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REVIEW ESSAY

On the Materiality of Markets

Paul Langley

Alex Preda, *Framing Finance: The Boundaries of Markets and Modern Capitalism* (2009).

Trevor Pinch and Richard Swedberg (eds), *Living in a Material World: Economic Sociology Meets Science and Technology Studies* (2008)

The study of markets would seem to be opening-up at present. The financial crisis that began in Autumn 2007 and necessitated monumental interventions by public authorities has, at the very least, created political space for disagreement over the claims of mainstream economics. Those who have long retained faith in Marx, Keynes and their intellectual successors, along with economists who herald the insights of behavioural psychology, have found critical voice in the popular media and in academic and policy debates. But the moment of crisis and on-going malaise also give additional impetus to a wide range of developments already in play that, seeking a distinctly different understanding of markets, are typically captured as the rise of ‘cultural economy’: significant self-reflection is well underway in economic geography and economic sociology over the direction of these fields; the remit of science and technology studies (STS) has broadened to include economy; material culture is becoming firmly established as a vanguard field in anthropology; political economists have begun to grapple with the prospects of a ‘cultural political economy’; and there is a new wave of interest in ‘economy’ understood as crucial to modern liberal government, in part stimulated by the recent English translation of Michel Foucault’s lectures at the Collège de France during the late 1970s.

The prospect, then, is for a further consolidation of cultural economy, of an open and broad field of research that refuses to bracket-out economy as a separable object of study and which works with, rather than against, the cultural, material and descriptive turns in understanding markets. Read against this backdrop, Alex Preda’s *Framing Finance* and Trevor Pinch and Richard Swedberg’s *Living in a Material World* are certainly timely, and are likely to become touchstones in on-going debates as cultural economy continues to gain greater traction across an array of academic disciplines and beyond.

As Pinch and Swedberg stress in their editorial introduction, *Living in a Material World* shares a concern with previous key edited collections in cultural economy - such as Michel Callon’s (1998) *The Laws of Markets*, and Donald MacKenzie, Fabian Muniesa and Lucia Sui’s (2007) *Do Economists Make Markets?* - to mark out the potential of an emerging field. Indeed, a good number of contributors to one or both of these previous collections (Callon, MacKenzie, Muniesa, Philip Mirowski and Edward Nik-Khah) are also present in *Living in a Material World*. What would seem most notable about *Living in a Material World* in this respect, as it explicitly recognises in its subtitle, is that it seeks to create a collaborative dialogue between economic sociology and STS through an embrace of the material turn. As

the editors put it, ‘the idea of materiality may be used as a bridge between STS and economic sociology for two-way traffic between these two fields’ (p. 12). The agenda of *Living in a Material World*, then, is to promote a broad and common interest in material objects and technologies that do not merely represent economies, but are a constitutive feature of economic and market action.

Framing Finance, meanwhile, has been keenly anticipated for some time and provides a paradigmatic statement of the ‘social studies of finance’ (SSF). As a self-proclaimed field of study, SSF has perhaps been at the forefront of attempts to bring cultural economy to bear in the analysis of markets. And, in drawing on STS and the actor-network theory (ANT) of Michel Callon and Bruno Latour in particular, SSF has been decisive in carrying forward debates over the materiality of markets. Preda himself, for instance, contributes a chapter to *Living in a Material World* which, also appearing in a revised form in *Framing Finance*, focuses on the new forms of agency enabled by the stock ticker as the first material technology to be specifically designed for financial markets. Such a focus follows from the call, made in *Framing Finance*, for analysis of the coordination of the dispersed and diverse individual actions of markets to proceed by ‘investigating concrete, material arrangements’ (p. 8).

Is it the case, then, that materiality can provide a ‘bridge’ or meeting point around which economic sociology and STS, and by extension the diverse threads of cultural economy research, might coalesce in order to better understand markets? In addressing this question here through a critical review of *Framing Finance* and *Living in a Material World*, what is of particular interest to me is how reading these books alongside one another serves to highlight both the possibilities and problematics of materiality as a meeting point for cultural economists. In a nutshell, and as *Living in a Material World* and *Framing Finance* attest, materiality matters and the material turn offers much to the cultural economy of markets. But, at the same time, and again as both books illustrate in various ways, materiality is not quite the comfortable and secure meeting place for cultural economists that Pinch and Swedberg suggest. Materiality is, then, perhaps best thought of not as a bridge but as an alternative starting point that provokes further debates amongst cultural economists about understanding markets, debates where questions of calculation and the performativity of economics loom large.

Materiality as Meeting Point

As Pinch and Swedberg quickly establish in the editorial introduction to *Living in a Material World*, they are far from alone in the social sciences in recent times in calling for a “‘material turn’” (p. 2). While this brings something of a critical mass to the case for materiality as a meeting point for economic sociology, STS and by extension cultural economy, it also brings a rather full carousel of baggage that may engender considerable misunderstanding about what, precisely, this implies. What Pinch and Swedberg have in mind in their take on the material world is not merely the claim that ‘material forms matter to social science’, as ‘it is now obvious that the social world is partly constituted by things’ (p. 2). As they note, such

claims have been successfully advanced by Arjun Appadurai and Daniel Miller amongst many others. Rather, and drawing directly on STS and ANT, what is crucial for Pinch and Swedberg's materiality is a concern with 'things that "bite back", or things that themselves have emergent powers or to which some form of agency may be ascribed' (p. 2). The point here then is not to separate the power and agency of human and non-human technology in making and remaking economies, but to work from a 'richer notion of materiality, which encompasses technology, the social practices that constitute it, and the myriad ways we interact with it' (p. 3).

It is perhaps no surprise, therefore, that Pinch and Swedberg set out some concepts from STS and ANT that they see as furthering understanding of material technologies and economies. They draw attention, in particular, to 'the liminal space between machines and humans' (p. 4), the difficulties of drawing any analytical distinction between entangled human and non-human actants, and the meanings that come to be ascribed to objects and technologies by users and intermediaries. What is revealing, however, is that Pinch and Swedberg follow this with a tour of influential concepts from new economic sociology that they suggest can be reworked to address materiality. So, for example, a call is made for analyses of the 'embeddedness' of economies in social relations to consider 'material embeddedness' in the sense that 'objects and people are indissolubly embedded in each other' (p. 6). Similarly, the concept of 'field', whether derived from Bourdieu or DiMaggio, is criticised for its neglect of materiality but, at the same time, is seen as holding out considerable possibilities. The individual and organisational actors that are assigned a place by the field, and who may also constitute the field through their interaction or orientation to others in its hierarchy, are 'typically perceived by sociologists as purely social entities, devoid of any materiality' (p. 6). Yet, the field can be thought of as entailing 'both social and material entities', such that 'hierarchies and inequalities can be conceived of in a new way' (p. 7).

For Pinch and Swedberg, the idea of materiality and of attributing analytical importance to objects of technology in understanding economies is, moreover, also broadly compatible with classical traditions of economic sociology that rest on Marx, Weber, Schumpeter and Polanyi. In the terms of Polanyi, for example, it is held that the distinction between different forms of economic distribution – market exchange, state redistribution, and household reciprocity – can be maintained because 'materiality is absolutely central to all of them, for the simple reason that all individuals have to reproduce themselves' (p. 9). In short, it would seem quite possible for economic sociologists of the market, whether new and classical, to 'add and stir' the material entanglements of STS and ANT to their well-worn concepts and founding frameworks.

Market Boundaries and Materiality

In Alex Preda's *Framing Finance*, claims about the analytical significance of materiality for understanding markets are necessarily more guarded than those made by Pinch and Swedberg. This, after all, is a book wherein the objective is not in the first instance to chart a new course of study for economic sociology or cultural economy, but to ask how financial

markets, and especially the stock market, have legitimately become ‘enmeshed with our daily lives’ (p. 1). What is crucial for Preda are ‘the origins and the social foundations of this legitimacy’, where ‘the legitimacy of stock exchanges rests on how the boundaries between them and society at large are drawn’ (p. 6). That dispersed, diverse and uncertain individuals come to accept the stock market as legitimate as they themselves participate as stock market investors is the ‘coordination problem’ (p. 6) which Preda seeks to address.

As such, *Framing Finance* provides a revisionist sociological response to Hayek’s core problems of knowledge in society. For Hayek, it was the synthesis of the price mechanism that alone was capable of coordinating and integrating disparate and fragmented individuals as holders of incomplete knowledge and information. For Preda, meanwhile, the explicit problem is how coordinated market action comes to be achieved when, as he suggests in his opening chapter, classical economic sociology’s view that a collective cultural spirit galvanises capitalism is found to be wanting in various ways. What *Framing Finance* offers instead follows from the new economic sociology of market networks, where ‘observational arrangements ... provide a common orientation to market actors’ (p. 10). This is developed through a focus on observational and observed boundaries, an approach that resonates strongly with Karin Knorr Cetina and Barbara Grimpe’s chapter in *Living in a Material World* where the focus is upon the ‘scoping systems’ of computer terminals that are at work in foreign exchange trading floors. According to Preda, observational boundaries distinguish groups associated with the stock exchange, on the one hand, and provide the means ‘through which the stock exchange (re)presents itself to the society at large, a system through which paths of financial action are opened and actors position themselves with respect to financial activities’, on the other (pp. 14-15). *Framing Finance* is thus a story of how, from the latter half of the nineteenth-century through to the Great War in particular, the stock market became a legitimate and scientific domain of co-ordinated market action that is the preserve of privileged insider groups, but which can nonetheless be viewed and accessed in particular ways by outsiders.

The materiality of markets features specifically in *Framing Finance* in terms of ‘three interrelated observational modes’ which are held to be ‘central for the boundaries of finance under modern capitalism’. These are: ‘microscopic’ tools and technologies of market price observation; ‘telescopic’ categories, classifications and lenses; and ‘kaleidoscopic’ representations of the place of finance in relation to economy and society (pp. 17-18). So, for example, chapter 3 concentrates on nineteenth-century abstract and scientific models of investor behaviour contained in brochures and guides, kaleidoscopic and telescopic developments that promised to legitimate speculation but which required ‘attention to price data as the object of observation’ (p. 112). Thus, chapter 4 deals with the continuous flow of price data produced by the installation of the microscopic stock ticker from the 1860s. Chapter 5 then explores how the greater availability and complexity of price information fed a telescopic drive from the turn of the twentieth-century to forecast price movements and value securities through the visualisation and classification of charts and technical analysis. Chapter 6 follows by detailing a discursive shift that, in a kaleidoscopic fashion, positions

both the stock market and the individual popular investor as making a positive contribution to national economy and society. Moreover, chapter 8 insists that periodic market panics are ‘coordinated indirect observations of disruptions’ in which stocker ticker price movements and media and news reports feature as material observational tools (p. 223). Materiality matters, then, not simply to the representation of financial markets but to the boundary work of their very constitution, even during moments in which price volatilities are typically understood to be driven by individual passions and crowd emotions.

Materiality as Starting Point

Let us revisit, then, the claim advanced by Pinch and Swedberg that materiality provides a bridge for two-way traffic between economic sociology and STS. What do *Framing Finance* and the main chapters in *Living in a Material World* reveal about this claim and, by extension, about how cultural economists might engage with the materiality of markets? My reading of these books suggests that materiality is less a bridge around which the diverse threads of cultural economy might coalesce, and more a starting point that necessarily leads to further debate. In this respect, the crucial questions that come to the fore when reading these books arise, so to speak, out of the two directions from which the bridge of materiality might be approached. From the side of STS and ANT, is the materiality of markets not best addressed without its incorporation into reworked concepts of established social theories? And, from the side of economic sociology but taking cognizance of STS and ANT, if materiality is to provoke a reworking of concepts, what alternatives would seem best placed to address the materiality of markets?

STS and especially ANT have, of course, made great analytical play of the importance of rejecting theories of the social in favour of careful inquiry into human and non-human associations, connections and assemblages. Perhaps not surprisingly, given a *modus operandi* that seeks to critique mainstream economics and restore the social to markets, this move has been particularly disconcerting for economic sociology. Especially troublesome in this respect are the questions about economic agents and agency that STS and ANT raise, questions that come through strongly in the chapters that comprise *Living in a Material World*. Often through reference to social networks or fields, a large volume of research in economic sociology has been largely successful at debunking the atomism of mainstream economics. But, for STS and ANT, questions about agents and agency in markets have a quite different meaning as they bring materiality to the fore.

As Michel Callon’s opening chapter in *Living in a Material World* illustrates, what matters for STS and ANT is not the analytical corrective that replaces ‘*homo economicus*’ with ‘*homo sociologicus*’ as individual agent, but the ways in which the ‘distributed agency’ or ‘socio-technical *agencements*’ of market action are assembled. The common sense and popular tendency to impute responsibility for market action to individual agents is itself something to be explained in the French pragmatist tradition of Deleuze, something that is the product of a particular arrangement or *agencement* as subjects and devices are not separable. In his chapter in *Living in a Material World*, Callon thus interrogates the figure that he dubs

'*homo economicus 2.0*'. This responsible, entrepreneurial and imaginative subject materializes through the socio-technical *agencement* of the network economy which combines specific discourses, organisational procedures and the technical devices of information and communications technologies.

In *Living in a Material World*, Callon's approach to the assembly of market agency contrasts sharply with the contribution of Philip Mirowski and Edward Nik-Khah which pursues an economic sociology where agents are crucial. In developing their wide-ranging critique of STS and ANT, Mirowski and Nik-Khah focus on the Federal Communications Commission practice of auctioning communication spectrum licences in order to illustrate their argument. Countering ANT-informed analyses that cast these auctions as an instance of the performativity of economics, Mirowski and Nik-Khah's causal argument about the form taken by the auctions turns on participating 'firms' narrowly constituted interests' as collective agents who employed particular game theorists as consultants and lobbyists to advance those interests (p. 105). So, while markets may well be differentiated and diverse calculative devices as Callon suggests, there remain 'social processes going on underneath' and 'isolating the economists as the appropriate protagonists ... tends to distract attention from those who may be the major players involved in the construction and shoring up of the "economy"' (p. 118).

Certain aspects of Preda's *Framing Finance* similarly illustrate that while taking materiality seriously in the analysis of markets implies a concern with assembled agency, this can sit uncomfortably with a desire to address questions of power explicitly provoked by theories of the social. For Preda, then, the observational boundaries that are pivotal in his analysis of the sphere of the stock market do not 'come from nowhere' and 'are set in place by specific groups who control a domain of activity and are interested in (re)presenting this domain of activity to the outside world as both legitimate *and* accessible' (p. 16-7, *original emphasis*). What is perhaps striking about *Framing Finance* in this respect is the way in which materiality is introduced into a new economic sociology where markets are sustained by social networks and organised through systems of social position.

However, from the point of departure supplied by Callon which has done so much to carry forward research into the materiality of markets, 'interests', 'control' and agency cannot be assumed as pre-existing, fixed and cohesive. Rather, and just as the popular tendency to assign responsibility for market action to individual agents is something to be explained, so this analysis must be extended to collective agents such as firms and financiers which typically feature in critical and sociological accounts of markets. What is at issue here are precisely the inherently material processes through which those involved in markets - firms, financiers, regulators and so on - come to establish their capacity to act, and ascribe meanings to those actions. And, in relation to markets specifically, and somewhat controversially for many economic sociologists and cultural economists, this necessarily brings us to the thorny question of the performativity of economics.

Aside from Mirowski and Nik-Khah's strident critique, the neglect of the performativity thesis in the chapters that comprise *Living in a Material World* is somewhat surprising. Performativity is also a notable absence in the analytical schema of *Framing Finance*. Yet, the allure and attraction of the analytical category of materiality, as developed through STS, ANT and Callon's work in particular, would seem to arise from precisely the ways in which it can unpack the power relations at work through all manner of market tools, technologies and devices by drawing attention to the performativity of economics understood in its broadest sense. Contrary to somewhat stylized interpretations, inquiry into the performativity of economics is thus not simply a replay of concerns with the self-fulfilling ideas, beliefs and prophecies of markets. Rather, it is an engagement with how specific material artefacts mediate and assemble apparently calculative market agency in more-or-less discrete networks.

When viewed as a starting point for the cultural economy of markets that is derived in the first instance from STS and ANT, then, materiality may provoke a range of responses. Those wedded to STS and ANT who steadfastly refuse to cloud their ethnographic research with a theory of society are likely to continue to be happy to focus on specific material technologies and the uncertainties of their application in calculative market performances. Consider, for example, the chapter by Daniel Benuza and David Stark in *Living and Material World* which carefully explores the distribution of calculation across human and non-human agents in the performance of arbitrage trading in financial markets. Or, not dissimilarly, the chapter that follows it by Fabian Muniesa which examines the significance of telephones in financial trading rooms. But, explorations of specific material devices and the context-specific performativity of economic calculations continuously run into theories of the social, theories that may well also have much to offer to the cultural economy of markets.

In *Framing Finance*, for example, the materiality of markets is certainly far from an afterthought, but the definition of the analytical problems to be addressed (i.e. the legitimacy and coordinated action of stock markets) are derived, in the first instance, from new economic sociology and not from STS. *Framing Finance* offers an immensely detailed and extremely informative material sociology of the history of the stock market. In doing so, it illustrates how the materiality of markets might be successfully addressed by cultural economists, and how simply 'adding and stirring' materiality to established concepts is not sufficient for this task. Yet, at the same time, bringing materiality to bear within a carefully and thoroughly articulated approach to new economic sociology, as Preda does, is clearly not the only way forward in this respect. Other theories of the social provide concepts and categories that arguably resonate more strongly with the triad of materiality, calculation and performativity that tend to be to the fore in ANT-informed understandings of markets in particular.

Take, by way of a final example from *Living in a Material World*, the chapter by David Hatherly, David Leung, and Donald McKenzie. The focus here is upon the accounting techniques of corporate reporting, and the ways in which these classifications and measurements are not simply performative but are always subject to considerable discretion

in accounting practice. The empirical focus of the chapter supports a wider call, whereby ‘economic sociology must move from studying the institutions in which economic activity is embedded to analyze the actual calculative practices of actors at work’ (p. 253). As one might expect from McKenzie’s influential body of work more broadly, the conceptual agenda here combines materiality and the assembly of market agency with the calculative and performative.

Yet, what is more striking about Hatherly, Leung and McKenzie’s chapter is that they cast their call as consistent with the work of sociologists and critical accountants who have drawn on Foucault to theorise accounting, understood in its broadest sense as calculation, as a technology of modern liberal government. The potential of a highly productive reworking of the concepts of the later Foucault in understanding the materiality of markets may not, however, be limited to his work on calculation. There are further consistencies and challenges posed by the juxtaposition of ANT-informed understandings of markets with the work of Foucault. The performativity of economics stressed by ANT, where the conception of performativity is derived from J.L Austin and Callon’s own writings, also chimes to some degree with the highly influential social theoretical project of Judith Butler which is itself grounded in a Foucauldian reading of power-knowledge and Derrida’s deconstructionist engagement with Austin. But, interestingly, in the footnotes of the first page of the *Living in a Material World*, where Pinch and Swedberg set out materiality as a meeting point for economic sociology and STS, questions of performativity and calculation are both cast as alternative ways of bringing these fields of study together. Ultimately, a reading of the two books under review here suggests that, for cultural economists who wish to take the materiality of markets as their starting point, such questions cannot be set to one side as alternatives but should be taken up simultaneously.

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