monetary policy in the Bank, and how the Agencies interact with that cycle, is depicted in a stylised fashion in Figure 1 (overleaf). The cycle centres round the pre-MPC meeting when staff from across the Bank, including the Agencies, provide briefing to the nine MPC members[8].

For the Agencies, the process each cycle starts with a key meeting, following pre-MPC, between members of the Agencies, the Bank's monetary analysis area and some MPC members to decide what "hot topics" need extra investigation in the contact meetings the Agencies will conduct in the next period. Over the next six-eight weeks summaries of each contact meeting are then written up and scored by Agents, who then compile regional reports, the AERs, and Agents' summary scores for each key variable. The result is collated into an 80 to 90-page aggregate report which summarises developments and attempts to draw conclusions about what is changing. The collated document is circulated within the Agencies and soon after discussed at a phone meeting termed the "huddle" at which comments and challenges will be made.

[7] Before November 2019 called the Inflation Report.

[8] Data about global developments and financial conditions, demand and output, supply, costs and prices, etc.

Figure 1



An intense process of data compression is then undertaken within the Agencies. Between them the Agents will produce a much shorter 6-page final document which, after several drafts and opportunities to comment, will be sent to MPC members, and the wider Bank, as the Agents' National Summary (ANS) including the Agents' summary scores. That ANS is then further edited within the Agencies, with comment from Bank colleagues, to create a summary for external publication coinciding with the publication of MPC minutes[9]. Frequently, based on more formal surveys of the contacts, there is also an Agents' Special Topic Survey of business contacts which will be also summarised in a note and a short presentation to pre-MPC. For most of 2019 these Topic surveys were dominated by questions about Brexit preparations.

A second Agent will go over the 90-page document and attend the huddle to prepare a presentation for the pre-MPC meeting. That presentation also undergoes a rigorous process of drafting and challenge within the Agencies. .

In what is a very large-scale effort to derive structure from text data, great care is taken to ensure, first, that what starts out as anecdotal information derived from conversations, when summarised, is in fact judged within the Agencies to be an accurate picture of their collective judgment of what is changing in the economy. Second, attention is focused so that, whether presented in speech or writing, what they refer to as the "narrative"[10] is clear, relevant to the issues that will be on the pre-MPC meeting agenda and has a clear "message"[11]. To achieve this end-result the designated presenter will,

[9] Box 3, page 30-31 in the November 2019 report.
[10] The word used by those doing the drafting and discussion.
[11] The process has evolved. Twenty years ago, the Agents did not attend pre-MPC with a prepared presentation. Rather one of the Agents would attend pre-MPC and then comment on the other presentations from what he or she supposed might be the viewpoint of the Agents.

in an intense week of activity read the aggregate 90-page report, participate in the huddle, and attend a pre-pre-MPC agenda discussion with the staff head of monetary analysis and the other teams. Before all that s/he will have prepared his or her own regional report and "dug deep" into scoring changes and detailed reports.

The aim is to decide which the key developments are and to test whether the points he or she wants to make are well supported by the evidence available throughout the Agencies- i.e. making sure there are comprehensible reasons for scores. The presentation prepared will eventually take about eight minutes with about 10 slides prepared to make the relevant points. There will be a run through of the first draft with Bank colleagues ultimately responsible for the presentation to MPC and the eventual publication of the Agents' views. There will also be a further run through in a Pre-pre-meeting at which each of the other departments also presenting rehearse their presentations. These meetings hone the message and explore and seek to account for any divergences or mixed messages.

Figure 1 also indicates what happens after pre-MPC in several private processes mostly attended only by the MPC members until a vote takes place, minutes supporting the vote are prepared and agreed and the Monetary Policy Report (MPR) is made public at a press conference. The cycle then starts again.

We studied these MPC processes via access to the public data and televised Treasury Select Committee meetings (at which MPC members explain their policy from time to time) and with additional one–to-one interviews with seven MPC members as well as attendance at Pre-MPC meetings, "hot topic" meetings, and pre MPC Agents' presentation run-throughs. We also talked to the staff involved. Additionally, we observed meetings where Agents represented the Bank, its role and policies at public meetings, sometimes accompanied by MPC members.

Focusing on the part played by the Agencies we accompanied them to about 150 of their *annual* business contact meetings and read and analysed the detailed reports they filed at the Bank. We were given access to the AER and ANS report preparation processes through which the Agency summarizes and synthesizes their collective findings. Each contact meeting that we observed also included some time for the Agent to answer questions about and explain the Bank's current position and policy in the context of the business concerned. Sometimes, the Agent completed a survey during the meeting or asked the contact to complete it afterwards.

The pre-MPC meetings we attended give some idea of the initial process through which the MPC assess the economic outlook, current economic conditions and particular "in focus" issues affecting the UK economy - such as trade protectionism or Brexit uncertainty. The material prepared for the pre-MPC forms part of the basis for the Monetary Policy Report. The meeting itself is a large and smoothly choreographed affair attended by well over 60 people from within the Bank (including

observers from Government departments and the statistics authority). As mentioned, different teams from the Bank's Monetary Analysis, International and Markets areas present their view on the questions, using what we think of as calculative devices and other cognitive prosthetics (PowerPoint, tables, and graphs) to *imagine*, despite the uncertainty which is very much present in these discussions and the eventual reports, where the economy is and is going (Beckert 2019).

The challenge for the decision-makers is obvious: how to become convinced where things are at the time of the meeting and where they seem likely to be at the policy-relevant two-to-three year horizon. Estimates of the trends that appear to be present for relevant variables (imports, exports, prices, wages, output, productivity, world interest rates, inflation expectations, etc.) and the possible influences on them (such as currency movements, trade wars, political or climate developments, etc.) are explored and debated.

As with any other time-series modelling, the various statistically based models presented to show trends to the MPC require them to make two fundamental judgements – a judgment about whether the data selected for the model is appropriate (data uncertainty) and a judgment about the underlying dynamic process driving the data (model uncertainty). In the case of estimating output and the way it is likely to develop, as measured by GDP for example, the official published data have the advantage of a long historical back-run and a large UK-wide statistical sample. However, they take time to collect and analyse and are very likely to be revised up or down in subsequent months. So, the way the economy is working is always open to debate. The various presenters will have chosen data and modelled it into the future for the meeting and the MPC members (who are independently responsible to parliament for their decisions) ask questions and offer opinions for comment. Observing the process, it is clear that there is a great deal of practised expertise deployed by the MPC members present at the meetings, details of which were confirmed when talking to them afterwards. They are all trying to tease out the uncertainties in the underlying model evolving about where the economy is and where it is going, with and without new policy intervention. The external MPC members bring an important diversity of thought to this process: they have different background expertise and draw on that and perhaps their own anecdotal sources of information or statistical models.

Of particular interest to our thesis, as we observed the MPC members and the staff try to address these knowledge gaps and uncertainties at pre-MPC, they would ask presenters to set out a narrative for the developments or give their view about what might be going on. Or, they would make statements based on their expertise to give their view of what best explained the observed developments. In other words, in our view, they were using tacit knowledge, intuition, locally-valid heuristics and presuppositions to work out causal dynamics relevant to what we thought of as *the most convincing story they could tell to each other and the public* about not just about what was happening,

but also why.[12]

The pre-MPC meeting is quite a large-scale meeting open to many staff inside the Bank. In the eight days that follow it MPC members told us that they have many more intimate opportunities to explore and converse about the questions raised (and perhaps others) and sometimes to dig into questions of current uncertainty such as whether productivity change is actually flat or just apparently so. One external member we interviewed drew attention to recent discussion of the practical problem of determining "equilibrium" rates of employment or other variables. He pointed us to public discussions of the difficulties by the Chair of the Federal Reserve Bank, referring to these equilibrium or "natural" rates as the "stars" by which monetary policy is supposed to navigate. As Governor Powell put it, "Navigating by the stars can sound straightforward. Guiding policy by the stars in practice, however, has been quite challenging of late because our best assessments of the location of the stars have been changing significantly" (Powell, 2018). The MPC is aware of and explores the local implications of widespread international debates about whether changes in the structure of the economy and the labour force have hidden information both about productivity and the labour market in ways that may confuse "knowing" whether inflationary pressures are present or not.[13]

Different MPC members have their own research methodologies and talk to each other and to the research assistants and other staff available. We did not observe these processes but gathered from talking to current and past MPC members that considerable effort is made to find what we think of as a convincing story. It seems statistical models in these discussions are *de facto* treated as heuristic tools – imaginative devices to be *played with* to work through debates and ideas as rigorously as possible. By the end and in the final formal meetings differences have to be articulated and as far as possible resolved – bearing in mind that each member makes an independent decision and is legally required to account to parliament for agreement or dissent. In any case, as they move at the end of the eight days to the decision meetings, it appears that what we think of as one or more core narratives of the future begin to gain traction and will be used to support their decision and form how it is formulated, supported and communicated.

As we have noted, the Bank's Agencies fit into the Bank's Monetary Analysis division as one of the areas that presents to the pre-MPC in each cycle. The Agencies' role has evolved over their

[12] As this paper was going to press Abolafia (2020) published an account of discussion at the Federal Reserve Bank in Washington based on the detailed FOMC transcripts made available at a lag. His work demonstrates our proposition, showing how a useful way of understanding what went on was that policy makers struggled over competing narratives to explain the events of 2007-8.

[13] Several years ago, a number of key figures began to state that central banking practice was different in implementation. Whereas the former must *de facto* accept radical uncertainty, the latter does not. For example, King (2005) made the point that "we need to think more carefully about the nature of decision-making in a complex world where the central bank and economic agents alike are learning about their environment" (p1). In the same year, Blinder and Reis (2005) recognized the constant need to form understanding of what is going on. As Blinder put it, "…workaday monetary policy", is highly situational and "remarkably flexible and adaptable to changing circumstances…with the central bank…constantly in "learning mode" "trying to puzzle out what is going on in an uncertain world".

existence but now has three functions in the implementation of monetary policy[14]:

1. To collect data on current business conditions to make up for lagged or "missing" data by providing real-time information –in narrative form supported via the Agents' scoring system.

2. To conduct surveys of their contacts (supplementary to other questionnaire surveys organized in other areas such as the Decision Maker's Panel or commercial surveys) to explore emerging issues, which the MPC wants to know more about. Examples are efforts to explore credit conditions, capacity utilisation, the housing market, Brexit readiness, productivity or changing employment practices.

3. To represent the Bank and its current policies (sometimes accompanied by MPC members) to business and the public in the contact meetings, in presentations and at Network events or Citizens Panels.

Beyond these well recognised functions, our observations and discussions with the Agents themselves, guided by our embryonic narrative theory orientation, suggest the particular leverage the Bank can gain from its Agents' work is perhaps still greater than presently fully recognised. The Agents' conversations with their contacts around their business plans and practices are inherently forward-looking. Consequently, as we will set out in the next section, what the Agents, uniquely, can provide to the MPC are live descriptions from economic actors of their current actions and future plans: describing the causality underlying what is happening and what is likely to happen, and why that is so. In contrast, official economic statistics provide an estimate of what has already happened and traditional economic modelling has tended to project forward by assuming past dynamics would continue to drive the present. Of course, other data sources, such as household and business surveys, can be forward looking and provide some information on causality. And economic analysis can go beyond simply projecting forward past dynamics, by varying its assumptions. Nonetheless, we contend that while surveys and analytic methods can certainly offer insights to the future, they are of a logically different order to insights drawn from direct knowledge of the plans of human agents.

4. Initial findings: The art of conversation providing added value?

As mentioned, we were able to attend about 150 meetings that Agents held with their contacts in the first half of 2019, to see how they write up and record these meetings and "scored them" and to observe the report preparation processes through which the Agencies summarize and synthesize their

[14] The Agents also support the Bank's other policy committees and other areas of the Bank. For a fuller description see for example, England, D, Hebden, A, Henderson, T and Pattle, T (2015) 'The Agencies and One Bank', Bank of England Quarterly Bulletin ; Eckersley, P and Webber, P (2003), 'The Bank's regional Agencies', Bank of England Quarterly Bulletin, Spring, pages 92–96; Relleen, J, Copple, D, Corder, M and Fawcett, N (2013), 'The Agents' company visit scores', Bank of England Quarterly Bulletin, Vol. 53, No. 1, pages 59–67; Belsham, T, Caunt, S and Duff, I (2012), 'Agents' Special Surveys since the start of the financial crisis', Bank of England Quarterly Bulletin, Vol. 52, No. 1,

collective findings for the MPC and the public. Our observations and understanding of this process suggest to us that although this data may appear anecdotal, the narrative information it provides is of unique importance to the MPC's implementation of monetary policy and could well become more so as the Bank evolves. Our principal conclusion, in fact, is that the intelligence provided by the Agents is crucial for the MPC process to be robust, given the need, discussed above, for an inflation targeting central bank to create both a credible and legible monetary policy narrative and to communicate it so that it actually influences economic behaviour so that the Bank's audiences, and wider UK publics carry out the policy. In this section we will illustrate how we think the Agencies add to other data sources and why we think their conversations with their contacts are more than mere anecdote. We will argue they provide information that is in fact unique to the purpose of an inflation-targeting central bank, in two respects:

1. **Help with causality:** The Bank captures forward-looking plans through the Agents' conversations with their contacts around their business practices and intentions. Their contacts make the future with these plans and so incorporate the dynamics driving the economy.
2. **Help with knowledge of the narratives** through which the MPC narrative will be interpreted and evaluated. Conversations with contacts provide knowledge of how businesses are thinking (their ways of understanding the economy or their explanatory models). Such knowledge is essential for the successful shared understanding (Tuckett et al, 1985) necessary if the expert view reached by the MPC is to be crafted into a narrative which creates both the understanding and commitment required by the publics who must actually deliver their policy.

The meetings between Agents and their contacts are set up annually to capture two sorts of data: their pricing, employment requirements, wages and output (etc.) over the previous year and their plans going forward. As noted these meeting are conversations (often between people who know and respect each other and are extremely knowledgeable about how the relevant part of the economy works in that locality). Because they are conversations rather than highly structured interviews, there are opportunities for spontaneous remarks and "digressions" for the skilled Agent to husband. The contacts are often influential figures in their firms and they are actively engaged in making the future through their business plans and their day-to-day experience of economic realities and those of others around them. Uniquely, therefore, our observations suggest, what the contact meetings permit in an atmosphere of personal trust and past relating, is easy access to senior business people as they "make" the economy and the Bank's policies actually happen, or not. In the conversations, the experienced Agent's on-the-ground intellectual acumen added to what they are being told gives on the ground insights into motives, plans, feelings, changes, adjustments and any other observable features which

evoke the Agent's flexible engagement.[15]

In other words, through their conversations the Agents access and intuit stories about the dynamic evolution of business plans making the future economy and the forces driving them. Like narratives generally, these stories embed causality. So, they reveal plans being created and then their unfolding with success or failure, for one apparent reason or another**.** Also, uniquely, it seems digressions within these conversations, when their contacts share insights into what is changing in what they or others are doing and why, are particularly likely to reveal such development.

Bearing in mind the need for discretion about these private conversations about businesses here is one example, described in some detail, of the kinds of insights we saw the Agents develop in meetings with the several contacts who run large recruitment agencies. In slightly different ways meetings with such contacts revealed an extraordinarily rich epistemic network for information gathering, way beyond the annual statistics the firm would also provide to the Agent. The conversations would fill in vast amounts of contextual information for the kind of labour market statistical series to which the MPC have direct access.

Such agencies recruit worldwide for companies and other organizations which operate for profit or not and which are household names and so major players in the success or failure of the economy. They work across multiple sectors and maintain relationships both with those they place and those that they recruit for. So, across sectors like accountancy and finance, banking and capital markets, call centres, construction and property, consultancy, strategy, change consultants, education and teaching, energy, engineering, executive services, financial services, healthcare, insurance, human resources, the legal sector, software development, life sciences, transport, etc., their finger is on the pulse. What's new? What skills are in demand and which in decline? As they work across locations (i.e. UK regions) and borders (i.e. internationally) and have access to very large candidate databases and receive massive numbers of applications, this information extends widely and is easily analysed.

In this way, intuitively and intelligently guided conversation with such contacts (who themselves, as they become familiar over several years may also volunteer relevant insights) provide an incredibly nuanced picture of global employment trends (including issues of cross border recruitment and wage and salary competition) resting on the work of thousands of their own employees. Quick fine-grained assessments of the employment situation in major cities are available – the skills and qualifications in demand; where jobs are abundant (and not); where salaries and fringe benefits are on offer. Moreover, via their network of recruiters they can give information on shifts in the values and expectations of workers – their job is to be alert to lifestyle issues determining job preferences and career expectations

[15] Many contacts in expectation of the meeting produced statistical handouts with the clear aim of minimising the time on such details and with the advantage the Agent could use them to prompt questions about why and how.

as well as to have basic insights into how candidates evaluate potential employers along with their locations, cultures, and work environments. To stress, in every day conversations with employees and employers (their traditional clientele) such CEO's have both sides of the story – what employers are looking for across sectors, regions, and industries and what attracts employees. They know what challenges and uncertainties are faced, not just in terms of recruiting and retaining employees, but also adjusting to technical transformations in the nature of work and to the shifting relationship to their employees that new technologies require.

And moreover, developments in their own businesses are informative. They are innovating and responding to innovative development along with everyone else. So, for instance, rather than seeing the employer as their primary client as would once have been the case, contemporary recruitment agencies increasingly see the employee as filling a continuing relationship with the (recruiting) firm. Using new technologies and apps they organize to serve an enormous client-base composed of people with diverse qualifications and backgrounds across numerous industries and locales. Their role today is to orchestrate the work careers of these clients; to assist them in developing their skills, experience, and expertise and to continually provide them with new and challenging career possibilities. Because there may now be an enduring relationship of the individual with the agency, rather than a particular employer (based on technology and increasing acceptance by workers of the advantages that accrue to them if they seek an ongoing series of relatively short-term assignments) they sense change.

In summary, contacts like these, are an example of an enormously detailed and nuanced network able to provide an account of the working of current labour markets, and in close to real time. Listening to such contacts, and noticing shifts year in years, produces testable hypotheses about profound transformations in the nature of work and the expectations of workers, including their expectations of "pay". In this way they provide real-time signals about the kind of economy that is developing and its potential response to policy.

Meetings with senior staff in legal firms, accountants and construction companies are other examples of contacts who through knowledge of their own business could say much about what was happening in other economic sectors – who is building what, whether insolvency is increasing or decreasing, who is setting up or buying companies or contracts, etc. In other contact meetings we found many more examples of nuggets of contextualised information raising live questions for Agents to pursue:

- Owners of retail parks able to sketch ideas about new retail centre models providing services rather than physical goods.
- Infrastructure companies struggling to raise foreign investment post Brexit.
- Firms with their HQ overseas reporting frozen investment and their reasoning (Brexit).

- Capital goods production companies commenting on the state of their order book which typically forewarns about the state of the capital cycle.

- A company reorganizing its corporate structure to have UK and European divisions and then investing in new factories in two European countries – all in anticipation of gaining European contacts and fulfilling them from outside the UK, if Brexit should happen.

- A construction company reporting the different kinds of structures they are building for what sorts of companies and so able to suggest which sectors were expanding and what sort of economic activity was in trouble.

- Consultants able to describe changes in industry margins and other developments, including how far companies were taking advantage of opportunities to manage food waste more sustainably and increases/decreases in foreign visitors influencing demand.

- The CEO of a transport company able to describe the consequences of exchange rate variations and potential immigration policies on the supply of skilled labour as well as the implications of cuts in local government subsidy on regional transport and the implications for future work and investment in particular localities.

- Companies reporting shifts in the availability of immigrant labour – for example from countries from which workers are highly skilled to ones where they will need much more training and receive lower wages.

- A large food-packing company responding to (perceived by management) migrant worker discomfort following the Brexit vote by providing social benefits to increase the sense of belonging to the firm.

- A specialist capital equipment company overcoming skill shortage by recruiting less skilled staff and training them on the job.

Such examples illustrate how in the contact meetings questions about *shifts* in the way the economy is behaving (being "made" by the contacts) emerge. Data series by their nature give an overall and somewhat abstract picture and so necessarily evoke uncertainty about causality. In contrast, contacts offer contextualised accounts and explanations that provide potential alerts, intuitions and hypotheses about the specific causal dynamics influencing parts of the macroeconomy. The detail alerts to which shortages, costs or policies are influencing contacts' plans in which directions and to which agile solutions they are finding to improvise. It offers answers to why are they investing or not and in what? Where do they get the capital? Why are they adding or reducing staffing levels, how are they grappling with new regulations, how are they adapting to shifting market realities? How do they

assess current competitive conditions, and so on?

The crucial point is that the decision-making processes routinely described in contact meetings are all cast *prospectively*, providing the MPC with access to the *planning* processes in firms, broadly conceived, that animate these businesses and other organizations minute to minute, hour to hour. In our conversations with one of the Agents, they were explicit on this point, insisting on the term *Causality* as at the heart of what the meetings with contacts are about and therefore are a unique source that is not otherwise available to the MPC in any systematic way. This was also clear in hearing a draft pre-MPC presentation by the Agent responsible. Having chosen to focus on judgements the Agents were making about increasing slack (lower capital utilisation) and signs of pressure on profit margins, they made a point of asking and then answering why[16] - pointing to reports from contacts in Business Services, such as the recruitment agencies just mentioned, rather than Manufacturing and Construction with which the MPC was already very familiar[17].

In summary, because of their carefully nurtured relationships and ability to converse and to use their intuition, Agents gain access to the cutting-edge plans that contacts are developing (real-time, real people with forward looking expectations). This is a unique source, able to capture, close to contemporaneous, innovation and causality in the economy – framed through narrative, socially mediated stories about what is happening and how it is managed all of which can give meaning to data series.

5. Epistemic Tension

It was widely recognised among those we met at the Bank that the Agents' intelligence can often help to provide understanding of the underlying drivers of economic developments – as a way to understand the behaviours behind what was thought of as "hard" data, or to help resolve puzzles in that information. Some members of the MPC also valued their visits with the Agents as a source for anecdotes – to provide concrete instances of certain behaviours they might believe are at work behind macro phenomena, much like the anecdotes they themselves may have available in their own everyday experience. (This use is similar to what is observed among some asset managers (Tuckett, 2011).)

However, although valued in these ways, and also used for other purposes throughout the Bank, our discussions with MPC members suggested that the conversational data produced by the Agencies, which is sometimes referred to within the Bank as "anecdotal", can still be viewed ambivalently. While there seemed to be near unanimous agreement among MPC members and others we met at the

[16] Placed in capital letters "WHY" in the draft presentation slides.
[17] "the business services slowdown is something slightly new. I wanted to tell them a bit about that, and in particular that it's in recruitment consultants, which I thought was interesting. It would suggest the labour market has turned a little bit, which is significant…"

Bank that the Agencies' intelligence gathering activity is useful, when asked precisely for what it was useful opinions seemed to vary, as did the weight that individuals seemed to be prepared to apply to it, compared to other data sources.

It seems to us there may be an interesting kind of epistemic tension in the way conversational data is viewed in the Bank deriving from an implicit theoretical framing of what counts as "knowledge" in economics. What is the relevant data for understanding an economy? Is qualitative data reliable or merely anecdotal? Is interview data "just" subjective? Are surveys with sampling and fixed form questions more objective? What is the value of "Talk"?

Such questions are addressed much less frequently in modern economics than they were before Friedman's successful arguments – particularly his argument as to why what economic agents "said" would not necessarily be informative and his argument that economic decision-making could be analysed without paying much attention to Knightian uncertainty (Friedman, 1976 p272). Since then economics has become a mainly deductive science. Hypothesis testing and inference is mostly restricted either to econometric modelling of very large data series or behavioural experiments set up in controlled conditions. Discussions about the epistemology of measurement that take place in other sciences or of the relevance of data from the "wild" accumulated by economists rarely intrudes into modern economic training[18].

Our point is that presently the kind of data generated by the Agents, being qualitative and apparently anecdotal, much as the data used in anthropology or other social science, may fit a little uneasily into the prevailing academic, theoretical framework, from which practice has actually departed significantly.

As we showed above, currently the Agencies respond to the challenge of drawing inferences both by putting a great deal of effort into sampling different kinds of enterprises to represent the economy, by developing, particularly since 2007, a "scoring" system and by the rigorous peer review synthesis process that is put into the regular production of the Agents' Economic Reports (AERs) and Agents' National Summary (ANS). Additionally, the Agencies will conduct more formal surveys, using standard questions, to investigate hypotheses of interest. We will now discuss the inferential issues involved in each of these methods.

First, the scores. As noted earlier, since 2007 Agents have sought to score company visits, against *changes* in a range of variables (compensating for seasons and other factors) such as turnover, output, investment intention, different costs, prices, and employment intentions. (Profit margins, capacity utilization and credit conditions are scored compared to normal conditions.) These scores are

[18] Bewley (1999) is an exception. Also, Blanchflower (2019), a former MPC member, has argued polemically for an economics of "Walking about".

eventually published, in a sectoral aggregates database, with a lag.

The initial aim in undertaking the company visit scores (CVS) was to help Agents marshal qualitative intelligence "more systematically" (Relleen et al, 2013) and to improve the accuracy of the existing Summary Scores, summarising each Agency's view of the UK-wide changes in key economic variables. The Summary Scores are produced for each Agents' Economic Report and published as UK aggregates alongside the regular Agents' Summary of Business Conditions.

When assigning CVS, Agents are supposed to draw on a range of information, both qualitative and quantitative, from the interview about recent activity as well as gauging the company's expectations for the future. The benefit of face-to-face meetings has been clearly recognized. "...they provide scope for dialogue and clarification of the information reported" and are recognized as subject to "a considerable element of judgement involved" leading to the caveat that consequently "Although the Agents make every effort to ensure consistency in their approach it remains possible, or even likely, that information is interpreted differently by different Agents" (Relleen et al, 2013). The Agents have a small scale, ongoing and somewhat informal inter-rater reliability exercise in progress, designed to standardize rating principles.

Second, the synthesis procedure, through which the ANS and ASBC are produced by the Agents, with an editor-in-charge by rotation. It is a very large and time-pressurized data reduction process which starts with the team in each region. Each team looks over the reports from the last meetings, considers the potential for distorting factors (such as season, special factors or the distribution of sector visits in that period) and looks out for "the story" – this is the term volunteered on several occasions. On this basis they provide summary scores for all the same variables as they do for company visits for their region *and are supposed to give their reasons for each rating*. Ratings score what is subjectively assessed to be changing – whether the different things seem to be stable or moving up or down in potentially inflationary directions and are meant to be judgments with justification. The next step is that someone in the Bank cuts and pastes all the regional reports together and creates an average score, weighted by the size of each region in the economy (GVA), for the economy as a whole. It is these scores that are published and are now a data series. As mentioned, two Agents then take charge of the peer reviewed process. One marshals Agency colleagues to turn 80-90 pages into a six page a summary, which becomes the Agents National Summary. The other analyses the same data but interprets it to prepare a presentation of (what were referred to as) the main narratives emerging of relevance to the MPC. At each stage there is challenge and comment.

The peer review of the ANS we observed to take place in the production of these narratives is quite robust as is the process of arriving at a clear narrative presentation of the narratives supported by argument. So, in the "huddle" call that takes place after the regional reports have first been combined Agents challenge each other. What's the evidence for that? You have got a score for your region but

where is the justification? We don't see that here, etc. Drafts are shared and commented in a similar way. The compiling and presenting Agents make their judgements, guided in a significant way by the scores which are used as heuristic signals, and anticipate having to support their views at the various practice presentations and eventually at the pre-MPC meeting. Their colleagues in the Agency who have compiled the regional reports are there to challenge the national report and require reasons for its judgments. The process has evolved to be quite rigorous within the time.

At the meetings where the presentation was rehearsed it was noticeable that those present avoided role-confusion. So, the comments of those coordinating MPC presentations or bringing them to publication, focused not on the Agents' judgment (the direction of which those helping with the presentation did not try to influence) but on the need to provide a well-argued and comprehensible narrative that would be easily understood by the MPC. Suggestions were aiming at trying to highlight *not* trying to influence the Agent's judgment or conclusions.

In our view, while it might be tightened, experimented with and aided by social science tools as well as, perhaps, machine learning or attention to emotional tone, the peer review synthesis process, which aims to derive structure by reduction from a very large amount of "qualitative" story data, faithfully and effectively follows the basic argumentative principles that humans generally have developed for reaching social group consensus (Mercier and Sperber, 2017). The same principles, more formalised, constitute the standard methods of hypothesis generation and testing used in qualitative analysis in anthropology and social science. Such methodologies are established within the social sciences as effective for the study of complex data and, in fact, there is growing doubt about the value of formal methods if they are applied to complex and uncertain contexts in their idealised "small world" forms (see also Kay and King, 2020). As the German mathematician, Jurgen Jost, has pointed out when discussing mathematical and machine learning methods of data reduction in conditions of real-world uncertainty and noise, "Humans are quite good at that, and often better than scientific theories allow them to be even if they have obvious limitations" (Jost and Ehrig, 2019). The limitations Jost and Ehrig have in mind are those caused by factors like groupthink or institutional structures which may inhibit appropriate sampling or the expression of diversity and difference. As they argue, recognising such limitations does not require surrender. Rather it provides the opportunity to design processes to overcome them. Certainly, the eventual outcome of the synthesis process seems to us something that can be considered rigorous rather than anecdotal. In effect, the Agency follows the kind of processes that have been developed for reaching consensus in science – judgment, statement, counter-argument, evidence, debate.

Third, the Agencies will conduct more formal short surveys, using standard questions, to investigate hypotheses of interest. These surveys allow the MPC to gain a rapid snap-shot of a particular area of economic interest (for example, the outlook for wage growth or investment intentions). Information

from these surveys is presented to the MPC by an Agent, and summarised in a note, following a peer review process similar to that described above for the broader Agencies' narrative. Results from the surveys are published alongside the Agents' Summary of Business Conditions and within the Monetary Policy Report. Surveys are targeted at a broad range of Agency contacts through a variety of channels (e-mail, on-line forms, hard-copy at meetings). In most cases, surveys are completed and returned separately from contact visits, to avoid crowding out those meetings. When Agents complete standardised surveys with their contacts inside their 60-minute conversations – as opposed to sending it ahead or asking for it to be sent back later - that can intrude into and interfere with the conversational data that we have been arguing are uniquely valuable.

The Agents' surveys provide a valuable quick-read for the MPC on a topic of interest. For example, they played an important role in informing the policy debate in the run up to Brexit, by summarising firms' evolving expectations and contingency plans. However, by their nature, standardized questionnaire methodologies are a rough-edged sword. Their methodological advantage is the apparent removal of observer bias – each respondent is asked precisely the same questions and their answers are scored numerically against a pre-coded scheme. But this very strength has been recognised as a weakness for nearly fifty years in epidemiology and social science if the questionnaire context contains meaningful uncertainty (Richardson et al, 1965; Brown and Harris, 1978, Tuckett, 2012). Asking the same questions of business people with very different businesses in different situations can require precisely the kind of interpretation and finessing of questions and responses that is in conflict with the methodological aim. More importantly, when surveys are occasionally undertaken at meetings, rigid ways of structuring conversations appears to reduce some interviewee's motivation and by taking up time and changing interview dynamics, reduce the scope for digression and elaboration of meaning.

As the contact meetings with the Agents continue to develop as a data source for the MPC, it may be possible to enhance the different processes and select the data collection methods best suited to the questions at issue. For the time being our intention in highlighting the epistemic tension – which is a specific case of a more general tension in economics between observation and talk data versus statistical data and deductive argument – is to promote further discussion and research. There is a wide scope for experiment into different ways of collecting and using conversational data.

6. Help with the Narrative

We have argued that the Bank's Agencies produce uniquely useful data to provide help with causality and that these data are not merely anecdotal. The peer review process of Agent judgments might be improvable but already in place, it appears in our view to provide as reliable and valid data about the economic future as any other data the MPC has to consider in the uncertain world it inhabits. It is unique because Agents' conversations with their contacts around their business plans and practices are

inherently forward-looking and their contacts make the future with their plans and so incorporate the dynamics driving the economy.

We now want briefly to outline a second argument, namely that the Agent data is uniquely vital to the MPC's second task, its communication imperative; the requirement that it establish and maintain an ongoing narrative which sets out and explains where the economy is and how it can coordinate without producing significant inflationary (or deflationary) pressure and the necessity for Bank intervention.

Conversations with contacts provide knowledge of how businesses are thinking (that is their ways of understanding and explaining the current functioning of the economy). Study of expert and lay communication, for example between doctors and patients, emphasise it is a dialogic rather than a one-way task. So, communicators, for example medical doctors or Bank officials, have a model, an explanatory model of how the human body or the economy works and how their actions will affect it. But so do patients and the economic actors the Bank hopes will respond to the Bank's "talk"[19]. Successful communication requires their mutual articulation and exchange.

Knowing how those to whom you wish to communicate think and providing them with a chance to work through their understanding, if their models or beliefs are different, is essential for successful shared understanding (see Tuckett et al, 1985). It follows, therefore, that to communicate the expert view reached by the MPC it needs to be crafted into a narrative able to create both understanding and commitment – it is the public who must be committed to deliver the policy. If that is to work, the MPC requires "knowledge" both to diagnose the situation in the economy (analogously to diagnosing the patient's illness) and to become informed about the models people use to support their actions. It is through their thoughts and explanatory models that economic actors, just like patients (see also, Kleinman and Benson, 2006), filter what is communicated to them and understand it successfully as well as come to believe in it.

Opportunity for shared dialogical understanding is precisely what the Agency system potentially provides, and going forward could usefully be explored as an area to receive more systematic attention. To date the Agencies have mostly focused on gaining intelligence on the economic situation and communicating the MPC's view, rather than on, first, gaining understanding of people's explanatory models and, second, trying to integrate them with the specialist explanatory models underlying the Bank's views. For the moment we simply assert that a group like the Agencies appears to have a critical dual role within an inflation targeting central bank which, supported by Narrative

19 "Using talk to influence expectations was always at the heart of inflation targeting, and in my 2005 speech I talked about this in the context of why inflation targeting was not a mechanical approach but a holistic approach to convince people that inflation would never be allowed to get out of control again". (King, 2020), personal communication.

Theory, might be more fully developed. The Agencies are at the interface between the causal narratives driving the economy, which they can report accurately to the MPC, and then (along with others) at the heart of the communication effort coordinating the policy narrative back to the field, to diverse segments and strata of the public[20].

To avoid misunderstanding we must stress here that it is not open to the central bank to select any narrative – as Lucas and others pointed out trickery can't last for long. As we argued above, persuasive conviction narratives work only if they have a reputation for accuracy and the narratives participants have in their local contexts (resting on local ideas, heuristics, understandings, observations, etc.) are aligned with the ones coming from the Bank. That outcome requires that the narrative crafted at MPC fits with the explanations and narratives already in the economy, is plausible and is perceived as accurate by those making the economy.

From this perspective the reputation and success of the Bank depends on the kind of hard work the MPC carries out. In this labour, as Holmes (2014) calls it, the Bank needs the Agencies to be agile, sensitive and diverse – knowing which new stories may be coming up or which new concerns are identified is vital. Therefore, in the process through which information reaches the MPC and in the way it processes knowledge staff must have the confidence to risk to diverge. A risk is that the conceptual framing of rational expectations may prevent a central bank from catching unimagined change, which by its nature starts as weak signals in the form of new narratives.

Summary and Conclusion

This paper makes an initial foray into the practice of modern monetary policy to explore how the existing macroeconomic theory on which it is based can be augmented by considering the fact that policy *must* take place in a context of radical uncertainty. We have argued that in those circumstances what is known outside economics about economic action and collecting and analysing data from the people who perform the economy has added value.

Approaching these issues through the lens of ideas from social and psychological science, we have introduced the concept of narrative, differentiating it from its use in behavioural economics, to emphasise the theoretical role narratives are thought to play in other disciplines – most particularly in generating actionable knowledge in conditions of (Knightian) uncertainty (Tuckett and Nikolic, 2018).

We have argued that the conversations that the Bank of England's Agencies collect from their 9,000

[20] Note, the process being discussed here has a parallel with the challenge faced by governments and central banks in the COVID19 crisis. First, they have needed to create a message to get the public to "stay home" and are now exploring how to get the economy back. In both cases policy requires a public "conviction" narrative and has to manage the many alternate expert and lay theories and explanations that might make the message ineffective and lead to lack of "compliance".

contacts in the regions, can be treated as actionable knowledge about the way the economy is currently being performed. Here we may need to clarify, in the space available rather superficially, that we make a distinction between data (digits), information (data with theoretically defined meaning) and intelligence or knowledge (data about the model driving outcomes) not typically made in economics. The Bank's Agents have (potential) knowledge about the plans making the future. The claim rests on the idea that agents in the economy are dynamically innovating and interacting with each other on the basis of shareable conviction narratives they act on about the likely success or failure of their operations. Their own beliefs and actions constantly and sometimes rapidly produce new practices and new consequences. As we saw in 2008, narratives about the world, which are cognitive and affective entities which support action, can change very rapidly and much quicker than the world itself. At present, for instance, the Agencies have lots of detailed local knowledge and developing hypotheses from their contacts as to how far, so far, business productivity is or is not being advanced through new information technology, not to mention vital information about how businesses are responding to the COVID19 crisis.

The "knowledge" we think derives from the Agencies' conversations is the outcome of processes of refining and peer review challenging qualitative text data to test its reliability and validity, which have a long history in social and psychological science but are mostly new to economics, if not to central banking. Central bankers of course have long been holding conversations with key players in finance and industry. The influence of such conversations are very likely considerable, if not formalised. What we want to stress, therefore, is that it could be valuable to resolve the epistemic tension we have identified. Although any data can be "biased" or used strategically to forward an interest or to try to obtain personal advantage in a pecking order, whether this is so and more generally what data is useful for what are empirical questions. Our observation is that the Agency data is already much than mere anecdote and has a significant role to play inside a multi-method system of monetary analysis. On the one hand, the conversations provide help with understanding causality – the current dynamics of the economy and ways its structure and direction may be changing. On the other hand, the conversations provide insights into how economic agents understand and comprehend the economy they are creating, insights that are vital to crafting the MPC's communications as a legible and credible Conviction Narrative tenable for the public to understand and commit to enacting its policy.

As we have noted, the Agents' data are used inside the Bank for a variety of purposes. We have stressed how the processes the Agencies use to collect and analyse the data are rigorous. However, by applying Narrative Theory to this data, we have suggested they could be evolved and used further in several directions. On the data collection side, framing the activity narratively might add focus and create opportunities to search out beliefs, changing stories and affects, both about the contacts activity and their receipt of the Bank's narrative message, as data valuable in themselves. Analysis using machine learning and algorithmic techniques might be able to exploit the information in this data.

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