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Complexity, finance, and progress in human geography

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Abstract: This paper reviews recent commentary on and interpretations of the ongoing financial 'crisis' unfolding in many western economies. It finds that a central theme of these readings is the twofold argument that modern finance is too complex, and that this complexity is responsible for the crisis. The paper, inspired both by the economist John Galbraith and by the geographer David Harvey, argues against this widespread ascription and scapegoating of complexity. It does so as part of a wider argument that progress in human geography can be fostered through demystification of modern money and finance.

Key words: complexity, crisis, finance, money, understanding.

I Introduction

In the early months of 2009, the world remains, to varying degrees in different territories, in the throes of an enormously disruptive financial 'crisis' (Shiller, 2008; Turner, 2008).[1] This 'crisis' – the scare quotes invoked simply to register that what constitutes a crisis varies widely between different peoples and institutions in different times and places – is generally said to have begun in the middle months of 2007, and has seen, especially in the USA and much of western Europe, house and stock prices plunge, consumer and institutional credit markets dry up, financial institutions collapse, and governments inject into national banking systems massive sums of public money in the form of cash, debt and even, latterly, equity financing.

It is inevitable that in the years ahead, whatever the length, breadth and severity of this crisis, scholars from across the social sciences will vigorously debate its configuration and consequences, and that the resulting crisis literature will mushroom accordingly. It is right and proper that human geographers contribute fully to this scholarship, not least in view of the myriad geographical dimensions that the crisis can already be seen to exhibit in terms both of its reality (what it is) and its popular representation (what it is said to be): the fact that it is playing out in markedly different ways in different places; the fact that the economies of these various terrains of crisis are inextricably interconnected not only with one another, but also with economies thus far seemingly less affected by such crisis tendencies; the

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fact that explicitly spatial metaphors such as 'contagion' have been marshalled to describe and even explain the crisis from its earliest days; and so on and so forth.

This paper, necessarily, is not a review of progress made in understanding the crisis. It is, instead, an assertion first and foremost of how such progress might best be made going forward. As opposed to assessing, *ex post facto*, what geographers and others *have* said about the crisis, I offer an argument, *a priori*, for what they *should* say – or, more accurately, for what they should *not* say. These suggestions, moreover, are intended to pertain not just to the analysis of this particular crisis-marked juncture in the evolution of the international financial system, but also to the field of critical geographies of money and finance more generally.

The central argument of the paper is that geographers should strongly resist focusing on – and hence ratifying – the perceived *complexity* of modern finance, which is a tendency that, I will show, is clearly apparent in early interpretations of the present crisis. My argument, in fact, is explicitly against the materiality of complexity in finance. I make this argument specifically to unsettle two powerful but problematic dispositions. One is the tendency for commentators to use the perception (or excuse) of complexity to absolve themselves of the requirement to undertake truly meaningful analysis. The other is the inclination to blame complexity *for* crisis – to invoke 'complexity' as a *causal* and *sufficient* explanation of crisis in and of itself. Interestingly, both such tendencies were hinted at by Andrew Leyshon and Nigel Thrift (2007: 97) in a perspicacious article written shortly before the current crisis unfolded: the alleged 'complexity' of the international financial system, they wrote, is 'generally considered to have dire consequences'. But, as Leyshon and Thrift went on to argue, 'just because this account has become orthodoxy it does not mean that it is necessarily correct' (p. 98).

The paper comes in three parts, followed by a conclusion. The first, short section is largely contextual, and discusses the wider politics and poetics of the language of complexity in the realm of finance. It suggests that claims as to finance's complexity are anything but neutral; they are, rather, calculated and consequential, and these consequences are, in turn, deeply political.

The second section reviews the ways in which concepts of complexity have been mobilized in early commentary on the current crisis. It demonstrates that the two tendencies noted above – to 'cry' complexity, and to blame complexity – are each centrally present in critiques from both the left *and* the right. Unavoidably, the commentators I refer to here are largely journalists, politicians and regulators rather than academics, the lag time on scholarly publication prohibiting a significant engagement with the latter; nevertheless, I argue that we can already begin to see the same pattern emerging in the first published academic papers on the crisis. I am particularly critical in this section of the impulse to locate in 'complexity' the roots of the present crisis, for such a gesture, I argue, not only reifies and ascribes agency to sets of relations that are seldom properly defined (let alone explained), but it also singularly fails to identify mechanisms of cause and effect.

From a geographical perspective, one of the most interesting aspects of this contemporary reification of complexity is that it represents something of a *de-spatialization* in comparison to earlier commentary on the causes of financial crisis. Research has shown that in previous crises, particular *places* have often been framed as scapegoats, and that through this framing such places themselves become reified – endowed with causal powers, more or less independently of the people and institutions that operate in, or that are in some way connected to, those places. This was certainly the case with the Asian financial crisis of the late 1990s, where much of the blame was laid at the door of

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'East Asia' (for discussion see, for example, Kelly *et al*., 2001). Indeed, it could be argued that in the early months of the current crisis some influential commentators, foremost among them UK politicians, sought to indulge in a comparable geographical blame game. 'Perhaps if someone in America had looked more closely at who they were lending to', opined Chancellor Alistair Darling (in words essentially parroted by Prime Minister Gordon Brown), 'some of these problems would have been avoided' (cited in Gapper, 2007). This reification of an 'American problem', however, was short-lived, with critics rapidly dismissing as 'ridiculous' the notion that the UK was 'minding its own business when it caught US financial flu' (Gapper, 2007). What has taken the place of this *spatial* scapegoating, it seems to me, is in large part a *conceptual* scapegoating, which still rests squarely on a process of reification, but this time of a property (financial complexity) rather than a place.

The third and main section of the paper insists that, despite claims to the contrary, it is and should always be possible to describe and explain the basic structures and relations of modern finance in a way that is readily comprehensible – which is to say without succumbing to the chimera of complexity. This is *not* to say that there are not some extremely complex dimensions to modern finance – clearly, there are, and, as I will discuss, these include, but are not limited to, sophisticated trading strategies and byzantine asset pricing models. However, what *can* be understood in a relatively clear way, I argue, are the *forms* money takes, by which I mean the underlying *instruments* created to allow people and institutions to crystallize and move money – to borrow, invest, save, speculate. Despite their proliferating number and the dizzying array of new acronyms used to denote them, these instruments continue to serve the same essential purposes as their more mundane predecessors, and it is in this way that we must continue to understand them. I develop this argument with specific reference to the instruments which have received so much exposure, but barely any explication and clarification, in the current crisis moment, and to which the 'complexity' label is invariably tagged: the credit default swaps (CDS), the collateralized debt obligations (CDO) and the asset-backed commercial paper (ABCP).

Underpinning this snapshot exercise in the demystification of financial instruments are two central convictions. The first is that geographers are *particularly* well positioned to deconstruct the complexity-talk that surrounds such instruments. This conviction, in turn, is based on the fact that the scapegoating of complexity, as noted, is fundamentally a form of reification or *fetishization* – and the fact that *de*-fetishization has long been a central hallmark of the critical geographical imagination, as effected and articulated most notably by David Harvey (eg, 1990). As such, my deconstruction of perceived financial complexity in the third section of the paper very much follows Harvey's cues, as set out most elaborately and comprehensively in *The limits to capital* (1982). For it was in that seminal book that Harvey, after Marx, set about de-fetishizing finance through his exploration of the instruments and instrumentalities of credit (Chapters 9 and 10), and it is through an insistence on treating today's 'complex' financial instruments as nothing more or less than forms of credit – material, observable, explicable – that we can disrobe them of their aura.

The second conviction relates less to how, and following whose guidance, we can set about de-fetishizing financial instruments, and more to the question of *why* we should do so. Though this paper criticizes complexity-talk specifically on the basis that complexity neither exists to the extent that is alleged nor can credibly be held to cause crisis in the manner alleged, these are not the only reasons for seeking to demystify. The deeper and more important reason is that if we passively accept that today's financial instruments are mystifyingly complex, then we limit our ability to understand not only the instruments themselves, but also their implication

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in the processes, relations and spaces of capital accumulation and of its periodic crises. The first domain of understanding is the focus of the present paper; the second, much broader and more challenging domain, I suggest in the conclusion, should be the focus of ongoing research by critical geographers of money and finance.

II The politics and poetics of complexity in finance

Alongside Harvey, the other principal inspiration for this paper is a perhaps surprising and not necessarily always comfortable bedfellow: namely, the late, great Canadian economist John Kenneth Galbraith, and his hugely informed and informative writings on finance, particularly those pertaining to the reasons and remedies for financial crisis (see especially Galbraith, 1954; 1990).[2] In an entertaining primer on money that could usefully serve as an entry-point for anybody no longer willing to remain bemused by the topic, Galbraith (1975: 14–15) wrote the following: 'Much discussion of money involves a heavy overlay of priestly incantation. Some of this is deliberate. Those who talk of money and teach about it and make their living by it gain prestige, esteem and pecuniary return, as does a doctor or a witch doctor, from cultivating the belief that they are in privileged association with the occult – that they have insights that are nowise available to the ordinary person. Though professionally rewarding and personally profitable, this', Galbraith insisted, 'is a well-established form of fraud'.

Galbraith's observation strikes to the very heart of much that is said and written about finance, and especially so, I will argue below, during the market traumas of the past 24 months. His points are exceedingly simple ones: namely, that money and finance are *made* to seem much more complex than they actually are, and that this inference of complexity confers both cultural *and* economic capital on those who indulge it. Imputing complexity, then, has both a poetics – it is fundamentally about language – and a politics.

In this short section, I extend Galbraith's observation to make four further points about such politics and poetics. The first is that while geographers may not have *explicitly* confronted this complexity-talk their work on finance *has* pointed up key political dimensions of hegemonic financial discourses more widely that are almost certainly also at play here, and which subsequent analyses would likely be able to draw out. At the very least, one would expect to find marked gender and class interests implicated in the ascription and (non)explanation of complexity. Key reference points here would be Linda McDowell's work on the performance and politics of masculinity in the City (1997), and Harvey's work, over many years, on the class contours of financial neoliberalism (1982; 2003; 2005).

The second observation is that if imputing complexity has material effects for those few on the 'inside' who do the imputing (political *and* economic effects, of course, for 'expertise' can be retailed at a significantly higher margin if such expertise is considered widely unattainable) it also has effects for the majority who exist on the *outside*. The *Guardian* journalist Max Hastings made this point emphatically on observing, in the very early days of the present crisis, that modern finance has all the appearance of a 'new witchcraft', relying as it does upon 'skills and secrets that remain opaque to all outside the Magic Circle'. 'Incomprehension', Hastings (2007) warned, 'makes us the City's prisoners'. The more complex finance is – or, I would argue, is *made* to appear to be – the less *non*-financiers are able to intuit its infrastructure and hence actively question and call to account the worlds constructed and inhabited *by* financiers. Cultivated complexity, in this sense, is thoroughly disempowering for the masses.

The third, related point is immediately to caveat the second by saying that such impotence is by no means a *necessary* outcome of perceived financial complexity. But

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(perceived) complexity breeds the impression of impotence: so, if many people are indeed neutered by the complexity imparted to finance (point two), there are others who *could* do much to demystify finance if only they did not allow the appearance of complexity to forestall them (point three). Many different types of people inevitably fall into this latter category – and this paper is a call to critical human geographers to ensure that they do *not* – and it is hard to argue that any individual stakeholder group is entirely blameless. Indeed the astute *Financial Times* columnist Gillian Tett (2008) suggests that we have all, to one extent or another, allowed the veneer of complexity to tranquilize us: 'politicians and voters' alike, she claims, 'have been shockingly lazy in trying to understand finance – or even just asking why they were suddenly finding it so easy to get access to cheap cash. Much of the media has been remiss too.'

Fourth, and finally, we need of course to ask how these politics and poetics play out specifically within academia. Galbraith, after all, pointedly included 'those who teach about money' within the ranks of 'fraudsters' (his word) profiting, in one way or another, from the complexification of finance. Whether or not we fully agree with Galbraith, it would be difficult to argue that scholars are entirely immune from the tendency to make things sound more complicated than they actually are. Be that as it may, I think a more important point can be made here. For it is notable that more or less every review of geographical scholarship on money and finance and every introductory text on the same matter that has been published in the past 15 years starts with the observation that, as Philip Sarre (2007: 1076) most recently put it, the number of geographers studying finance has been 'relatively few in relation to [the] importance' of the subject (see also Corbridge *et al*., 1994; Leyshon and Thrift, 1997; Martin, 1999). At least part of the reason for geographers' under-engagement with finance may be that we, as a disciplinary assemblage, have *assumed* the complexity ascription to be correct; and Sarre, in fact, comes close to suggesting this when mooting that perhaps it is 'the unfamiliar language' of finance that wards geographers off. No doubt there are other reasons, too (see, for instance, Barnes, 2001, on economic geographers' lack of training in formal economic theory), but if indeed our swallowing of the complexity dogma is part of the explanation the need to debunk the myth becomes stronger still.

III Complexity and the financial crisis of 2007–

In introducing this paper, I noted that it is intended to counteract two powerful tendencies in commentary – critical or otherwise – on contemporary finance: the tendency to (literally) shut one's eyes to the nature of prevailing financial structures and processes in the conviction that they *cannot* be readily understood; and the tendency, at the same time, to lay all economic ills at the door of this unfathomable complexity. The need to rebuff these tendencies is particularly pressing since both have been explicitly apparent across the gamut of commentaries on the crisis afflicting international finance since mid-2007.

The first I will address only very briefly. I do so partly because I have already mentioned this tendency in the previous section; Tett's castigation of our collective 'shocking laziness' in coming to grips with modern finance is a statement on precisely the form of disengagement I am speaking about. But the other, more fundamental reason for not needing to detail such disengagement at length is my strong suspicion that readers will be entirely familiar with it. To simply accept, and hence not interrogate, finance's avowed complexity may or may not be a 'natural' response, but it is clearly an exceptionally common one, even among those with an otherwise critical and curious mind. One can readily identify this exact disposition in the majority of the thousands of commentaries on contemporary financial crisis that have already appeared in print. Voices that

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should be able and eager to burrow beneath the umbrella of complexity have all too often proven reluctant or unwilling to do so. Hence, inter alia, we find the likes of Hugh Osmond (2008), executive director of the UK's large and influential Pearl Group, raising the issue of 'SIV's, CDO's, CLO's, CDS's' but then going no further than acknowledging them as 'instruments of fiendish complexity'. Indeed, even critics who *have* sought to question the complexity premise are occasionally still trapped by its allure, Robin Blackburn – whose line of questioning I turn to shortly – seemingly remaining somewhat awed by 'these amazingly complex financial instruments' (Blackburn, 2008: 94).

The second tendency, however, which is not only to subscribe to this complexity but to *blame* it for the crisis that has developed, warrants closer consideration. To the degree that there is an emerging consensus about the causes of the crisis, a shared conviction about the dangers of modern financial complexity is, we can see, absolutely central. It is a conviction shared alike by journalists, politicians, regulators and, in many cases, financiers themselves, and it appears in debate that leans both to the left and to the right. But there are, I will argue, at least three critical problems with this view of things.

Before identifying these problems, it is helpful first to reproduce briefly a short sampling of the discourse in question in order to illuminate something of its general tone and the range of sources from which it emanates. Thus, one finds extremely influential (*Financial Times*) columnists opining, with hindsight, that the 'bizarre degree of complexity in financial markets was bound to lead to trouble' (Gapper, 2008b); equally influential economists concurring that it is 'complex derivatives' that 'have really done serious damage' (Bootle, 2008); politicians, in the form of the UK's Treasury Select Committee, accusing investment bankers of precipitating the crisis by creating 'ludicrously complex financial products which you need a Nobel prise in physics to understand' (cited in Litterick, 2008); and, perhaps most materially of all, the European Central Bank (ECB) concluding that it was primarily the 'complexity of securities' that 'fuelled' the credit crisis (Institutional Investors Network, 2008).

The first of the three problems with this argument that I discuss here is a problem of presumption. Weaved seamlessly through the discourse that blames complexity for crisis is the explicit premise that complexity caused crisis because it created *incomprehension*. The economist just cited – Roger Bootle – for instance says that 'scarcely anyone understood' the 'complex derivatives' that precipitated crisis, 'including the traders who traded them and the bankers who held them on their books' (Bootle, 2008); others have noted that such incomprehension then spread upwards and outwards, first to 'bank boards and bank executives', who 'have failed to understand complex … banking products' (Plender, 2008); and, indeed, the argument ultimately encompasses all key stakeholders in the finance system, in the sense that banks are said to have '*made* it impossible for [regulators] to understand their business' precisely 'by embarking on ever more complex schemes and developing more and more complex products' (Moulton, 2008, my emphasis). Yet missing in all such cases is any form of substantiation: which is to say, *how do we know* that traders, investors, bank boards and financial regulators did not understand the avowedly 'complex products' being created and marketed by bankers? Incomprehension is *presumed*, but nowhere corroborated. In all the vast commentary on the crisis, and for all the accusations of comprehension being strangled by complexity, I have encountered not a single case of a market participant acknowledging that she or he did not understand what they were buying, selling, or regulating. Pride, perhaps, could account for this, but my own impression, based on interviews with people in the industry, is that most participants actually understood quite adequately the nature of the products in

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circulation. They may well have misjudged market developments or miscalculated asset values or mispriced risk; but, whatever else they may be, such 'errors' do not amount to a failure of understanding of the essential constitution of financial instruments. Robin Blackburn (2008) makes a similar case:

> The banks knew how to assess the problems of the CDOs, because they had helped package them. Their in-house Finance PhDs had enough information to know – whatever the complexity – just how dubious these assets were. (Blackburn, 2008: 95)

The second problem with ascribing responsibility to complexity is that it turns the abstract into the real, the conceptual into the concrete – that is, it *reifies*, and gives agency to what is ultimately just a property or quality of a product, and *not* something with causal powers. A recent article in the widely read *BusinessWeek* magazine, ironically entitled 'The financial crisis blame game', indulged seemingly unwittingly in its own exercise in scapegoating when positing that 'complexity made the entire [financial] system extremely fragile' (Steverman and Bogoslaw, 2008). But can complexity 'make' anything, and if so, what exact mechanisms are involved in such rendering? This may seem like an academic question (academic as in hypothetical), but when the reification is *itself* made concrete, its pertinence becomes obvious. A most striking example of this can be seen in the – to my mind – farcical argument made by the *Financial Times'* John Gapper (2008b) that during the multiyear bull market that preceded the crisis of 2007 'complexity produced yield'. Reviewing the question of why some of the financial instruments that have subsequently been implicated in fomenting the crisis (and which we turn to in the next section) paid investors particularly high interest rates, Gapper believes the answer is obvious: 'Of course … these securities paid a higher yield … precisely because they were complex. Investors got paid more to hold them because they were so difficult to understand.' But in reality high yield was *not* a function of high complexity, for complexity in and of itself does not *cause*; high yield was, is, and likely always will be, a function primarily of high risk. Mobilizing, reifying and blaming 'complexity', however, allows such real-world dynamics to be actively muddied and hence effectively concealed.

There is one other very important point to note here about this reification of complexity, and about how it serves to obscure. The first way it does so, I have just suggested, is by making the very abstract (complexity) somehow real. But it also obscures by making the very real (financial instruments) somehow abstract – or, perhaps better, abstracted. With the focus of complexity-talk so exclusively on the instruments themselves, those instruments tend to get abstracted or divorced from the economic, social, political and spatial contexts in which they are always, necessarily, embedded; and as the instruments loom ever larger in our imagination those contexts typically recede from view – or disappear entirely. This is a problem I alluded to in the introduction, and which I return to in the conclusion.

The third and final main problem that I associate with the impugning of complexity is that it shifts responsibility. And it shifts responsibility – or, more specifically, *absolves of* responsibility those people and institutions who *did* and *do* have the capacity to actively shape the real financial world – precisely *by* reifying, by turning 'complexity' into a thing with causal powers and hence with its own apparent locus of accountability. In this respect, it may or may not be coincidental that, in many cases, those engaging in the reification of complexity were the selfsame people and institutions *with* such real-world powers and responsibilities: the bankers, the regulators, the politicians. Either way, the latter are clearly relieved of culpability to a significant extent if responsibility can be shifted from the shoulders of people to the domain of a slippery, conceptual property attached to financial instruments. Ponder

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again, for example, the aforementioned ECB argument that complexity fuelled crisis; for if 'complexity' is thrust thus into the spotlight, where on our critical map is the ECB's own monetary policy shunted as a result?

In discussing the widespread tendency to blame complexity for financial crisis, and in explaining some of the reasons why this tendency is so problematic, readers will note that I have focused on commentary by journalists, economists, regulators, politicians, and even bankers themselves – and not on interpretations offered by scholars. As I signaled in the introduction to the paper, this has been a matter of exigency rather than choice: very few scholarly readings of the crisis had been published at the time of this writing in late 2008 and early 2009, and certainly not enough to enable anything like a representative sample to be analyzed. But to conclude this section I want to suggest that, to the degree that such scholarly readings *have* now begun to appear, much the same argument is seemingly being made – sometimes with caveats, and typically in a more nuanced way, yet the same essential argument nonetheless. I will cite just two examples, chosen because one comes from firmly within the 'establishment' (an influential neoclassical economist with a wealth of experience advising and consulting to private and central banks) and the other from explicitly outside it (a critical political economist). For all the variance in outlook and understanding that these two bring to bear, we nonetheless find the former placing much of the blame for the crisis on 'the complexity of the products involved' (Hall, 2008: 30) – meaning that 'too many end investors fail to appreciate the true nature of the risks they run' – and the latter, similarly, castigating bankers for conspiring to 'maximize product complexity to conceal the risks from rating agencies, buyers, and regulators' (Wade, 2008: 31). There is little to distinguish between the core explanations offered in the two papers, and scapegoating complexity is a central strategy in each one.

IV Demystifying money

Once more, we can usefully start out here with Galbraith. 'There is nothing about money', Galbraith wrote in 1975, 'that cannot be understood by the person of reasonable curiosity, diligence and intelligence' (Galbraith, 1975: 15). In this vein, he went on: 'The study of money, above all other fields in economics, is the one in which complexity is used to disguise truth or to evade truth, not to reveal it.' Here, and indeed throughout his work, Galbraith insists on two key principles. One is simply that money is not as complicated as it is made to appear – it can be readily understood *if* one is prepared to think about it. The related implication is that where we *do* find money to be cloaked in a mantle of complexity, that mantle can always be stripped away to leave a relatively straightforward underlying picture.

Yet immediately a question arises. Galbraith wrote these words in 1975; much, clearly, has changed in the world of money in the three decades since; and so, given these changes, is Galbraith's insistence on the 'simplicity' of money still appropriate (if indeed it ever was), or is it now hopelessly outdated, rendered anachronistic by developments such as exponential growth in the markets for those much-maligned financial instruments known as derivatives? My own answer to this question, not surprisingly, is yes: that Galbraith's insistence remains as appropriate as ever, and in fact is probably more salient than it has ever been. Money, even in its most modern forms, *can* be understood, and it *needs* to be demystified.

Nevertheless, it is critical, lest I be misunderstood, to be as clear as possible about what I am and am not arguing. I am *not* saying that there is nothing complex about modern finance. Much about money in the modern world is in fact hugely complex and, in light of this complexity, difficult to understand without the necessary training. Let me give two sets of examples of axes on which complexity clearly exists. First, the *pricing* of financial products is often – but not always,

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I hasten to add – an extremely complicated business. Investors, analysts and traders frequently deploy computerized pricing models that in many cases would be utterly impenetrable to those without deep market knowledge, not to mention formal mathematical training. The most famous example of this is the well-known Black-Scholes model for the pricing of financial options. (Financial options, note, are not complicated things in and of themselves: if one buys such an option one typically buys, quite simply, the right, but not the obligation, to buy or sell a particular financial product for a particular price at a particular date in the future.) The Black-Scholes formula has become a staple of the financial world, but, incorporating five different variables, of which only three are actually empirically observable in the market, it is forbiddingly complex to outsiders. Thus, if, as I suggest below, some of the products that have received so much publicity in recent months, such as the CDOs and the CDSs, are not nearly as complex as has been suggested, methods for pricing them almost certainly *are*. Here, then, John Gapper (2008a) is actually right to effectively throw his hands in the air. 'Lord only knows where [the US government's rescue of the insurance company AIG] leaves us', Gapper wrote, 'since only He knows what a CDS on a CDO is worth'.

Just as financial instrument pricing can be very complex, so can be the *strategies for investing* in such instruments. This statement requires some exemplification. Consider a company that invests in shares issued by another company because it believes those shares will go up in price. That is a patently *simple* investment strategy. But at the other extreme one finds investment strategies that encompass contemporaneous purchases and sales of any number of different financial instruments, with those purchases and sales designed, *collectively*, to deliver the most beneficial *cumulative* outcome – sales of shares in one company, purchases of options on shares in another company, and so on. These, by contrast, are complex investment strategies, usually leveraging precisely the types of complex pricing models discussed above. The stories of some of the most infamous names in financial (mis)management in the past two decades are stories, precisely, of complex investment strategies gone horribly awry: Long-Term Capital Management (with its 'convergence trade' strategy) is one such (on which see especially Dunbar, 1999), Nicholas Leeson and Barings Bank (with Leeson's 'short straddle' strategy) another (Hunt and Heinrich, 1996).[3] But it would be wrong to imagine that such complex strategies exist only in the esoteric world of hedge funds and traders: almost all large corporations depend, to one extent or another, and with varying degrees of complexity, on strategies that seek to limit cumulative risk from fluctuations in exchange rates, interest rates and commodity prices through a series of weighted investments in financial instruments. Hence this is one more area in which commentators on the unfolding financial crisis have been *correct* to signal extreme levels of complexity. Here is Jon Moulton – private equity financier and occasional broadsheet columnist – on the balance sheet of the failed (and government-rescued) UK bank Northern Rock: 'I'm up to speed, [but] it took me an hour to understand Northern Rock's structure. If you go to their website there's 275 pages, 11 layers of debt, interest-rate and currency vehicles. You have to have a first from Cambridge to understand this' (cited in Mathiason, 2008).

On at least two axes, therefore, modern finance *is* frequently characterized by considerable complexity. But, by and large, pricing and investment strategies have *not* been the targets in the commentaries that blame complexity for the present crisis, as my preceding analysis of those commentaries clearly shows; and, equally, Galbraith's argument that money is readily explicable was not, it seems to me, concerned primarily with such considerations (although this latter point is admittedly less clear and supportable than

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the former point about the focus of the current public critique). Rather, what is demonstrably being said now is that the complexity of financial *instruments* is responsible for the crisis – the *form* of these instruments, and not the methods for pricing them nor strategies for investing in them. And it is this argument which, guided by Galbraith's insistence, I believe we need to actively unsettle. For despite the many such new forms and the imposing names attached to them, and despite the aura of complexity with which they have been imbued, it remains the case that these instruments can, *pace* Galbraith, be understood.

In discussing these modern financial instruments and endeavouring to demystify them, I trace here the specific narrative which has been offered by the overwhelming majority of commentators in their attempts to identify and explain the precipitating series of events in the evolution of the present crisis. This narrative, as will be widely recognized, concerns the financing of a section of the US residential property market commonly referred to as the subprime market. It is the instruments constructed to *allow* such financing, and the subsequent investments *in* those instruments, that have been deemed overly complex by the commentators in question. Yet in tracing that narrative I should make it clear that I am not offering a view one way or another on whether that narrative *does* adequately capture the immediate causes of today's crisis. Indeed, the development of such a view is explicitly not the aim of this paper. Rather, I trace that narrative merely because it provides the pertinent context for framing and understanding the types of instruments that, in my opinion, need to be demystified.

The narrative essentially runs like this. For several years up to and including 2007, US banks had been liberally providing home loans to a cohort of US consumers who *traditionally* would have found it much harder, and in many cases impossible, to qualify for such loans, since their credit-worthiness – their perceived ability to ultimately repay those loans – would not have been considered adequate. These same loans, the narrative continues, were often then sold on, albeit not necessarily in their original form, to other banks and institutional investors. The current crisis is generally said to have been precipitated when two recognitions began to come to the fore. The first was the recognition that the loans which had been sold on in this way were much less valuable to those who had acquired them than had previously been assumed; this recognition prompted widespread attempts to sell those loans, and quickly. The second and arguably more critical recognition was that institutions left holding those loans – and hence exposed to the danger of devaluation associated with those same loans – could end up in serious financial trouble; this recognition prompted widespread fear of lending to *other* institutions in case the latter proved to be holders of the loans in question and, as a result, potentially less able to meet their *own* repayment obligations. The upshot of this latter fear was the so-called credit crunch: a massive constriction in lending between banks and other financial institutions triggered by fear of counterparty default.

Where in this narrative, then, do we find the perceived complexity identified by so many commentators and trailed in the previous section of the paper? It is *not* in the original home loans themselves – there is nothing complex about these. Instead, the complexity is said to reside in the financial instruments deployed first to *sell on* these loans, second to protect such subsequent investments *in* those loans, and third to *fund* that secondary investment activity.[4]

I turn shortly to each of these three sets of instruments to show that all can be readily understood without resort to complexity in either language or conceptual apparatus, but before doing so I want to make a much more general – and very simplistic – point about the

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nature of the overall financial constellation we are dealing with. Ultimately, everything in this picture turns on that most basic of capitalist activities: money being lent and borrowed; the creation, that is, of credit. As generations of economists have observed, capitalism could not be what it is *without* credit. At any one time, some people and institutions have more money than they need to fund their own ongoing activities (a surplus), while others have less. The genius of capitalism, appreciated even by that most arch of critics, namely Karl Marx, is to enable those with surplus money to earn *more* money, through interest payments, by lending that money to those with a need to put that money to work. What banks do, in essence, is lubricate that system, for a fee – they are primarily intermediaries or 'market-makers', allowing for a pooling both of the supply of surplus money and of the demand *for* that money, and hence increasing the likelihood that surplus money will find a buyer and those in search of money will find a seller.

Much of the perceived complexity in modern finance stems, it seems to me, from the fact that the credit relationship rarely remains, in this day and age, a simple binary one. In other words, it is seldom the case that where money is lent by A to B, *only* A and B remain parties to the money in question: for B will frequently lend that same money on in one way or another, and the loan that A has made to B will *itself* often be passed on in the form of a new credit instrument. Multiple credit instruments and relationships, therefore, but only one underlying pool of money. This, of course, is precisely what we encounter with the 'credit-crunch' narrative related above: loans being sold on. But in reality there is nothing particularly complex or indeed new about any of this. Here is Adam Smith writing more than 200 years ago on such chains:

> the same pieces, either of coin or of paper, may, in the course of a few days, serve as the instrument of three different loans, and of three different purchases, each of which is, in value, equal to the whole amount of those pieces. (Smith, 1970: 452)

And here in turn is Marx:

> With the development of interest-bearing capital and the credit system, all capital seems to be duplicated, and at some points triplicated, by the various ways in which the same capital, or even the same claim, appears in various hands in different guises. (Marx, 1981: 601)

Today, the chains may be longer and somewhat harder to untangle, and yet in principle the replications they entail are no different from those identified by Smith and Marx.

This is *the* critical point to bear in mind as we consider the particular monetary chain depicted in the credit-crunch narrative – the fact that all we really have here is the same money being lent and borrowed a number of times, with lenders each seeking to make a return on their investments in their respective borrowers. But if, in the background of this recognition, the great political economists of earlier centuries loom, my view is that the most helpful guide in allowing us to *trace and critically interpret* the materiality of these intertwined circuits of money capital is a contemporary geographer: David Harvey. In *The limits to capital*, Harvey devoted two chapters to explaining Marx's writings on credit and seeking to fill in some of the many gaps. For at least three reasons, his analysis can be enormously powerful for any attempt to demystify the world of today's 'complex' financial instruments. First, he emphasized, as I have done in his stead, that our focus should *always* be on credit, for this is what such instruments ultimately amount to, and because the credit system is in many respects the 'centerpiece within the Marxian jigsaw' (Harvey, 1982: 239). Second, he insisted, much like Galbraith, that, for all its semantic sorcery, 'the credit system does not operate by magic' (p. 272). And, third, he was at pains to demonstrate, following Marx (and

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Smith), the central fact that multiple institutional credit relationships between a 'hierarchy of institutions' (p. 280) are very often predicated on the circulation of *one* underlying pool of money capital. As such, Harvey's theorization of credit underpins both the spirit and specifics of the brief exercise in defetishization that follows.

If, then, the 'start' of the monetary circulation process depicted in the credit-crunch narrative consists of money being lent to US consumers to buy their homes, the first alleged instrument of complexity is the tool used to *sell on* those initial home loans, called a CDO (collateralized debt obligation). There is, however, nothing magical or intimidating about a CDO, and this becomes clear if we consider what it comprises and how it comes to be.

When a financial institution provides a home loan to a consumer, that institution acquires, in the process, an asset: the consumer's promise to pay it certain amounts of cash at certain times in the future. The most obvious option then available to the institution is simply to hold onto that asset and collect the ensuing cash flows. Another option is to sell the asset on in exactly its existing form, ideally for a profit. But it can also sell the asset on in a *new* form. One way to do this is to pool the asset in question with other similar assets – creating, effectively, one large series of promised future cash flows from a wide range of different sources – and then segment the single resulting asset bundle into a manageable number of smaller sub-bundles. The favoured approach to this segmenting process has been to group the future cash flows, and thus the assets, by their perceived riskiness, creating, for instance, a safe group (or 'tranche'), a middle group, and a risky group. Those tranches – the so-called CDOs – are then sold on separately, paying different interest rates, to different sets of investors (pension funds, other banks, hedge funds, etc) with different appetites for risk. Figure 1 captures this 'securitization' process graphically.

So what actually *are* these CDOs? They are nothing more or less than the original home loans, but packaged up. This is quintessentially money, in Marx's words, 'duplicated': the same capital appearing, *precisely*, 'in various hands in different guises'. And the fact that CDOs are ultimately the selfsame original home loans is clearest of all, it seems to me, in the name they have been given. For what is a home loan or mortgage *itself*, if not a collateralized debt obligation? It is clearly a debt; it is clearly collateralized (the collateral being the home); and, as anyone with such a loan will testify, it is, quite clearly, an obligation.

If the CDO in reality possesses none of the fiendish complexity invariably pegged to it, what of the second set of instruments painted in these same terms: that is, the instruments used to protect investments *in* CDOs? The specific instrument in this class that has received most negative publicity in recent months is the CDS, or credit default swap, so it is on the CDS that I focus here. In the credit-crunch narrative we have been examining, it is the institution investing directly in CDOs – and hence, I have shown, *indirectly* in the original home loans – that may choose also to buy a CDS. When it buys the CDS, this institution agrees to make a series of periodic payments to the seller of the CDS, which will be another financial institution. In return, the seller agrees to provide a single pay-off to the buyer *if and only if* the underlying credit instrument (here, the CDO) goes into default: if, in other words, sufficient numbers of home owners stop making their mortgage payments. The term 'swap' is slightly misleading here, but is used because the two counterparties to the instrument are essentially swapping the underlying risk, with exposure to said risk being transferred for a fee from the buyer to the seller in exchange for the promise of a payout.

If this arrangement sounds complicated, it should not, for, boiled down to its essence, the CDS is simply an insurance contract. When we as consumers take out insurance,

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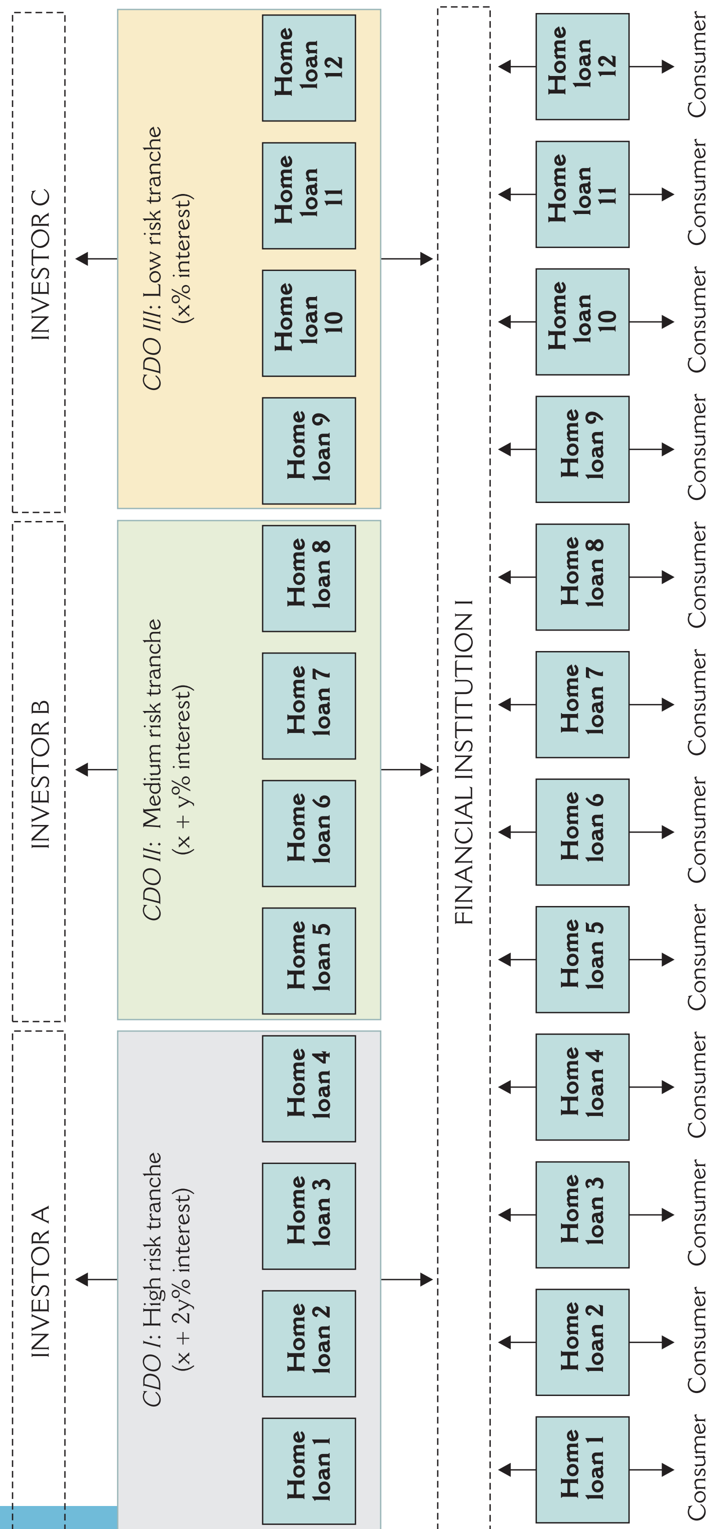

Figure 1 From home loans to CDOs

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we pay a periodic premium to the insurance company on the understanding that if the event against which we are insuring ourselves comes to pass we will receive a payout from the insurer. The investor in the CDO is simply doing the same thing. The forbidding phrase 'credit default swap' may make the contract *sound* like much more than that, but it is not; after all, if the CDS is a 'swap', so, too, is our basic car insurance policy, since we are transferring to the insurer, for a fee, exposure to risk of accident, fire or theft. In the world of *consumer* finance, of course, an insurer's marketing department would shudder at the prospect of peddling a product called, say, 'hazard crystallization swap', but the poetics of *business* finance respect an entirely different set of logics.

The third and final subprime-implicated instrument that I have suggested requires demystification is the instrument commonly used by investors in CDOs not to protect that investment, but to *fund* it. For it will not always be the case that such investors simply have sufficient cash on their books to meet the CDO investment cost. More often, they will need to raise the necessary finance, and the instrument used to do so in many such cases has been *asset-backed commercial paper* (ABCP).

What is ABCP? It is, lo and behold, simply another type of loan – another form of credit. The term 'commercial paper' is used to distinguish this type of loan both from the more familiar lines of credit that banks extend to businesses, and from the corporate bonds also issued by businesses to raise capital, but in reality the line between the three is a fuzzy one. (Commercial paper typically has a shorter lifespan – is repaid earlier – than bonds; and, unlike normal credit lines, it is an instrument available only to large banks and corporations, and is acquired by institutional investors rather than banks.) The bottom line is that to issue commercial paper is to take out a loan – its issuers borrow money, pay interest, and then repay the capital. To issue *asset-backed* commercial paper is to take out a loan with – the same word again – *collateral*. In the case of the narrative we are considering here, that collateral is the CDO, for it is to purchase the CDO that the paper is being issued, and it is the CDO that sits 'back' of the loan as its putative security.

In sum, therefore, while the story that has been told of the origins of the credit crunch may *appear* to be a very complex one – and, as we have seen, it has been heavily and roundly criticized for being exactly that – it is ultimately just a story of loans (ABCP) being made on loans (CDOs) being made on loans (residential mortgages) (Figure 2). The same capital 'triplicated', as Marx would have it; or residential property, in Adam Smith's words, 'as the instrument of three different loans'. Each loan has a different name, a different set of counterparties, a different maturity period, a different price, a different value, and even a different *immediate* collateral. But the *ultimate* collateral underlying all of these interconnected loans was the US residential property market – indeed, setting out these interconnections graphically, as in Figure 2, illustrates quite clearly that the institutions ultimately funding consumer investment in that market were not the issuers of mortgages or of CDOs, but the buyers of ABCP and whoever was funding *them* – and when that market began to fall in value, the narrative tells us, so this credit pyramid rapidly began to crumble.

There are of course many lessons to be learned from this story. The one I have tried to emphasize here is that the complexity attached to modern finance both by those who practice it and those who write about it does nothing to reveal its truths. Rather, as Galbraith so forcefully insisted, it shrouds and conceals them. It is with one of those truths that I conclude this section, chosen partly because amid all the recent talk of complexity it has gone, to the best of my knowledge, largely undiscussed, and partly because the *simple* charting of monetary flows in Figure 2 brings it into clear focus. This truth is that there are now not just multiple credit

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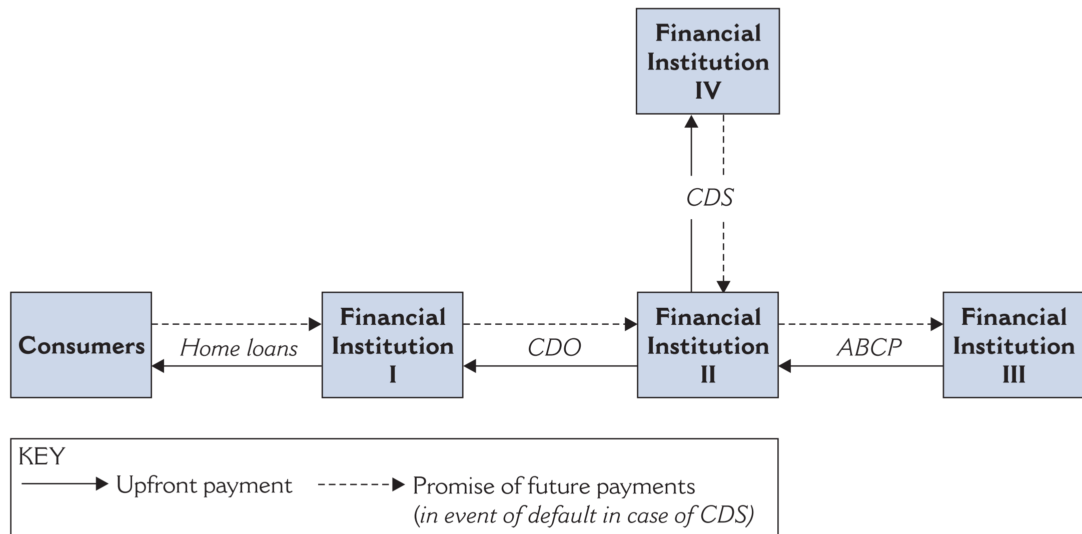

Figure 2 Funding the subprime mortgage market

relationships constructed on single pools of money, but multiple financial institutions embedded in those relationships – at least four in the case of the CDO/CDS/ABCP nexus we have been discussing (and more still if one factors in the special-purpose and structured investment vehicles established by those institutions; on which see note 4). Yet the more institutions there are passing *finite* amounts of money back and forth, with each such institution determined to extract its own return on capital to satisfy shareholders, the greater the *cumulative* demand that is obviously made on that finite money – requiring greater risks to be taken to sustain returns while underlying markets are rising, and leading to significantly more (and more widespread) damage when those markets collapse.

V Conclusion

I hope to have gone some way in this paper towards demonstrating that modern finance in general, and in particular the areas of finance seen to be implicated in the ongoing crisis in the developed world's financial markets, are not as complex as they are typically made to seem. In doing so, I have, simultaneously, sought to suggest a closely related point – which is that much that is *said* to be new about contemporary finance is new only in respect of appearance. These arguments are prompted, in part, by my belief that the only viable route to understanding and potentially improving modern financial structures and systems is through stripping away the language and ambience of complexity that increasingly envelop them – through disabusing ourselves of the idea that complexity 'naturally' adheres to finance.

In some quarters these arguments are likely to be deemed tenuous or perhaps even entirely wrongheaded. For, as I have intimated, our collective belief in the complexity of the financial world is both deep-seated and more or less pervasive. It is a belief shared, in fact, not only by commentators who largely accept the political-economic status quo but by many of those who explicitly contest it. We have seen this, above, with the Marxist critic Robin Blackburn; it is apparent, too, within contemporary radical geography. And it is arguably not surprising: Marx himself, after all, is famed for writing of capital's

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'metaphysical subtleties and theological niceties'. Thus the geographer Geoff Mann (2009: 123), in his own thoughtful response to Blackburn's reading of the financial crisis, argues that 'mystification is the very mode of being of capital'. But is it? I am not convinced, and would posit rather that mystification is the very mode of *self-expression* of capital – or at least, of finance capital. Claudio Minca (2009: 179), I think, comes closer to the truth than Mann when he suggests that what is 'mystical or even magical' is *not* finance capital itself but the 'aura of mystery' that surrounds it.

Where I agree with Mann, nevertheless, is on the question of why and indeed how we need to understand contemporary finance capital (be it complex, mystifying, or otherwise) and the types of credit instruments that characterize it. As Mann points out, the dominant explanations for today's crisis, such as those I referred to earlier in the paper, tend to focus purely on the instruments themselves – on, in Mann's words (2009: 121), 'proximate causes' and 'technical mechanics'. Those instruments are, classically, 'too complex'. But focusing on the surface mechanisms tends to blind one to – or at least veil – 'deeper dynamics' (p. 122). For Marx, and of course for Harvey, the key was and is to look at credit in the broader contextual terms of what Mann calls capitalism's 'historic-structural movement' (p. 121), implying that today's crisis should be seen as but 'part of a crisis in the value-form of capital' (p. 122). And that is essentially how Harvey interprets it.[5] We need, in other words, to understand not just the financial instruments themselves – my focus in this paper – but their entanglement in the processes, relations and spaces of capital accumulation. This, it seems to me, should constitute the nub of further research by geographers. For much of the power of complexity-talk derives from the fact that, through reification, it *obfuscates* those processes, relations and spaces. As I noted in the introduction, it de-spatializes; but it *also* de-historicizes and de-socializes.

Alongside the presumption that finance is by its very nature complex, the other argument I have explicitly tried to unsettle in this paper is that complexity *causes* finance's legion instabilities. The primary basis for refuting the latter argument is of course an eminently straightforward one: for if finance is not in fact as complex as it is made out to be then it seems highly unlikely that complexity causes its crises. But there is another important point to be made here. To be sure, it is wrong to impute complexity where complexity does not exist, or where it is at best marginal; but where complexity *does* genuinely exist it is *equally* wrong, in my view, to assume that it is a sinister or malignant quality, an inevitable progenitor of crisis, and that it therefore needs to be weeded out. Damning complexity without assessing its materiality is as intellectually naïve as 'seeing' it in its absence. In this respect, then, I find myself agreeing with Davide Sola and Paul Stonham (2008: 70) when they argue, against the grain of most of what is currently being written on the financial crisis, that 'the complexity of … financial products is not a barrier in itself as long as investors can clearly identify their exposure and are confident that pricing reflects true market risk'.

On a similar (and final) note, while this paper is anything but a critique of complexity *per se*, neither, on the flip side, is it an argument *for* wholesale simplification and standardization in either language or analytical endeavour. I do believe, as I have made clear, that many of the neologisms and other poetics used in contemporary finance serve to obscure more than they reveal, but policing is assuredly not what this paper is concerned with. I am, for instance, acutely aware of the fact that the injunction to 'speak plainly' often issues from those who, in Derek Gregory's (2005) words, 'insist on normalizing a particular mode of address and analysis' precisely because they are threatened by the politics that an alternative mode – an alternative poetics – licences. And there are, I recognize, plenty of areas of life where a difficult, complex and perhaps

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even opaque language can be *necessary* – to generate new insights, to think the unthought, to dislodge dogma. My argument here is simply that finance is not one of them.

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Notes

1. It is increasingly clear, at the time of writing of this final version of the paper, that the crisis afflicting the world economy has spread *beyond* the sphere of finance into many other sectors, prompting commentators to speak about economic 'recession' or even 'depression' instead of, or as well as, *financial* crisis. This paper, however, was first written to be – and remains – focused on the originating financial crisis and the ways in which *it* has been discussed.
2. I say 'surprising' since Galbraith was a Keynesian economist, and the theories of Marx (Harvey's inspiration) and Keynes have not always been seen as compatible. Furthermore, Harvey (2009a) has gone on record as saying that in response to the current crisis he does not support 'a return to the Keynesian model of the sort we had in the 1960s'. That said, Harvey (eg, 1982: 77–78) *does* see definite parallels between theoretical Marxism and Keynesianism; and, interestingly, in his recent response to the economist Brad DeLong's attack on his own critique of the US administration's economic stimulus package, Harvey (2009b) explicitly nodded in Galbraith's direction: 'I don't see why I should go back to Friedman rather than to Galbraith, Hicks rather than Joan Robinson and why it is that he [DeLong] presumes that Dobb, Sweezy, Glyn, Itoh and Morishima have nothing to say of relevance to our current difficulties.'
3. A 'convergence trade' typically involves buying one financial product and simultaneously selling another *closely related* (but not identical) financial product at a time when the prices of those two products are substantially different. This is done in the hope and expectation that the prices will ultimately converge. A 'short straddle' involves the simultaneous *sale* of two options: the first, an option to sell a particular financial product for a particular price on a particular date; the second, an option to buy the exact same product for the same price at the same date. This strategy is profitable only if there is little movement in the price of the underlying product between the date of the sale of the option and the date that the options expire. Leeson's short straddle involved selling options on the Nikkei stock index.
4. Complexity has also been identified and criticized, albeit to a lesser extent, in respect of some of the *corporate vehicles* established to execute and house such investments, and although these vehicles are not my focus here a brief comment on them may provide helpful context. (Criticism of such vehicles has in fact focused more on their *alleged* abuses – including tax avoidance and hiding losses – than on their complexity.) The two most frequently mentioned are special-purpose vehicles (SPVs) and structured investment vehicles (SIVs). SPVs (on which, see especially Gorton and Souleles, 2005) come in many forms and are set up for many different reasons, but, in the context of the subprime narrative, this was the ascription commonly given to arm's-length financial entities set up by issuers of home loans specifically to accommodate the pooling of those loans and their repackaging into CDOs, with these entities doing the work of collecting cash from borrowers and passing it on to the buyers of the various tranches of securitized debt (see Figures 1 and 2). SIVs, meanwhile, were entities set up by investors *in* CDOs both to actively manage those investments and to issue the commercial paper required to fund them.
5. In short, as a classic crisis of over-accumulation and surplus capital absorption. 'I think there has been a serious problem,' Harvey said in a recent interview (2009a), 'particularly since 1970, about how to absorb greater and greater amounts of surplus into real production. Less and less of it is going into real production, and more and more into speculation on asset values, which accounts for the increasing frequency and depth of the financial crises we've been having; they are all crises of asset value.'

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