



ECONOMY OF WORDS

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The central banks that I have studied typically have museums attached to them. I have a particular fondness for the Geldmuseum of the Deutsche Bundesbank in Frankfurt with its handsome curation of the history of coinage and banknotes along with elegantly designed exhibits that explain the nature of money and the operation of central banks. A colleague at the Bundesbank suggested that on my next visit to the museum I should try an interactive display that simulated the role of a central banker illustrating how monetary policy influences the economy over time. I followed his advice.

The simulation was ingenious. It provided a careful explanation of the policy tools available to central banks—basically the manipulation of short-term interest rates that determined the availability of money and credit to the German economy—and how these monetary interventions are meant to work along with the contingencies and the constraints associated with each policy move. Then it presented a series of economic scenarios and asked you, in the role of the central banker, to select an appropriate policy stance. What made the simulation particularly intriguing (and rankling) was that as the simulation played out over time the implications of each of your prior decisions was transmitted to the German economy. Thus, at each subsequent stage of the simulation you were compelled to take a policy stance that responded to new conditions in the economy—specifically price inflation and economic growth—that you had a hand in creating. Apart from evoking mild mortification, the simulation demonstrated even on this very elementary level the complexities faced by central bankers in their role in stabilizing

the economy and thus fostering balanced growth while restraining inflation. Fortunately on the late July afternoon in 2007 I was the only person in the museum and the damage I inflicted on the German economy by my “overmanipulation of monetary levers” remains a secret.

As I lingered in the museum a crisis was taking shape that would test the authority of the major central banks of the world and the intellectual regime that informs contemporary practices of monetary policy. An era marked by moderation in prices that commenced in the early 1980s was in doubt in the summer of 2007 (Abolafia 2004, 2005; Cecchetti 2008). A crisis—fully global in its reach—was unfolding manifest initially as a “mispricing of risk” of obscure mortgage-backed instruments, which was intensified by a deflating of the housing bubble in the United States (and elsewhere), and the rising prices of commodities, notably of food and of fuel. As the crisis deepened commodity and asset prices collapsed and consumption faltered in the face of an acute credit crunch. By mid-2008 the staggering imbalances in the global economy that had developed over the prior decade had begun to undergo a convulsive rebalancing.

I became interested in central banks in the early 1990s, at the time of the drafting the Treaty of Maastricht creating the European Union (1992). I was struck by the few paragraphs of the Treaty that proposed the creation of a monetary authority to manage a new and, at the time, unnamed currency. This goal of European Monetary Union, arguably the most radical agenda of the Treaty, had by 1999 yielded a new institution, the European Central Bank (ECB), charged with managing monetary affairs of what became known as the “euro” (Shore 2000). My interest in the ECB and the Deutsche Bundesbank, which is now an integral part of the ECB, has since expanded to include the Reserve Bank of New Zealand (RBNZ) and, more recently, the Swedish Riksbank. In the background of the study is an ongoing assessment of the policies and practices of the U.S. Federal Reserve System and of the Bank of England.

Early in this decade I focused the research on key elements of what Alan Blinder (2004) has described as the “quiet revolution” in central banking investigating how these institutions have pursued a series of far-reaching “experiments” in monetary policy conferring a distinctive communicative dynamic on the practices of central banking. Broadly, my argument is that these communicative imperatives underwrite a political economy—susceptible to ethnographic analysis—that gains expression in the idiom of monetary economics and the patois of finance. My research thus predates the current financial situation; that said, the key issues at stake in project were unexpectedly amplified and ratified by these exigent circumstances in ways

that my subjects or I could not have foreseen. The technocratic innovations that impelled the revolution were recast as the basis for contextualizing the tumultuous conditions analytically and the formulation of policy to influence the severity, the breadth, and the duration of the destructive storm (Habermas 1987a, 1987b, 1991).

The first part of this essay lays out the conceptual basis for what I am terming herein “the economy of words,” particularly its relationship to the intellectual framework inspired by J. M. Keynes. I look specifically at the role of expectations in shaping the future course of consumer prices and how this preoccupation established distinctive communicative imperatives within central banks (Keynes 2007). This discussion coincides with my efforts to demonstrate how innovations in the practice of monetary policy represent the most decisive and convincing demonstration of the “performative thesis” proposed by Michel Callon (2007; see also Latour 1987).

The second part examines how the economy of words operates within the RBNZ as a linguistic and hence communicative means for modeling economic phenomena operating at the limits of calculation and measurement. In this economy “at large” or “in the wild,” words perform the decisive function of creating context—countless contexts—that frame data series, statistical measures, and econometric projections (Callon 2007). The RBNZ serves as a key example insofar as its personnel developed the experimental principles and practices that have come to inform this policy regime. This essay thus seeks to demonstrate how—through the technical mediation of an economy of words—a monetary regime has come to be endowed with reflexive voices (Soros 1994, 2008).

I further demonstrate how “ethnographic” modalities operate within these technocratic settings, settings in which the “subjects” themselves experiment creatively with the intellectual exigencies of ethnography. To achieve this I have built, as it were, my ethnographic experiment within preexisting or emerging experiments in monetary policy permitting analyses to unfold simultaneously from the perspective and in the language of participants—central bankers—as well as on our terms, that is, in a language recognizable, if not entirely familiar, to anthropologists. This is the aim of and for a refunctioning of ethnography that George Marcus and I have advocated (Holmes and Marcus 2005, 2006, 2008; Marcus 2007, 2008; Westbrook 2008).

EXPERIMENTATION AT THE LIMITS OF CALCULATION

Michel Callon and his colleagues have argued that economic theory is the means for creating economic phenomena and regulating economic behavior, rather

than merely tools for representing or analyzing them. To pursue this insight I introduce the notion of an economy of words as the means and medium through which this kind creative labor is articulated and thereby enacted.

Let me give an example. Jean-Claude Trichet, president of the ECB, noted recently, "All in all, the art of central banking involves finding a fine balance between action and words in order to react to changing market expectations" (2005:12). I want to make a modest emendation to Trichet's appraisal, one that he and most other central bankers would no doubt agree with, and insist that words are action, communicative action that is essential for the operation of central banks. When President Trichet speaks, he is not merely expressing an interpretative account or commentary; he is making the economy itself as a communicative field and as an empirical fact (Fligstein and Mara-Drita 1996; Holmes 2000, 2009; McNamara 1998; Poovey 1998). An integrated, European economy is thus being configured and reconfigured in part through the communicative practices of President Trichet and other senior officials of the ECB as they seek to shape the expectations that impel the most fundamental dynamic of market economies: the evolution of prices (Callon and Caliskan 2005; Fligstein 2001).

I have aligned this essay with an academic literature, which has sought to take insights drawn from science studies and to recast them for the purposes of bridging the reflexive and the performative dynamics of economic ideas.

Michel Callon, whose work is grounded in the field of science studies, proposed elucidating explicitly the performative character of economics; that is, he proposes considering economics not as a form of knowledge that depicts an already existing state of affairs but as a set of instruments and practices that contribute to the construction of economic settings, actors, and institutions. . . . In Callon's words, "economics . . . performs, shapes, and formats the economy, rather than observing how it functions." [MacKenzie et al. 2007:3–4]

Echoing Trichet, they further note, "It is this kind of interweaving of 'words' and 'action'—of representations and interventions—that the concept of 'performativity' is designed to capture" (MacKenzie et al. 2007:5). To engage these reflexive and the performative dynamics I address the nature of economic phenomena operating at the limits of calculation and measurement.

The economy of words operates in our world, where *ceteris paribus* does not necessarily obtain, where the rational and the irrational coexist or may be entirely inseparable, where knowledge is imperfect, and where information is

asymmetrical, and experience and intuition can or must inform judgment (Fischer 2007:7; Fortun 2003; Zaloom 2006). The shifting and fugitive dynamics of global markets, their operation from innumerable perspectives is made available to us through the intermediation of language, through agile linguistic scenarios that are susceptible to continuous modification and elaboration. The economy of words is by no means indifferent or antagonistic to the realm of numbers, far from it; its analytical modalities are in the first instance shaped by the analytical predicaments posed by various forms of statistical measurement and quantitative analysis (Callon and Law 2005; Lépinay 2007; Lee and LiPuma 2002; MacKenzie 2001, 2003; Porter 1995; Zaloom 2003).

ECB President Trichet provided a glimpse of the intellectual dilemma facing central banks at the limits of calculation as they seek to operate within a dynamic analytical field that is in part their own creation yet in profound ways beyond their control. Trichet recently addressed why under these conditions words matter:

Because the economy is never at rest: agents have to catch up with the continuous change in their environment. When shocks [unanticipated events such as wars, natural disaster, sudden shifts in commodity prices, financial crises and so on] are moderate, or the underlying evolution of the economic structure proceeds at a slow pace, imperfect information and learning do not excessively complicate our interactions with the private sector. But there are times in which stormy perturbations and accelerated structural change make uncertainty more acute. These are times in which a perpetual process of learning on the part of economic actors can have implications for the overall stability of the system—to some extent independent of the monetary policy regime that is in place. If agents do not possess rational expectations, but have to re-estimate continuously the coefficients of an unknown model of the economy, using rolling windows of new observations, it can well happen that a shock of sufficient serious magnitude can unsettle expectations, even under credible monetary institutions. [2005:11–12]

Economic actors can at times be unruly; they can learn about the world and act on it with little regard for monetary authorities or economic theory. Their expectancy can succumb to the irrational, their sentiment can become inflected, as J. M. Keynes noted, with all too human “animal instincts.” The challenge for central banks is to discipline expectations with persuasive narratives, informed by a continuous stream of data and analyses, articulated in a measured and consistent fashion. To address this challenge these institutions cultivate an experimental ethos

focused not on the lab, but performed in situ, within and across the economy at large.

These experimental activities are research activities in the sense that they aim at observing and representing economic objects, but also—and quite explicitly—in the sense that they seek to intervene on these economic objects: to seize them, to modify and then stabilize them, to produce them in some specific manner. To experiment is to attempt to solve a problem by organizing trials that lead to outcomes that are assessed and taken as starting points for further action. Experimentation is action and reflection. [Muisesa and Callon 2007:163]

The experimental ethos that operates within these settings has a relentless character; analytical insights are in motion, they are continuously refined to address the shifting nature of markets and economic phenomena. This ethos thus presumes economic fields populated by reflexive subjects (Knorr Cetina 1999; Latour 1987).

This ethos is manifest most persuasively in an unfolding experiment whereby skillfully composed narratives—Alan Blinder and Ricardo Reis (2005:5) term them “econometric allegories”—serve as an analytical bridges to the near future, as instruments for determining economic activity by recasting historical data to project economic conditions prospectively. These carefully calibrated communications informed by a keen technical acumen and formulated by a small group of individuals working within central banks are, however, not merely projections of economic activity in the future, they are themselves instruments for shaping and defining that future (Riles 2006).

This is an ethnographic account, not of a central bank or of central banking *per se*, but of how famously secretive institutions—institutions that were in some notable cases committed well into the 1990s to a mystique of secrecy as vital to their function—began to experiment with far-reaching communicative practices under the aegis of transparency (Blinder 1998, 2004; Blinder et al. 2008). Public statements are now viewed as essential to central bank operation as a major practitioner drily noted: “informing the public about the central bank’s objectives, plans, and outlook can affect behavior and macroeconomic outcomes” (Bernanke 2007). Crucially, this is not a matter of merely informing the market and the public about central bank policies and practices, nor should it be mistaken for a conventional informational or public relations function of a government bureau or agency, rather these communications are the instruments of policy themselves.

The experiment as it took form in the late 1980s and early 1990s had two dimensions: on the one hand, it operated as an overt program of technical innovation pursued by central banks that has come to be known prosaically as “inflation targeting.” On the other hand, as suggested above, it gained articulation as narratives that can enter public discourse and thus shape sensibilities and expectations about the futurity of prices. The former aspect of the experiment has been subject to robust scrutiny in the academic literatures on central banking and monetary economics, the latter—even though it broaches fundamental issues in the social and behavioral sciences—less so (Bernanke and Woodford 2005). The emphasis herein is on the latter aspect of this experiment as it unfolds *in vivo* (Muniesa and Callon 2007).

Twenty-four central banks have adopted this monetary framework first developed in New Zealand, including the central banks of the United Kingdom, South Korea, Sweden, Chile, Canada, Mexico, and Poland. Other central banks, notably the Bank of Japan, the U.S. Federal Reserve System, and the ECB, have implicitly targeted low inflation without embracing the full monetary policy framework (RBNZ 2007a:28). Insofar as inflation targeting has come to mediate the communicative exigencies that animate contemporary practices of central banking globally, these institutions now have a common stake in insuring this policy regime retains its authority and its effectiveness. The failures or successes of any particular central bank thus have consequences for them all (Bernanke et al. 1999).

I treat inflation targeting as an experiment to emphasize the unfolding nature and uncertain character of this intellectual project. Central bankers speak of their institutions as “works in progress” without an obvious or necessary endpoint. Hence, experimentation here is not merely or necessarily about a formal testing of a particular proposition or hypothesis; rather, it is about the continuous evolution of a set of social practices and the critical labor by which the personnel of central banks bring to bear new insights and knowledge to modify and to refine the assumptions that inform their practices (Fischer 2007; Hacking 1983; Knorr Cetina 1999; Michael King 2005; Miyazaki and Riles 2005; Rheinberger 1997).

WHAT IS MONETARY POLICY?

Imagine you could influence activity across an entire economy by regulating a single variable. Further imagine that by exercising this regulatory power you would be, on the one hand, subject to intense public scrutiny while, on the other hand, subject to very limited formal accountability. Although this is a caricature—since

the 1960s work in monetary economics has shown how this power is subject to complex contingencies and indeterminacies—it nonetheless captures the distinctive institutional position and power of central banks and the central bankers who manage them. In 1923, J. M. Keynes, in *A Tract on Monetary Reform* (1971), outlined the theoretical foundations of this remarkable regulatory power. His biographer, Robert Skidelsky, describes it as follows: “The central claim of the *Tract* is that varying the amount of credit to the business sector, the banking system could even out fluctuations in business activity. The claim to have identified a controllable single variable—the supply of credit—capable of determining the level of prices and amount of activity in the economy as a whole is the start of macroeconomics” (Skidelsky 1992:153).

These government institutions are of great interest because their policies for regulating money and credit—what is termed “monetary policy”—can influence virtually all transactions that are in one way or another contingent on financial mediation. Through policy interventions, which are again subject to complex contingencies and indeterminacies, central banks can influence the pacing of activity in the economy as a whole, thus influencing the course of economic expansion or contraction. The goals of monetary policy, broadly stated, are thus to foster “high employment, economic growth, price stability, interest-rate stability, stability of financial markets, and stability in foreign exchange markets” (Mishkin 2004:431; Solow and Taylor 2001).

Despite this daunting power these government entities have gained a striking degree of independence from conventional forms of political accountability, particularly in the last two decades; over this same period the aims and goals of these institutions have narrowed and converged around the attainment of a particular policy outcome, “price stability.” Central banks are now preeminently concerned with controlling inflationary and deflationary dynamics within their respective economies and societies. The goal of price stability goes to the heart of central banking and to the center of what contemporary monetary policy can hope to achieve.

The ECB, for example, noting that avoiding prolonged periods of inflation or deflation is a critical prerequisite for firms and individuals to make informed decisions on consumption and investment allowing the market to allocate resources in such a manner that they can be used most productively, thus raising the productivity potential of the economy. Price stability reduces the demand for an “inflation risk premium” increasing incentives to invest and reducing the likelihood that firms and individuals will divert resources from productive uses to hedge against inflation.

Price stability eliminates the real economic costs entailed when inflation exacerbates the distortions of tax and social security systems and prevents the arbitrary redistribution of wealth and income that arise in both inflationary and deflationary environments (Scheller 2004:42).

The major central banks of the world had determined early in 2009 that conventional monetary policy premised on the regulation of short-term interest rates was insufficient to address the global financial crisis and that an unorthodox strategy of massive monetary intervention was deemed necessary. The Bank of England described the dilemmas posed by the crisis and the bank's plan to address them:

Significant reductions in Bank Rate to date have provided a large stimulus to the economy but as Bank Rate approaches zero, further reductions are likely to be less effective in terms of the transmission to market interest rates and the impact on demand and inflation. And interest rates cannot be less than zero.

The [bank] . . . therefore needs to provide further stimulus to support demand in the wider economy. It boosts the supply of money by purchasing assets like Government and corporate bonds—a policy sometimes known as ‘Quantitative Easing’ [QE]. Instead of lowering Bank Rate to increase the amount of money in the economy, the Bank supplies extra money directly. This does not involve printing more banknotes but rather the Bank pays for these assets by creating money electronically and crediting the accounts of the companies it bought the assets from. This extra money supports more spending in the economy to bring future inflation back to the target.

In essence, when spending on goods and services is too low, inflation will fall below its target. With Bank Rate already at a very low level, a further measured stimulus is needed through an increase in the quantity of money. [Bank of England 2009]

Thus, as the crisis unfolded policy interventions shifted from the price of money—regulated by interest rates—to the quantity of money. As the risks of inflation were superseded by the perils of deflation, the major central banks of the world—most prominently the U.S. Federal Reserve System—employed their balance sheets to create massive quantities of money “out of thin air” to avert what was widely perceived to be a looming economic catastrophe (Bernanke 2002, 2009).

A LANGUAGE

When the governor of the RBNZ, or the monetary policy committees of the ECB, the Bank of England, the Fed, the Bank of Japan, the Indian central bank, the Bank of Canada, or the Swedish Riksbank decide to raise or lower interest rates, or decide to do nothing, they are acting within a remarkable intellectual tradition. One figure looms large in this tradition, J. M. Keynes, whose contributions to monetary economics, in general, and the practices of central banking, in particular, exemplify—both positively and negatively—this intellectual tradition.

Keynes's involvements prior to, during, and immediately after the First World War with the cultural luminaries of Bloomsbury, with political and economic intricacies of financing the war effort, the drafting of the Treaty of Versailles and ultimately his famous denunciation of that treaty were closely related to his analytical breakthroughs. On issues of the gold standard, the quantity theory of money and monetary reform that marked Keynes's scholarly contribution in the 1920s this intellectual tradition was forged and its language delineated. Keynes was explicit that his theoretical breakthrough in the 1920s was predicated on the creation of a new "language": a language that I think owed as much to his association with Bloomsbury as with his work with the Bank of England.

Robert Skidelsky's magisterial three-volume biography of Keynes captures not just this intellectual history but provides a precise assessment of the technical operation of Keynes's theory—its analytical authority and its limitations—and Keynes's struggle to find a language for money and for monetary policy.

The break with the past was sudden. New ideas came flooding in, and demanded expression. From 1924 Keynes knew what he wanted to do and, in very broad terms, why. But he still needed to find a language to make a persuasive composition of his thoughts. Part of this language was assembled in the 1920s. It was a language of political economy. He tried to explain why a modern industrial society could not stand a policy of *laissez-faire*. He developed an imagery of fluids and sticky masses to explain the contrast between old and new forms of industrial life, and to pinpoint the need for a new type of statesmanship. The building of an economic theory of the treacly economy was much more difficult. He came to realize that the economics he had been taught simply assumed away the *Sturm und Drang* of actual economic life: the unexpected craters in the roads, the grinding and jamming of the gears, the seizure of the engine. . . . The steps in Keynes's struggle for language can be seen clearly in retrospect. Yet the danger in partial excavation is that it

removes the language from the context. Much of the new language was developed in lectures and journalism, which were themselves largely a reaction to immediate events or reflection on states of affairs or debates which would be fresh in the minds of his audiences or readers, but are remote from ours. [Skidelsky 1992:174]

Keynes's evocative accounts yielded an analytical tableau—in many respects congruent with an ethnographic framework—to be communicated to a public, an elite public of politicians, bankers, academics, businessmen, and journalists who populated his analytic landscape thus making its features susceptible to policy interventions.

The possibilities and limitations of economic method and theory were thus predicated on particular historical circumstances of the early 20th century. Keynes insinuated on to this landscape protagonists capable of thinking and acting critically within and on the then contemporary world. Keynes sought not merely to debate, to persuade, and to otherwise influence these subjects, but learn from them.

The economist's task was to discern the form or style suitable to the age—a matter of aesthetics and logic. . . . Keynes always stressed the crucial importance of “vigilant observations” for successful theory-construction—theory being nothing more, in this view, than stylized reorientation of the dominant tendencies of the time, derived from reflection on the salient facts. [Skidelsky 1992:221]

In tandem with his effort to render “experience” meaningful as “theory,” Keynes also delineated a pedagogical idiom—communicated in the language of monetary theory and the vernacular of finance—by which economic phenomenon could be made meaningful as a public discourse and thereby as the instruments for intervention. Crucially, this language and pedagogy were emphatically future oriented, focused in particular on the evolution of expectations. Within this pedagogic habitus the repertoire of skills and intellectual acumen we associate with the university professor—Keynes's economist-king—has become a model, if not the model, for the role of central banker (Krugman 2007; Lee and LiPuma 2002; Skidelsky 1992).

INTELLECTUAL ACTIVISM

One of these academics cum central bankers is Alan Blinder (2004), who draws directly on his experience as vice chair of the U.S. Federal Reserve System

and, more broadly, from his participation in the intellectual circles of international central bankers and academic observers who are conceptualizing and debating the revolution that he has postulated. He focuses on three areas of innovation in central banking: transparency, policymaking by committee, and the shifting interchange of information between central banks, financial markets, and the public. Blinder's institutional insights on how and why "central banks talk" intersect with Callon's insights on the performative nature of economics, specifically its intellectual activism. Many, if not most, of these actors—senior officials of central banks—are not merely technocrats who fill a predefined institutional role; they are the architects of these institutions and the theorists of the conceptual issues and the pragmatic concerns at stake in monetary policy.

Jean-Claude Trichet played a central role in the political debates that yielded the few paragraphs of text included in the Maastricht Treaty (1992) that established the constitutional basis of the ECB and the new currency it was charged with managing. He was also the key protagonist who accomplished—in less than a decade—the translation of concise constitutional passages into a powerful monetary authority with an increasingly influential currency (McNamara 1998). Mervyn King, governor of the Bank of England, played a decisive role in the academic arguments and political deliberations in the 1990s that resulted in the bank achieving a dramatically independent status in its role in the formulation of monetary policy for the United Kingdom (2005a, 2005b, 2005c). Ben Bernanke, the current chair, and Fredric Mishkin, the former governor of the Federal Reserve System, were two of the most important academic proponents of inflation targeting, a framework that they sought to adapt to the monetary policy exigencies of the United States.

The research staffs at central banks typically (although by no means exclusively) have graduate degrees from leading economic departments in North America, Europe, and Australasia and they are conversant in a series of major economic and financial paradigms including Rational Expectations Monetarism, Real Business Cycle Theory, New Keynesian Theory, and Dynamic Stochastic General Equilibrium (DSGE) theory (Leihonhufvud 2008). These contemporary theoretical frameworks inform the analytical work of central bank research staffs and the discussions of policy makers, they do not, however, determine policy action in any rigid or mechanical fashion. These paradigms are open to vigorous contestation and, importantly, they each rest on an explicit gap between theory and practice that personnel of central banks must negotiate prospectively. The intellectual agendas of these institutions are further predicated on a subtle understanding of the particular economy and financial system they are charged—by legal statutes—with

regulating. The economic history of the Sweden, its trading relations, its financial system, its taxation policies, its political traditions and so on differ markedly from those of New Zealand, the United States, or the United Kingdom and, hence, impart different analytical priorities and frame different policy alternatives. The personnel of the central banks that I have studied pride themselves on the quality of their research, their political independence, and their commitment to public interests like those of the ECB alluded to above. Although these institutions are preoccupied with the function and stability of the financial system, they construe these functions as explicitly in the service of broad public policy aims and not merely or necessarily in the interests of financial institutions.

IN VIVO

The month after my visit to Frankfurt I was in Wellington lingering in the recently opened museum of the RBNZ. It too had displays of the history of New Zealand coinage and banknote, and like the Geldmuseum, there are intriguing efforts to illustrate the operation of the New Zealand economy and the function of its central bank.

I was drawn to a hydraulic contraption—the MONIAC (“Monetary National Income Analogue Computer”)—constructed by the New Zealand economist, A. William Phillips (1914–75), arguably the “world’s first macro-economic computer,” built in the late 1940s to simulate the dynamic operations of the British economy.

It could carry out calculations unable to be performed by any other computer at the time . . . the MONIAC used water to model flows of money in a macro-economy. The linkages were based on Keynesian and classical economic principles, with various tanks representing household, business, government, exporting and importing sectors of the economy. Water pumped around the system could be measured as income, spending and GDP. The system was programmable, and the experiments with fiscal policy, monetary policy and exchange rates could be carried out. [*A. W. H. (Bill) Phillips, (MBE) and the MONIAC*. Reserve Bank New Zealand (pamphlet)]

Phillips’s wonderful machine was haunting and pertinent, symbolizing the abiding cultural enigma of how to represent mathematically, linguistically, or, in this case, hydraulically the economy; how to abstract this vast human creation about which we have a dim understanding and over which we have a tenuous control (Abolafia 1998; Knorr Cetina and Bruegger 2002; Maurer 2002).

William Phillips is better known for the Phillips curve, which famously traced an inverse relationship between the rate of unemployment and the rate of inflation (Fisher 1973; Phillips 1958; Samuelson and Solow 1960; Sims 2008). The nature of this relationship, as Phillips describes it, augmenting the demand side of the IS-LM framework, provoked some of the most important and influential debates in economic theory during the second half of the 20th century and it has continuing analytical relevance for the delineation of monetary policy (Friedman 1968; Phelps 1968; Samuelson 2008). The basic econometric model presumed “an IS curve relating financial conditions and fiscal policy to the components of GDP, an LM curve that determined interest rates as the price that equilibrates the supply and demand for money, and some kind of Phillips curve that describes how the price level responds over time to changes in the economy” (Mankiw 2006:4).

Donald L. Kohn, Vice Chairman of the Federal Reserve System, commented on the centrality of Phillips’s insights for navigating the current financial tempest:

A model in the Phillips curve tradition remains at the core of how most academic researchers and policymakers—including this one—think about fluctuations in inflation; indeed, alternative frameworks seem to lack solid economic foundations and empirical support. But the modern Phillips curve differs substantially from versions in use several decades ago; policymakers and academics alike are now attuned to the importance of expectations, the possibility of structural change, and the uncertainty that surrounds our understanding of the dynamics of wage and price adjustment. Moreover, the link between inflation and resource utilization often emphasized in a Phillips curve framework accounts for only a modest part of inflation fluctuations. [2008]

During 2007 and 2008 the problem of forecasting inflation was an overriding preoccupation of the personnel of the RBNZ as well as for policymakers in all the major central banks of the world (Rosengren 2008).

CENTRAL BANKERS UNTO OURSELVES

The innovative protocols of inflation targeting, orchestrated within a group of central banks, encompass the means by which these institutions recruited the public to become central bankers unto themselves. The experiment—initially designed and formalized as policy by the RBNZ—seeks to influence future sensibilities—not just sensibilities about the future but also sensibilities in the future—to shape the expectations that impel the most fundamental dynamic of market economies: the

evolution of prices. The bridge to the ephemera of expectations, to sensibilities in the future is constructed with language, through the technical modeling of an economy of words.

The logic guiding the “inflation targeting” goes like this: If the behavior of prices is “expectational”—as Irving Fisher, J. M. Keynes, and Knut Wicksell proposed in the 1920s—then an anticipatory policy that projects central bank action into the future becomes a means to influence these sentiments (Miyazaki 2003; Riles 2006; Swedberg 1999; Woodford 2003). As “economic agents”—that is, you and I—assimilate policy intentions as our own personal expectations, we do the work of the central bank (Orphanides and Williams 2007). As our expectations about prices become “anchored” by virtue of these econometric allegories we adjust our practices and thereby participate in the general development of consumer prices in the future. Again, the creation and perpetuation of this monetary regime is predicated on carefully calibrated communicative action informed by a keen technical acumen and formulated by a small group of individuals working within these institutions. These narratives articulated in concert with open market operations—the purchase and sale of government securities—are the conventional tools of monetary policy (Bernanke and Mishkin 1997; Singleton et al. 2006). Within the RBNZ these former practices have come to be referred to wryly as the bank’s “open mouth” policy (Bernanke 2007; Blinder et al. 2001; Guthrie and Wright 2000).

The monetary economist, Michael Woodford—echoing the observations of Robert Lucas Jr. (1986)—traces the arch of these innovative practices, framing the anthropological question pursued in this essay:

Central banking is not like steering an oil tanker, or even guiding a spacecraft, which follows a trajectory that depends on constantly changing factors, but that does *not* depend on the vehicle’s own expectation about where it is heading. Because the key decisionmakers in an economy are forward-looking, central banks affect the economy as much through their influence on *expectations* as through any direct, mechanical effects of central bank trading in the market for overnight cash. As a consequence there is good reason for a central bank to commit itself to a systematic approach to policy, that not only provides an explicit framework for decisionmaking within the bank, but that is also used to explain the bank’s decisions to the public. [2005:2–3]

Woodford is introducing into the field of monetary policy what anthropologists would call “reflexive subjects,” actors whose future-oriented sensibilities can influence the course and magnitude of economic activity. The communicative

imperative of central banks is premised on the “appearance” of these reflexive agents within the field of economic action, agents endowed with capacities and capabilities that can be mobilized to achieve specific policy ends of central banks through a systematic exchange of information and ideas (Michael King 2005; Lucas 1986). Woodford, in his own sophisticated modeling work, seeks to incorporate the decision-making capacities of central bankers and their responses to new information into his projections of prices and interest rates (2008).

FRAMEWORK

The formal practice of inflation targeting involves calibrating monetary policy to meet a numerical target, typically a rate of annual increase in consumer prices between one and three percent per year.

Inflation targeting is a framework for monetary policy characterized by the public announcement of official quantitative targets (or target ranges) for the inflation rate over one or more time horizons, and by explicit acknowledgment that low, stable inflation is monetary policy’s primary long run goal. Among other important features of inflation targeting are vigorous efforts to communicate with the public about the plans and objectives of the monetary authorities, and in many cases, mechanisms that strengthens central bank’s accountabilities for attaining those objectives. [Bernanke et al. 1999:4]

Central banks that have adopted this framework adjust their interest rate policy to achieve these numerical objectives over a time horizon of approximately two to three years. This time horizon is significant because changes in interest rate policy operate with a lag: a change in key short-term interest rates that central banks influence can take 12 to 24 months before their full impact on economic activity is registered.

Aligning monetary policy with measurable targets is not new; the German and Swiss central banks were employing these ideas in the 1970s. What is innovative is the communication to the public of these targets along with the policy inclinations and predispositions for achieving them. Foundational to inflation targeting are very carefully constructed communications that draw on the analytical expertise, experience, and judgment of senior personnel of these institutions (Issing 1997).

What follows is one of the periodic communications, the “Policy Assessment,” issued every six weeks by the RBNZ in support of its decision on interest rates. The statement is drafted explicitly in the service of inflation targeting regime

illustrating its basic terminology, its procedures, and its aims. In this particular case the explanation of the banks' interest rate decision—the RBNZ's Official Cash Rate (OCR)—was made as the financial turmoil that commenced in August 2007 was assuming greater urgency. Notably the central bank decided not to alter interest rates: crucially, however, the ecology of discourses that the bank employs to model the economic situation was beginning to shift in anticipation of new sources of uncertainty.

Policy Assessment

The Official Cash Rate (OCR) will remain unchanged at 8.25 percent.

The outlook for economic activity and inflation has become more uncertain since we reviewed the OCR in July. Credit concerns and heightened risk aversion have led to significant turbulence in global financial markets. This development increases the likelihood of a weaker economic outlook for the United States and New Zealand's other key trading partners than in recent forecasts.

The consequences of this financial market turmoil for New Zealand remain unclear at this stage. However, we continue to expect a significant boost to the economy over the next two years from the sharp rise in world prices for dairy products and some other commodities that has occurred over the past year. A sharp decline in the New Zealand dollar since July, if sustained, will act to reinforce the effects of higher world prices on export sector revenues.

Recent inflation outcomes have highlighted widespread inflation pressures but indicators in recent weeks suggest that previous increases in the OCR are starting to dampen domestic spending, which will help to reduce those pressures. In particular, household borrowing growth is beginning to slow and turnover in the housing market continues to fall.

We expect the effects of stronger export revenues on activity and inflation to be broadly offset by a further braking effect from the interest rate increases undertaken earlier this year. However, in the short-term, CPI inflation is likely to rise due to the effects of a lower exchange rate and higher food prices. It is important that this temporary increase in inflation does not affect price or wage setting behaviour in the medium term.

The recent collapse of a number of finance companies and reduced liquidity within the non-bank lending institution sector generally could further act to

dampen activity in some areas of the economy, such as property development or consumer financing. However, we currently expect those negative effects to be relatively contained.

At this point, we believe that the current level of the OCR is consistent with future inflation outcomes of 1 to 3 percent on average over the medium term. However, given greater than usual uncertainty at present, we will be watching to see how the upside and downside risks to the outlook are developing.

Alan Bollard

Governor

Reserve Bank of New Zealand [2007b]

In these economical 375 words the governor of the RBNZ addresses the pricing phenomena he is charged with managing. At the outset the central bank's intention is established, that is, to conduct "open-market operations," the setting of two overnight interest rates—essentially rates at which commercial banks can deposit with the Reserve Bank and borrow from the Reserve Bank (0.25 percent apart)—which then determine the market overnight interest rate within that quarter-percent band. In September 2007, the target OCR (at 8.25 percent) was one of the highest in the world. The body of Governor Bollard's text explains with concision the monetary policy stance in relation to prevailing conditions in New Zealand and globally during an unusually tumultuous period for financial markets.

Implicit in the statement is an underlying commitment to transparency, to the open communication of the bank's policy, clarity in explaining the analysis on which the policy stance is based, and candor in assessing the elements of uncertainty in the assessment (Blinder 2004; Blinder et al. 2001). The statement reiterates the specific inflation target that the RBNZ is committed to achieving and thus makes explicit the benchmark for assessing the bank's performance and thus establishing explicit measures of accountability for its governor. The *Governors' Policy Assessment* prefaces a longer document, *Monetary Policy Statement*; that, again under the sway of transparency, describes in considerable detail the economic analyses and projections that inform the current assessment and that are likely to influence future policy developments. Within the longer document are sources of these econometric allegories that inform the *Governor's Policy Assessment* and capture the processes by which an economy of words is modeled analytically and communicatively.

DEEP ARTICULATIONS

The Reserve Bank Governor is in the “field” each month traveling with one or two aides across the North and South Islands on visits a selection of 500 or so businesses that provide strategic purviews on the New Zealand economy. The governor and his or her staff communicate central bank policy during these visits but they also actively solicit stories—*anecdotal data*—from the employees, managers, and owners of these enterprises. They talk numbers, they talk trends, and they talk outlooks. They glean in these interchanges not only contemporaneous reports on the New Zealand economy but they also garner from these interlocutors the details, the contradictions typically lost or suppressed by economic statistics. In these exchanges they put words not only to the ephemera of local expectations and sentiments but also to the rapidly changing competitive pressures unfolding in global markets, particularly among New Zealand’s key trading partners. This complex network of interlocutors provides acute technical representations of the New Zealand economy imparting (or restoring) social mediation to economic analysis (Granovetter 1985; Holmes and Marcus 2005, 2006; Polanyi 1957; Riles 2000).

These situated actors can narrate how shifts in exchange rates, the prices of agricultural commodities, or the price of oil impact the operation of a particular business. These accounts translate the abstractions of price into countless examples of situated social action and experience. Dairy and wool processors, vintners, tour operators, appliance manufactures, software engineers, real estate brokers, bank officers, trade union representatives, managers of construction firms and retail outlets provide social mediation of economic facts for the governor and his or her staff. The future continually encroaches on these narratives as projections of income and expenditures and, most significantly, in the articulation of plans for employment and investment by these enterprises. RBNZ listed over fifty companies and organization contacted during a recent quarterly “projection round” while noting that “contact was also made with other companies and organization for feedback on business condition and particular issues relevant to our policy deliberations” (RBNZ 2007b:36). The cultivation of these relationships—these deep articulations—marks an accretion of an abstract commitment to transparency to the interpersonal nuances of rapport.

Central banks listen. The impressive rounds of speeches that senior officials of major central banks of the world are continually making are, in fact, pretexts for listening, for carefully gleaning information that encompasses the reflexive dynamic of the economy of words.

PREFIGURATION

The personnel of central banks responsible for the management of econometric models play a decisive role in constructing and informing analytical narratives. Fundamental to the research function of central banks is high-level quantitative analysis “constructing systems of equations—models—to capture the forces most relevant in the complexities of the economy” (Galí et al. 2004:7). These econometric instruments—for example, “dynamic stochastic general equilibrium models” (DSGE)—serve as the basis of the forecasting exercises critical to policy formulation; they also, perhaps more importantly, serve as the basis of disciplined discussions and interpretations (Clarida et al. 1999; Smets and Wouters 2004). The assignment of values for the 200 equations that comprise the Forecasting and Policy System (FPS), the bank’s macroeconomic model of the New Zealand economy, encompasses some of the most intricate analytical practices of the bank. Calibrating interactions among economic variables with mathematical rigor and by running various alternative regressions, the models articulate alternative scenarios on the operation of the New Zealand economy (Evans 1999; Fagan and Morgan 2005; Pagan 2003; Malin et al. 2007; Sims 2002).

Most economists working in central banks are skeptical about the forecasting capabilities of these sequences of equations (Blinder 1998:7–8). They are viewed, at best, as crude simplifications of the boundless complexity of economic phenomenon. That said, there is a broad consensus regarding the value of these instruments in framing interpretive discussions about how changes in a particular set of variables ramify across diverse sectors of the economy disciplining the evaluation and projection of alternative scenarios of economic performance. My point here—my ethnographic point—is that the models do work but in ways that exceed the internal logic of these mathematical instruments sustaining what Bill Maurer (2005b) refers to as “lateral reason.” In this guise the economy assumes a radically communicative nature cleaving to linguistic conventions and to semiotic principles (McCloskey 1985, 1990; Smart 2006). Restated, these forecasting instruments—that represent perhaps the most formidable mathematical instruments employed by these institutions—are generative of meticulous analytical narratives that have currency within and beyond central banks.

Graham Smart has examined how these communicative practices operate within the Bank of Canada and how they attain a heuristic status within what he describes as the “monetary-policy story” (1999, 2006). Notably, the RBNZ employs a modified version of this econometric model, the Quarterly Projection Model (QPM), developed by and for the Bank of Canada. Smart

provides a basic constructivist account of this process of creating economic scenarios:

The *monetary-policy story* is constructed in three stages, over time and across a set of written genres, with each successive version offering a broader knowledge claim in the form of a more comprehensive account of the state of the Canadian economy. The narrative appears in the first stage as a cluster of what I refer to as *sector stories*, specialists' analysis of developments in different sectors of the economy; in the second stage, as a more encompassing, although still somewhat circumscribed, narrative about the Canadian economy as a whole, produced by a team of economists during a quarterly activity known as the Projection Exercise and inscribed in a document called the *White Book*; and then in the final state, as a fully elaborated institutional story, constructed by executives from the White Book and other sources of information. [1999:257]

The storytelling exercise yields, as one executive put it, “an essential framework for thinking about the economy and about policy” (Smart 1999:263) and the meetings associated with this exercise “provide regular occasions for negotiating competing interpretations of empirical phenomena and statistical data” (Smart 1999:265). Yet in its final manifestation the monetary-policy story “is nowhere completely articulated in written form in any internal document; rather, it resides in the executives' discourse, surfacing in meetings and informal conversation, in whole or in part, and underlying certain assumptions and lines of argument in the texts they produce” (Smart 1999:266). These actors freely acknowledge storytelling as implicit in mediating various levels of formal empirical analysis notably in reference to the bank's econometric model of the Canadian economy, the (QPM). This ecology of discourses fosters the assimilation of “feelings,” “intuition,” “discretion,” and “judgment” reaching into the reserves of “experience” within these institutions sustaining the “intersubjectivity—the grounds of shared understandings—that make possible the intellectual collaboration of the bank's economists” (Smart 1999:256).

A very similar production of the monetary-policy story unfolds in relation to RBNZ model, the Forecasting and Policy System (FPS), yielding a story or stories open to constant revision and modification as new data and new interpretive insights become available. In the first instance, linguistic mediation rearticulates historical data in the future tense to represent the evolution of economic output, employment, prices, interest rates, and exchange rates. These analytical practices yield a relatively stable, baseline scenario of the New Zealand economy—its “central projections”—around which alternative simulations can be run and alternative

policy actions tested and evaluated. Feed back relations can be explored within this framework and second round effects revealed.

These analytical scenarios undergo a twofold translation. First, they are recast as essentially an argument or arguments for a specific policy stance. A small group of senior officials of the RBNZ, notably members of the Monetary Policy Committee (MPC) and the smaller OCR Advisory Group (OCRAG), interpret econometric projections and other data, refining them for the purposes of advising the governor on the setting of the bank's policy rate, the OCR. Second, they are rearticulated as a public statement composed for the purposes of shaping and anchoring expectations on the evolution of prices. An even smaller group of advisors assist Governor Bollard in drafting these public communications, notably the Policy Assessment reproduced above. These individuals—whose role is often overlooked—craft and edit these statements, and, more generally, oversee the rhetorical expertise of central banks (Jansson and Vredin 2004; Smart 2006).

The RBNZ Governor is vested with an unusual degree of operational independence and personal accountability. On appointment and periodically thereafter, the governor negotiates a contract—the Policy Target Agreement (PTA)—obligating him or her to keep the evolution of prices in NZ to an explicit target band for consumer prices (currently one–three percent) over the term of the PTA, or their continuing employment is, at least in theory, in jeopardy. Put bluntly, a single individual is made personally accountable for the futurity of prices within an economy at large.

Strict protections ensuring the independence of the governor's decision making are central to this monetary frameworks. The "Governor cannot be dismissed because, in achieving price stability, he or she has irritated the government of the day, or because the timing of his or her decisions has been politically inconvenient" (RBNZ 2004). The Policy Target Agreement, negotiated between the governor of the Reserve Bank and the Minister of Finance, is signed by both parties and made public with an explicit numerical expression of the inflation target that monetary policy must achieve. The terms of the PTA are widely reported in the press, communicating the political (and academic) conviction that "monetary policy has a single goal and whether that has been met or not is transparently obvious" (Sherwin 1999). Not only does this framework endow economy with a reflexive voice, but it also personifies that voice in the person of the Reserve Bank Governor.

What is Governor Bollards's communication supposed to achieve? The answer is both simple and profound. If these statements are credible and persuasive, the public's expectations will themselves cleave over time to the

targets of one to three percent, thus aiding in the anchoring of prices and furthering economic stabilization, the overriding goal of this monetary regime. We know now this policy framework—this experiment in vivo—has succeeded remarkably well in controlling inflationary expectations and the evolution of consumer prices in New Zealand since its inception (RBNZ 2007a; Svensson 2001). That said, there is no consensus on why the framework is successful, why and how expectations become anchored by virtue of these targeting protocols.

Like President Trichet, Governor Bollard is not merely expressing an interpretative account or commentary; he is making the economy itself as a communicative field and as an empirical fact. “The New Zealand economy” is thus being configured and reconfigured in part through the communicative practices of the governor and other senior officials of the RBNZ as they seek to shape expectations. The governor’s periodic policy assessment that accompany the setting of the OCR yields a metanarrative that can align heuristically countless perspectives and contexts by which firms, government agencies, households and individuals can engage a financial future. The unusual power of the 375 word assessment is its “intertextual” capacity to frame and contextualize countless circumstances and thus to orient and to align the ecology of discourses that encompass the economy of words (Brenneis 1999; Gal 2007; McCloskey 1994).

ECOLOGY OF DISCOURSES

Within the inflation target framework there is the possibility of errors of analysis and judgment, infelicitous timing and imprecise communications that can yield a range of “suboptimal” outcomes, if not overt failures (Orphanides 2002). More fundamentally, there is always the possibility that expectations can arise that are resistant to this method of anchoring of prices, or that the global economy will introduce new challenges that are refractory from the standpoint of current economic theory and recalcitrant in the face of conventional monetary interventions for managing rational or, for that matter, irrational expectations. In other words, it is precisely the possibility that this framework can “fail” that underwrites the experimental ethos (Miyazaki and Riles 2005; Riles 2001, 2004).

In the following Policy Assessment (a mere 233 words) Governor Bollard’s analysis shifted markedly as consumer prices in June 2008 were projected to exceed significantly the inflation targets established in the PTA. The bank’s policy rate was maintained at the 8.25 percent level, but the ecology of discourses that the RBNZ employs to model the situation linguistically and to anchor expectations acquired new rhetorical urgency.

*Policy Assessment***The Official Cash Rate (OCR) remains unchanged at 8.25 percent.**

The global economy is currently experiencing significant increases in oil and food prices. These price increases are occurring at the same time as activity is weakening in many economies in response to the global credit crisis and slowing housing markets. In New Zealand, this confluence of factors is producing a challenging environment of weak activity and high inflation.

We project annual CPI inflation to peak at 4.7 percent in the September quarter of this year. Although much of this reflects higher food and energy prices, underlying inflation pressure also remains persistent. Nevertheless, we do still expect inflation to return comfortably inside the target band over the medium term. This is based on the expectation that commodity prices stop rising, inflation expectations remain anchored, and weakening economic activity contributes to an easing in non-tradable inflation.

The outlook for economic activity is now weaker than in our previous Statement. We project little GDP growth over 2008, and only a modest recovery thereafter, largely reflecting a weaker household sector. Government spending and personal tax cuts will provide some offset to this lower growth but will also add to medium-term inflation pressure.

Consistent with the Policy Targets Agreement, the Bank's focus will remain on medium-term inflation. Provided the economy evolves in line with our projection, we are now likely to be in a position to lower the OCR later this year, which is sooner than previously envisaged.

Alan Bollard

Governor

Reserve Bank of New Zealand [2008a]

GDP growth was projected to be minimal, the exchange rate of the New Zealand dollar was expected to depreciate, housing prices appeared to be falling, and the labor market was understood to be weakening. This appraisal of economic conditions allowed the Reserve Bank to “look through” the first round price effects of inflationary shocks—projected to spike to 4.7 percent in the following quarter—and project the rate of consumer price inflation would return to the target band of one to three percent in the medium term of the bank's three-year projection period. The bank's tight monetary policy was pushing the economy to the brink

of recession. The spirit of William Phillips's curve imbues the analysis. The grim sequelae of economic shocks—the credit crunch, the deflating of the housing bubble, and the rising prices of commodities—were projected by the bank to resolve the inflation situation by virtue of an economic slowdown, if not recession, in New Zealand and globally.

The econometric rescripting required, however, an agile articulation of the bank's intentions vis-à-vis the evolution of expectations. The bank was explicit regarding its intention to shape pricing behavior in the statement appended to the governor's *Monetary Policy Assessment* as follows:

In these instances, a key to ensuring that medium-term inflation remains anchored at low levels is that those wage and price setters do not alter their pricing behaviours in response to these near-term cost shocks. However, if firms and workers start negotiating prices and wages on the expectation that inflation at or above the 3 percent is the norm, then the Bank would have to respond with higher interest rates than assumed here. Leaving such behavior unchecked indefinitely would encourage many of the inefficiencies that persistently high inflation brings with it, such as distorting price signals and disadvantaging low or fixed-income household. [RBNZ 2008a:5]

The Reserve Bank thus communicates its intentions unambiguously. But why should the story be believed? Why is it credible?

In a highlighted section of the statement with the heading, "The Policy Target Agreement, and maintaining price stability in trying times," the RBNZ reaffirms the intellectual premise of its monetary regime. At the moment when the CPI target is forecasted to be violated, a pedagogic opportunity arises allowing the bank to model explicitly and transparently the rationale guiding policies and practices of its personnel.

By specifying an agreed medium-term inflation-target, which firms and household can count on being achieved in the medium term, it also provides the scope for us to accommodate temporary deviations from the target—even quite large ones at times. Without the medium-term target, firms and households would have little basis for knowing where future inflation would settle. [RBNZ 2008a:7]

Monetary policy must appeal to reflexive subjects inhabiting farms, firms, and households, recruiting them to participate in the anchoring of expectations. This entails subtle messages about the nature of time, the structure of motive, and the

ability of the bank to influence prices in the medium term. This lesson can be excruciating. New Zealanders were being asked to restrain their expectations—forgoing, notably, demands for higher wages—at a time when many of them were being overwhelmed with pricing pressures (Blanchard and Galí 2007). They were being asked to trust in the efficacy of monetary policy and contingencies of monetary theory to moderate inflation in the future.

Thus, at the time when the quantitative target is breached, the econometric allegory becomes the means for negotiating the complex rhetorical challenge of shaping expectations pedagogically. The intellectual and institutional credibility of the bank is brought to bear on behavior—or more precisely on a model of economic behavior—in an effort to persuade New Zealanders to remain steadfast in their role as central bankers unto themselves.

FALLING WATER

I returned to New Zealand on September 16, 2008, and as I walked through the airport I saw the news flash that Lehman Brothers had collapsed. I knew that the crisis was changing and intensifying, and the predicament for central banks had shifted decisively. A few days earlier the RBNZ had reduced the ORC to 7.5 percent, acknowledging that the economy was experiencing a “marked slowdown.” By the end of the year the OCR was further reduced to five percent.

In Washington and, in particular, at the New York District Branch of the Federal Reserve System an unparalleled episode of economic performativity commenced—a period that may well be viewed as the most radical episode of experimentation in modern economic history. Within a matter of days fundamental elements of the global financial system were simultaneously dismantled and remade in ways that would have been unthinkable a few weeks or even days earlier.

Although most of the major commercial banks in New Zealand are under overseas ownership sparing the nation from the turmoil and expense of directly propping up the banking system; the curtailment of credit and the ensuing collapse of demand for the nation's exports loomed in late September. What the RBNZ faced was how to anticipate and to address the particular aspects of the global crisis in terms of their prospective impacts on various sectors of the New Zealand economy. The inflation-targeting regime provided the principles for addressing this challenge expectationally.

The issue in the final quarter of 2008 was to manage a situation in which credit was curtailed and growth was faltering. What had to be modeled linguistically and communicatively was confidence: to construct econometric allegories—open

to continuous updating and revision—that conveyed faith in the financial system (RBNZ 2008b). This had to be achieved as stories proliferated of mounting financial distress, if not panic, and as the data available to central banks became outdated or rendered superfluous as events intervened with astonishing speed. Compounding these communicative challenges were the temporal lags by which disruptions in the financial system affected the real economy as well as the lags associated with monetary and fiscal policy interventions and the time it takes for these interventions to be manifest as measurable outcomes.

The possibility that infelicitous communications could themselves undermine financial stability and policy outcomes was felt acutely. Here is how a senior economist at the RBNZ, Tim Ng, framed (in response to an earlier draft of this essay) the conundrum posed for central bankers seeking to shape expectations and to stabilize, if not restore, confidence.

There are areas of central banking other than inflation targeting and monetary policy where our words constitute actions intended to change behaviour, and thus the economy. I'm thinking of central banks' behaviour in making calming statements and statements that financial institutions are sound (numerous examples) through the current crisis. In part these are intended to keep financial institutions sound. If we feel there is a risk that depositors might have doubt about that and start a bank run, then the risk is that this doubt will become self-fulfilling. Hence we issue various calming statements to reassure them that we don't know something nasty that we are keeping from the public. So there is a more general phenomenon of central banks trying to influence behaviour by what they say, and steering the economy towards what they believe is a superior outcome. This would only work if central banks are widely believed by the public to be more knowledgeable about the economy and its current state and path than the public itself. Otherwise, we will be revealed to be confidence tricksters. Hence, central banks now spend a lot of time and resources maintaining research departments (typically central banks employ more economists, even in absolute terms, in a single institution than anyone else) and publishing research, in an effort to demonstrate that what they say about the economy and financial system should be believed. As your text argues, we now aspire not to be oracles, but scientists. [e-mail, November 12, 2008]

Words under these conditions are key instruments of central bank policy: circumspection is indispensable.

The personnel of the RBNZ took exceptional care to promote precise communications during this tumultuous period. Every interaction with the press, the reporting of each new data series and policy action was carefully contextualized and intermediated linguistically by personnel of the bank. As Mike Hannah, Head of Communications for the RBNZ, emphasized, it was not merely the number of increased contacts with the press, but the two-way nature of these communications that gained importance during this period. He sought both to anticipate journalists' responses to new information and to preempt misunderstandings and misinterpretations. But he also sought to glean journalists' responses and draw on their acumen to assess the nature of the public's reactions to the details of the unfolding crisis. At the close of 2008 there was another allegory that began tentatively to enter into discussion.

RBNZ framed in its December 2008 Policy Assessment a scenario that with restraint and circumspection began to tell a story of economic recovery. It was a foundational analysis that recapitulated the basic facts of where New Zealand stood in the global economy in the early 21st century and the internal dynamics of the economy that would allow, in the medium term, recovery from the crisis. Centrally, this story anticipated improvements in terms of trade fostered primarily by the decline of the Kiwi dollar and how these circumstances could over time establish the basis of an export led recovery as global demand reasserts itself at some unspecified time in the future (RBNZ 2008b:7–14).

The trade story also reveals the deeper shifts that the crisis ratified, notably that New Zealand is now fully integrated in a the economic geography of Australasia and the Asia-Pacific. Growth in New Zealand as well as its main trading partner Australia is increasingly contingent on trade in commodities with China. China, as the crisis demonstrates, is dependent on consumption of its manufactured goods in North America and Europe. These very basic facts inform the communicative modeling that can begin the conceptual labor of and for economic recovery.

Expectations of a plausible future and faith in that future will underwrite economic recovery in New Zealand and globally. The accretion of information and experience over time will further refine and endorse these sentiments reflexively. Networks of interlocutors will mediate communicatively changes by which expectations become intentions and intentions become tangible plans that can motivate action for consumers and business people. The unforeseen will continually intervene modifying or recasting these sentiments prospectively. Surprise is inherent in the modeling pursued by individuals and firms as they negotiate the contingencies

of economic recovery and learn to act in relationship to inchoate circumstances. Recovery is, thus, enlivened by “structures of feeling” that can impel growth, but these sentiments operate in the wild and are, as we know, inherently fugitive (Williams 1981). Despite outlines of a plausible recovery in some ill-defined future, the economic situation in New Zealand at the opening of 2009 continued to deteriorate.

I made two quick visits to the Reserve Bank Museum to examine the MONIAC more carefully. In late September, in the midst of the credit crunch, I found the refurbished contraption off to the right of the museum’s entrance. The manager of the museum came over and offered to turn the apparatus on. I was thrilled. Water began cascading down from the top of the display along transparent channels and through calibrated valves that regulated the flow of liquid into various chambers that represented different sectors of the macroeconomy. I was not prepared for the simultaneous affect of the apparatus as a computational machine and as a kinetic sculpture. As I stood there I felt a deep appreciation for the remarkable sensibilities of Bill Phillips. I was, however, disturbed by one distracting aspect of the refurbishment: the clicking sound of the little engine that recirculated water through the system. It reverberated like a cheap, underpowered pump. What were the conservators and refurbishers thinking? I knew that Phillips in the 1940s had used a sturdy hydraulic pump cannibalized from a Lancaster bomber in the original; the replacement sounded limp.

My fears were confirmed in January 2009 when I returned to the display to see if I could use the MONIAC to think through a problem of liquidity preferences. Even before I reached the contraption my colleague in the museum stopped me and confided that the apparatus was inoperable; the motor had failed, water could not circulate, and the velocity of money and credit was zero.

At the end of the month the bank reduced the OCR to 3.5 percent, a record low, and indicated a willingness to go lower still. The governor noted in his statement the obvious: “The global economy is now in recession and the outlook for international growth has been marked down considerably since our December Monetary Policy Statement. Globally, there has been considerable policy stimulus put in place and we expect this to help bring about a recovery in growth over time. However, there remains huge uncertainty about the timing and strength of a recovery” (RBNZ 2009). Governor Bollard broached, however, one certainty: “Inflation pressures are abating. We have confidence that annual inflation will be comfortably inside the target band of 1 to 3 percent over the medium term.” The Phillips Curve was vindicated.

TAKE AWAY

David Westbrook has suggested how economic performativity mediates an “alternative” economics that recasts or inverts the problem of pricing. He has identified the linguistic requirement for this notional economics: “We only have one unit of account, in contrast to the thousands of words we need to get our meaning almost across. Money is structurally incapable of transferring much information, as a language composed of a single word would be” (2004:51). He further describes the descriptive maneuver by which information about the world can be evoked and recovered in relation to the pricing mechanism.

An alternative economics would be conscious of the difference between the world as it is traded and the world as it is, the difference between a shadow and that which casts it. Economics would then emerge not only as the logical abstraction of market discourse (its current project) but simultaneously (if inconsistently) as a description of what markets do not express: economics would also be the self-conscious naming of what the act of pricing unselfconsciously throws away. [Westbrook 2004:180]

I have argued in this essay that the conscious naming of what the act of pricing discards or suppresses is actively underway and widely practiced and further still, this economics is fundamental to the daily routines of personnel within central banks in the midst of a destructive storm in which the pricing mechanism is impaired or dysfunctional (Bernanke 1983; Fisher 1933; Keynes 2007).

These actors are fully aware of the unstable nature of the economic phenomena they are charged with managing as well as the limitations of their analytical tools designed to measure, if not predict, its performance. They understand that they must continually create agile narratives to capture the dynamic character of this global system and they do this with candor and reflexive acuity. Central banks are decisive (and perhaps unlikely) setting in which this alternative economy gains articulation. Alan Blinder’s quiet revolution is thus an increasingly raucous affair as it attains expression as a global patois for the generation of meanings and metaphors that can account for and contextualize, among other things, the behavior of the strings of electrons that now constitute our money (Elyachar 2005; Escobar 2008; Graeber 2001; Lépinay 2007; Maurer 1995, 2002, 2005a, 2005b; Turner 2008).

But, as I have argued in this essay, this revolution in central banking has far broader significance and rests on deeper cultural exigencies. The architects of the inflation-targeting regime were designing an overt experiment in monetary policy, but they were also pursuing implicitly another experiment by which they worked

out a means for modeling linguistically and, hence, communicatively economic phenomena operating at the limits of calculation and measurement. I have aligned my ethnographic experiment with this preexisting experiment in monetary policy permitting analyses to unfold simultaneously from the perspective and in the language of participants—central bankers—as well as on our terms, in a language recognizable to anthropologists.

Words in these circumstances perform the decisive function of creating countless contexts that can frame data series, statistical measures, and econometric projections. More significantly, these communicative practices inform the modeling that we all continually participate in, they enliven the innumerable simulations by which our expectations are engendered and the means by which our understanding of economic conditions are imparted prospectively. Within this analytical field—where Michel Callon meets J. M. Keynes—the refunctioning of ethnography is fully expressed as “subjects” themselves continually rely on networks of interlocutors to capture the ever-changing ecologies of discourse by which the economy is created and articulated in the wild.

ABSTRACT

In this essay I introduce the notion of “the economy of words” as the means by which central banks model linguistically and, hence, communicatively economic phenomena operating at the limits of calculation and measurement. In this economy “at large” or “in the wild,” words perform the decisive function of creating context—countless contexts—that frame data series, statistical measures, and econometric projections. Within this analytical framework—inspired by J. M. Keynes and Michel Callon—words are employed not merely for expressing interpretative accounts or commentaries: they create the economy itself as a communicative field and as an empirical fact. Through the technical mediation of an economy of words—a monetary regime has, thus, come to be endowed with reflexive voices. The current financial situation highlights the role of the communicative practices in formulating policy to influence the severity, the breadth, and the duration of the destructive storm.

Keywords: banking, finance, political economy

NOTES

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Editors' Notes: *Cultural Anthropology* has published other essays on finance and money. See Karen Strassler's "The Face of Money: Currency, Crisis, and Remediation in Post-Suharto Indonesia" (2009), Hirokazu Miyazaki's "Economy of Dreams: Hope in Global Capitalism and Its Critiques" (2006), Bill Maurer's "Due Diligence and 'Reasonable Man,' Offshore" (2005c), Paul Eiss's "Hunting for the Virgin: Meat, Money, and Memory in Tetiz, Yucatán" (2002), and Virginia Dominguez's "Representing Value and the Value of Representation: A Different Look at Money" (1990).

Cultural Anthropology has also published other essays on the knowledge practices of experts, including Michael Montoya's "Genes, Race, and Mexicana/o Ethnicity in Diabetes Research" (2007), Andrew Lakoff's "The Generic Biothreat, or, How We Became Unprepared" (2008), Celia Lowe's (2004), Christopher Kelty's "Geeks, Social Imaginaries, and Recursive Publics" (2005), and Stephan Helmreich's "After Culture: Reflections on the Apparition of Anthropology in Artificial Life, a Science of Simulation" (2001). Holmes describes the knowledge practices of the bankers he focuses on as working with the logic of "experimental systems," which are further explicated and described in Michael M. J. Fischer's "Culture and Cultural Analysis as Experimental Systems" (2007).

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