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UNCERTAINTY, CONVENTIONAL BEHAVIOR, AND ECONOMIC SOCIOLOGY

by
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INTRODUCTION

Economic sociology is often described as the application to economic phenomena of explanatory models drawn from sociology (Smelser 1963: 27-8; Smelser and Swedberg 1994: 3). However, as a number of commentators have observed, this characterization begs the question of which social theory ought to form the basis for the sociological perspective on the economy⁽¹⁾. In particular, if a determination to do justice to the importance of social structure for economic affairs is one of the hallmarks of economic sociology, then the issue of how to conceptualize social structure and its relation to human agency must be addressed (Granovetter 1985: 481, 506-7, 1992a: 27, 1992b: 27; Swedberg 1997: 162-4; Zafirovski 1999b: 311-312).

We shall attempt to shed some light on this issue by examining two recent attempts to bring social theory to bear on economic affairs, namely the so-called French Intersubjectivist School (Dupuy 1989, 1994, forthcoming; Orléan 1989) and the project of *Economics as Social Theory* most closely associated with the work of Tony Lawson (1997a).⁽²⁾ We propose to evaluate the merits of these two approaches, not in the abstract, but rather by comparing and contrasting their interpretations of the work of the economist John Maynard Keynes on uncertainty and conventional behavior in stock markets. An examination of how the theories of the structure-agency relationship adopted by the two approaches affect their capacity to provide explanatory powerful theories of stock market behavior offers useful lessons about the most fruitful way to develop a social-theoretic perspective on the economy.

Keynes's writings on uncertainty are a good candidate for our purposes for a number of reasons, not the least of which is that they have recently been used as part of a fascinating attempt, reported in a recent issue of this *Journal*, to provide a rationale for sociological reasoning in the analysis of the economy (Beckert 1996)⁽³⁾. Building on Granovetter's (1985) seminal work on the embeddedness of economic action, Beckert (1996: 803-4, 815-7) argues that the most appropriate point of entry for sociological theory into economic analysis lies not, as is often supposed, in a critique of the narrow and distorted conception of people's motivations provided by economists' instrumental notion of rationality (Sen 1977; Etzioni 1988, Lane 1991), but rather in the fact that the model of *homo economicus* as an expected utility-maximizer is inapplicable to those large swathes of economic life in which economic actors must cope with uncertainty. By situations of uncertainty we mean circumstances in which 'there is no scientific basis on which to form any calculable probability whatever' (Keynes, 1973b: 114), and in which actors are accordingly often reluctant or unable to assign numerical probabilities to events.⁽⁴⁾ And where actors are unable to assign numerical probabilities to the consequences that might issue from their actions, they will be incapable of the instrumentally rational, expected utility maximizing, behavior that lies at the heart of orthodox economic theory (Beckert 1996: 806-14, 819)⁽⁵⁾.

A question that naturally arises from this line of reasoning is how rational action is even possible in the face of severe uncertainty. How do we, as Keynes (1973b: 114) puts it, 'save our face as rational, economic men'?⁽⁶⁾ The answer to this question, Beckert (1996: 805-6, 808-9, 827-30) argues, is to be found in the existence of 'social devices', including conventions and mimetic behavior. People's reliance on these social devices serves to make their actions more predictable and hence reduces the uncertainty confronting other actors. Thus, contrary to Duesenberry's (1960: 223) well-known aphorism that, 'Economics is all about how people make choices; sociology is all about why they don't have any choices to make', the introduction of explanatory variables that are usually held to fall under the remit of sociology rather than economics is of paramount importance in showing how intentional action remains feasible even in the face of peoples' ignorance of the future (Beckert, 1996: 804-5, 820-1; see also Granovetter 1985: 504)⁽⁷⁾. However, if Beckert (1996: 823, 825-6) is correct to conclude that, 'Uncertainty brings those rules of social life that actors rely on to make decisions to the center of analytical attention ... [and so suggests that] general sociological concepts, which deal with the problem of the coordination of social action and the relationship between agency and structure, can be used for the understanding of ...economic outcomes', the question remains of how precisely these social devices and their relation to human agency should be understood (Hollis 1991: 233-4).

The examination of the two social-theoretic studies of stock market behavior that follows will attempt to suggest how this question might be answered. We begin with a brief review of Keynes's discussion of conventional behavior in the stock market, followed by an examination of the reading of this discussion offered by Jean-Pierre Dupuy, a prominent member of the French School. After identifying some specific problems with Dupuy's account of the formation of stock prices, we go on to argue that the French School's view on conventions in financial markets, important and insightful as it is, is a relatively partial one, and might usefully be supplemented by a wider account of the determinants of stock prices. An alternative account of the structure-agency relationship is outlined, drawing on the work of Lawson (1997), which we believe provides a more satisfactory point of departure for attempting to answer the question of how such prices are formed. The final section introduces concrete examples from an important contemporary contribution on the subject, Robert Shiller's (2000) recent *Irrational Exuberance*.

KEYNES ON CONVENTIONS

Keynes's most well known discussion of conventions occurs in the famous Chapter 12 of his *General Theory* (Keynes 1973a), which is devoted to explaining the instability of expectations about prospective yields on assets and how this is reflected in stock market behavior and valuations. During the course of his account, Keynes asks how the daily, even hourly, revaluation of stocks is carried out in practice, given that investors are generally unable to calculate numerically-definite probabilities of the possible outcomes of their investment decisions. His answer runs as follows:

In practice we have tacitly agreed, as a rule, to fall back on what is, in truth, a *convention*. The essence of this convention- though it does not, of course, work out quite so simply-lies in assuming that the existing state of affairs will continue indefinitely, except in so far as we have specific reasons to expect a change (Keynes 1973a: 152).

Later, in his 1937 *Quarterly Journal of Economics* reply to his critics Keynes provides a more elaborate description:

How do we manage in such circumstances [of significant uncertainty] to behave in a manner which saves our faces as rational, economic men? We have devised for the purposes a variety of techniques, of which much the most important are the three following:
(1) We assume that the present is a much more serviceable guide to the future than a candid examination of past experience would show it to have been hitherto. In other words we largely ignore the prospect of future changes about the actual character of which we know nothing.
(2) We assume that the *existing* state of opinion as expressed in prices and the character of existing output is based on a *correct* summing up of future prospects, so that we can accept it as such unless and until something new and relevant comes into the picture.
(3) Knowing that our own individual judgment is worthless, we endeavor to fall back on the judgment of the rest of the world which is perhaps better informed. That is, we endeavor to conform with the behavior of the majority on average. The psychology of a society of individuals each of whom is endeavoring to copy the others leads to what we may strictly term a *conventional* judgment (Keynes 1973b: 114).

These extracts require some interpretative work. In the original passage from the *General Theory*, Keynes seems to be thinking of conventions as a *human practice* adopted by individual human actors, namely that of projecting 'the existing state of affairs' to achieve an image of what the future might look like (and adjusted for the possible impact of events that we have specific reason to expect). This idea is repeated in point (1) in the passage drawn from his 1937 *QJE* article. Clearly there is nothing to restrict this practice to predicting social phenomena. It might equally be applied to such things as predicting the weather. Point (2) goes on to locate point (1) in the specific context of asset markets. The idea here seems to be that in 'accepting' current valuations as a correct reflection of the market's assessment of future prospects, investors repress the disturbing fact that these valuations are unlikely to be uniquely correct. They ignore the impact of the factors they (can) know nothing about, in other words, and concentrate only on possible 'changes in the news' that may affect prices. Finally, point (3) brings in explicit mimetic behavior, market participants attempting to cope with the fact that they do not have a clear idea of what the future holds by endeavoring to conform to the behavior of the majority on average.

Two things are worth noting about Keynes's discussion. The first is that in the context of financial markets, (2) and (3) lead to prevailing prices in some sense reflecting an aggregation of the views of market participants (although, as we will go on to argue below, this need not necessarily or not only involve market participants 'stepping into the shoes' of others in attempts to see the world from the others' point of view). The second is Keynes's emphasis that the 'conventional method of calculation' (in the sense of points 1) and 2) above) is compatible with a considerable degree of stability and continuity in our affairs 'so long as we can rely on the maintenance of the convention':

For if there exist organized investment markets and if we can rely on the maintenance of the convention, an investor can legitimately encourage himself with the idea that the only risk he runs is that of a genuine change in the news over the *near future*, as to the likelihood of which he can attempt to form his own judgment, and which is unlikely to be very large. For, assuming that the convention holds good, it is only these changes which can affect the value of his investment, and he need not lose his sleep merely because he has not any notion of what his investment will be worth ten years hence (Keynes 1973a: 152-153).

How then does Keynes account for what we have said his chapter 12 is primarily about, namely the instability of stock markets? Somewhat paradoxically, it turns out that this instability is also rooted in the conventions that he describes. There are two issues here. The first is that beliefs formed on the basis of the assumption that the future will be much like the present, particularly where these extend over longer horizons, are typically based on information that is highly limited relative to what will become known with the passage of time. In the language of Keynes's *Treatise on Probability*, the 'evidential weight' of the information on which such judgments are based is low. In his *General Theory* Keynes (1973a: 148-154) suggests that the confidence investors have in their beliefs about the future varies directly with evidential weight and, accordingly, where evidential weight and confidence is low, that these are susceptible to sharp and sudden changes in response to new information. The second issue is

connected with the mimetic type of behavior that Keynes describes in point (3) above, namely that the practice of 'attempting to conform with the majority on average' may itself be destabilizing of ruling valuations. In particular, the liquidity provided by asset markets allows market participants to concern themselves, not with attempting to judge the probable long-term yield of an investment, but with attempting to profit from predicting 'changes in the conventional basis of valuation a short time ahead of the general public' (Keynes 1973a: 154).⁽⁸⁾ Where speculative behavior of this kind becomes rife, stock market prices may be driven from the levels associated with existing conventions (which may or may not correspond to their objectively-warranted 'fundamental' values).⁽⁹⁾ Keynes illustrates the processes involved with his famous beauty contest example:

...professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practice the fourth fifth and higher degrees (Keynes 1973a: 156).

The point that Keynes is making here is that any attempt to judge who is objectively the prettiest candidate is irrelevant. What matters is what the other contestants believe, and therefore what the other contestants believe the other contestants believe, and so on. In the context of stock markets processes of this kind may have serious consequences. For rather than the economic fundamentals external to the stock market somehow being uniquely and correctly reflected in stock prices, stock prices affected by speculative play on stock markets may well impinge on and distort what goes on in the 'real economy'.

In summary, then, (1) and (2) are instances of simple inductive behavior, (2) restricted to the case of asset markets. Point (3) entails something more than this, since it involves market participants explicitly relying on the opinion of others (whereas this reliance is only implicit in point (2)). Keynes's three conventions are compatible with (and may even contribute to) stock prices remaining more or less constant over time, provided that market participants feel that they can rely on existing valuations being maintained over the near future. But this stability is of a tenuous kind, highly prone to being disturbed by 'changes in the news' and the activities of speculators attempting to anticipate changes in the mutually reinforcing beliefs of market participants. Where the activities of speculators who attempt to profit from such changes in beliefs become dominant, existing valuations may be destabilized.

THE FRENCH SCHOOL ON KEYNESIAN CONVENTIONS

Some of the best work on the nature of social conventions in recent years has come from members of the French Intersubjectivist School (e.g. Orléan 1989 and Dupuy 1989, 1994, forthcoming).⁽¹⁰⁾ The guiding idea in this literature is that conventions are formed and sustained by people attempting to decide what to do in a situation, what value to assign to a variable, and so on, by attempting to gauge and replicate what other people are doing or thinking in that same situation. Self-referential thinking, imitation and mimetic behavior thus figure heavily in these writings.

Members of the French School cite Hume, the philosopher David Lewis (1969) and Keynes as primary influences (Dosse 1999: 44-5, 80, 251-4, 284-5). Their particular interest in Keynes lies in the fact that some of the phenomena that he calls conventions may be interpreted as examples of what it calls self-referential systems, that is, systems in which the value of some variable is not defined by factors external to the actors making the valuation (as in hetero-referential systems), but is itself the product of the interaction of the actors involved in the valuing process (Orléan 1989: 69). In the context of the stock market, for example, the suggestion is that prices are determined after the fashion of the beauty contest above, by what market participants believe the other market participants think prices will be, by what they believe that other market participants believe that other market participants think prices will be, and so on.

We shall concentrate on a fascinating English-language contribution by a leading member of the French School in which Keynes's treatment of convention is discussed at some length (Dupuy 1989; see also Dupuy 1994, forthcoming). Dupuy's interpretation of Keynes is offered in the context of a more wide-ranging analysis of common knowledge and common sense. The section in which he considers Keynes concerns the notion of 'social order' and begins with the notion of conventions as 'salient' or 'focal point' solutions to coordination games in which there is more than one Nash equilibrium.⁽¹¹⁾ As this idea forms the foil against which Keynes is subsequently compared in Dupuy's discussion it will be useful to remind ourselves what it entails. A simple example of the games that Dupuy has in mind is the game of 'heads and tails'. In this game, two players who are unable to communicate have to choose between heads or tails on the toss of a fair coin. The players obtain a high payoff if they make the same choice and nothing otherwise. This game is illustrated in figure 1 below.

		Player 2	
		H	T
Player 1	H	1, 1	0, 0
	T	0, 0	1, 1

Payoffs (Player 1, Player 2)

It will be evident that the incentives of the two players coincide perfectly. Their problem is how to co-ordinate their actions, given that they cannot communicate and that the game is perfectly symmetric with two proper Nash equilibria (H, H) and (T, T). If the players were to choose randomly without regard to what the other player is doing, they might achieve coordination simply by luck. Their expected payoffs would then be 0.5. As Dupuy points out, however, and as was earlier noted by Schelling (1960) in his landmark book, players in games of this kind often do rather better than this. In the present case, for example, most people achieve coordination by playing heads. A popular explanation of this phenomenon is that in many games certain strategies 'suggest themselves' in virtue of analogies or associations of ideas that connect those strategies to the common experience, culture or psychology of the players. Schelling calls equilibria resulting from choices of 'salient' strategies of this kind 'focal points'.

Dupuy is drawn to games of this kind because they involve what he calls 'specular' behavior, a particular manifestation of intersubjectivity that involves 'the capacity of the human mind to put itself in the place of another and "see" the world from this other party's point of view' (Dupuy 1989: 41). In the two-player variety of games of this kind, Player 1 thus attempts to put himself in Player 2's shoes to gain an idea of what she would do, while Player 2 attempts to put herself in Player 1's shoes to gain an idea of what he would do. But as both players know that each of them are engaging in specular behavior of this kind, they would both have to make their assessments of what the other will do in the light of what the other expects them to do, and so on. What interests Dupuy is that although this kind of specular regress is infinite, people are often able to co-ordinate in games of the kind described above *because* they know that the others are trying to coordinate with them and because they are able to fix on a focal point. In these cases specularly is a stabilizing factor.⁽¹²⁾

Schelling's ideas were taken up in Lewis's (1969) classic theory of conventions as focal point solutions to coordination games that, having attracted the attention of the players, tend to recur. On Lewis's theory both the fact that coordination problems have more than one possible solution *and* the salient solution are both held to be common knowledge.⁽¹³⁾ and it is common knowledge of the salient solution that guarantees the stability of the convention. As Dupuy (1989: 56) puts it, 'The agent's conviction that he should conform to convention is reinforced by his simulation of the reasoning that everyone else performs in deciding to conform to convention.'

How do these ideas relate to Keynes's discussion of convention? The common element in both Lewis's and Keynes's accounts is the role of specular behavior (the French School stresses the mimetic aspect of stock market behavior that Keynes alludes to in point (3) above).⁽¹⁴⁾ Interestingly, however, in an earlier part of the paper in which Dupuy first introduces a version of the beauty contest example (albeit without reference to Keynes at that point) he suggests that players do *not* in fact engage in specular behavior when playing it (Dupuy 1989: 51-52; emphasis added). Instead, they resort to what he calls 'common sense'.

Yet this is obviously not how the players in fact play this game. The socio-cultural group that they make up is immersed in a history, a tradition, a particular world and a particular form of common sense. Each individual has an implicit, unformulated and tacit knowledge of this world, and although this knowledge is not explicit, it is constitutive of the individual's social being. This common sense has been collectively created by individuals, but it nonetheless appears to them *as if* it were an objective reality wholly external to their own making and doing... The 'natural' way to play is clearly for each player to consult his or her common sense, making a judgment without reference to what others might choose. The others are still present in this agent's individual choice, but it is *as if* their views had been crystallized into objects. Mediation by means of common sense makes it possible to obtain with null specularly what logic thought only an infinite specularly could obtain...
... To the extent that the representations of common sense are, as Pascal said, like a "second nature" and seem wholly self evident, we can admit that these beliefs are by the same stroke CK [common knowledge].

Where actors are guided by the standards of common sense, according to Dupuy, they automatically satisfy the actual infinity of conditions required by common knowledge *without* engaging in specular behavior. In situations of this kind they adopt (what they believe to be) external or objective points of reference to guide their actions. Where actors lack such points of reference, there occurs what Dupuy terms a 'crisis of common sense', in which they engage in specular behavior, observing and looking for clues about what those around them are thinking. Here specularly is symptomatic of disorder, in contrast to Lewis's account in which specularly underpins the stability of conventions.

We are now in a position to consider Dupuy's reading of Keynes. Dupuy begins by noting two points emphasized by Keynes: (1) that financial markets are characterized by a radical form of uncertainty not reducible to probabilistic reasoning; and (2) that Keynes 'shows that the only *rational* conduct in such a context is to imitate the others' - on the grounds that, 'If I know nothing about the social context in which I find myself (as in the context of a panic), there is some chance that others may know something, and by imitating them, I may draw some advantage from their knowledge.'⁽¹⁵⁾ This kind

of situation corresponds to what Dupuy calls a crisis of common sense, and Keynes's decisive contribution, in Dupuy's view, was to recognize that the specular mechanisms that lead to it are the same as those that lead to its resolution (Dupuy 1989: 57). Dupuy describes the emergence of a solution as follows:

Suppose that there are two subjects A and B who are engaged in reciprocal imitation. Now, let us imagine that a rumor makes A think that B desires (wants to purchase, long for, etc.) an object, O . Henceforth A knows that he must desire in turn (or wish to but, or long for, etc.). Acting in keeping with this new-found desire, A designates to B that O is the object of his (A 's) desire. When B in turn shows interest in O , A sees this as proof that his initial hypothesis was right. Here we see the emergence of an objectivity or exteriority through the closure of a system in which all of the agents imitate each other reciprocally (Dupuy 1989: 58).

The process proceeds in two stages. During the first, actors engage in specular behavior, each one scrutinizing the others for some sign of the coveted knowledge until 'everyone is precipitated in the same direction' (Dupuy 1989: 58). During the second, the emergent object - a price or set of prices perhaps - stabilizes and achieves an exteriority or objectivity that is achieved through a forgetting of the arbitrariness inherent in the very conditions of that object's genesis' (Dupuy 1989: 58). As Dupuy (1989: 58) describes it, 'the unanimity that was responsible for its genesis projects the object outside the system of specularly for a certain period of time.' There is thus a sharp discontinuity between a convention in this 'Keynesian' sense and the Lewisian one. For what stabilizes the solution or convention, in Dupuy's reading of Keynes, is the group's 'misrecognition' about its genesis and not, as in Lewis, common knowledge. Once achieved, a Keynesian convention blocks the play of specularly. Specular behavior arises at the point at which commonsense breaks down and then disappears again once a new set of conventional valuations are achieved.

The overriding impression one gains from this account is of stock market prices emerging as the outcome of what economists would describe a pure bootstrapping process, that is, one in which prices are the product purely of the mutually reinforcing beliefs of the actors in a system. The specular mimetic process described above, which may be initiated by the merest imaginings of one of the parties participating in it, leads up to the point at which the convention (solution or emergent object) is formed, which is in turn sustained by its newfound exteriority (ephemeral and illusive as this may be). The French School write as if the specular process and the resulting convention may - and indeed often or even usually do - persist in isolation from whatever else is going on in the world. In a recent paper Dupuy (forthcoming) puts it as follows:

The mimetic dynamic for its part is completely closed upon itself. The attractors that it generates are not in any relationship of correspondence with external reality, they simply reflect a condition of internal consistency: the correspondence between *a priori* beliefs and *a posteriori* results. The mimetic attractors are self-realizing representations. Generalized imitation has then the power to create worlds that are perfectly disconnected from reality: at once orderly, stable, and totally illusory. It is this "mythopoetic" capacity that makes it so fascinating.

We shall return to this point below. First, however, we shall consider some problems that arise within the framework we have presented so far.

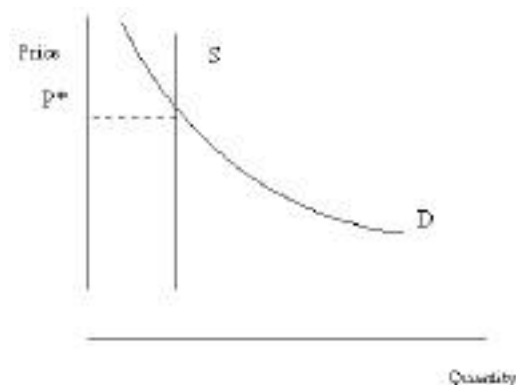
AN INTERNAL CRITIQUE OF DUPUY'S ACCOUNT OF KEYNESIAN CONVENTION

In this section we raise four points against Dupuy's view of 'Keynesian' conventions. The first concerns how the specular process he describes crystallize as conventions. According to Dupuy, conventions emerge at the point at which 'everyone is precipitated in the same direction' and market participants display 'unanimity'. An immediate difficulty that arises here is that Dupuy does not specify what market participants are supposed to be unanimous about, that is, what the object of their judgments is. In particular, it is not clear whether he has in mind that they be unanimous about the direction of future price movements or existing prices. Neither is it clear whether the unanimity he has in mind that he has in mind is in respect of a single stock, or each of a set of stocks or indeed even 'the market' itself.⁽¹⁶⁾ To keep things simple in this section, we shall concentrate on the market for a single stock (bearing in mind, of course, that what happens in the market for any one stock is not independent of what is happening in other markets).

Let us begin with the case in which market participants are unanimous about the *direction* of future price changes, for instance that they all believe that the price will rise in the future. As long as 'unanimity' prevails, in this situation, the price of the stock would tend to continue rising, as everyone would want to acquire the stock in the expectation of capital gains (this would be true if there were no sellers at all, and even if there were a limited number of sellers who wish to liquidate their holding for some or other reason). The trouble is that processes of self-fulfilling expectations of this kind *continue* rather than come to a halt so long as everyone is 'precipitated in the same direction'. Halting the process would require the emergence of a divergence of opinion, such that a sufficient number of market participants take the opposite view from the view that had been dominant before. In other words, in the present case, there must be a significant movement from the bull camp to the bear camp.

It follows that if price stability requires market participants to be unanimous about something, this would have to be about something other than the direction of future price movements. What might this something be? One possibility is that market participants somehow reach unanimity that the specific price of a stock is 'right' at some level, right in the sense that no-one has reason to believe that it should depart from that level. But such unanimity hardly explains how the stock comes to settle at that price, save of course if the price has already been constant for some time and forms the basis of people's expectations of what the price will be in future. Although a 'market' judgment may become self-sustaining in this way once it has been formed, in other words, we are still left without an explanation of how that judgment emerges out of situation in which the price has been moving. To say that the convention emerges when 'everyone is precipitated in the same direction' does not tell us how this would come about, even leaving aside the question of what exactly 'everyone being precipitated in the same direction' might mean.

Our second point is that even when the price of stock has remained constant over some period, this will nevertheless typically still be in the face of a variety of opinion in the market about what that stock is actually worth.⁽¹⁷⁾ Consider the following diagram which depicts an individual market for some stock in which: i) there is no short-selling (implying a supply curve that is vertical at the number of stocks issued); ii) the number of potential shareholders substantially outnumbers the number of stocks issued; and iii) where market participants can hold only one share and no more. A demand curve for the stock can then be generated by ordering the market participants in terms of the maximum they would be prepared to pay for that stock (see Miller 1977 and Runde and Bibow 1998).



Although the ruling price will be determined where demand and supply are equal, it is readily apparent from the diagram that it will be extremely unlikely that everyone will assign a money value equal to this price for the stock in question (if there were unanimity in the present case, and given that the marginal utility of money is the same for everyone, the demand curve would be perfectly horizontal at the relevant price).^{(18),(19)}

Our third point is that the notion of market participants imitating each other is far from straightforward in the context of financial markets. For one thing, suppose that the mimetic process Dupuy has in mind occurs over some period in which transactions are taking place. In this situation there will necessarily be sellers as well as buyers. The question that then arises is how market participants decide on whom to copy, those getting out of the stock or those getting in? Further, the notion of market participants imitating each other may be problematic when they are simply going on the external behavior of others. Suppose, for example, that a casual speculator buys a particular stock on observing some broker doing so. But suppose also that the broker believes that the value of the stock will fall, but is buying it nevertheless because he is managing a tracker fund that needs to acquire more of the stock so as bring the composition of its portfolio into line with the market capitalization of the companies in the index it is tracking. While there is certainly a form of mimetic behavior going on here, it is hardly of the kind that is based on, or results in, convergent judgments about the value of the stock. What is being replicated is the outward behavior rather than the intentions of market participants, and it is surely the latter that the French School would want.

Our fourth and final point is that it is not clear why market participants should suddenly forget the arbitrary way the conventional judgment is formed once it has been established (and reify the price it supports). In the stock market boom experienced of the mid- to late 90s, for example, there were numerous warnings in the popular media on the arbitrariness of market valuations and the possibility of a market bubble (Shiller, 2000: 113-114). Even where stock prices stabilize after a prolonged period of price rises, this surely does not by itself entail market participants forgetting the possibly arbitrary way in which those prices were reached. Further, it is an integral part of Keynes's account of speculative activity that speculators are aware that current valuations are often based on flimsy foundations, and are accordingly driven to attempt to profit from anticipating changes in conventional valuations.

We do not want to deny that stock markets go through periods in which prices remain relatively unchanging. Neither do we want to deny that market participants often use ruling prices as a basis for their predictions about future prices, on the lines that Keynes suggests in points (1) and (2) in the passage quoted above (and which, to the extent that ruling prices reflect the views of other market participants, involves an implicit 'falling back on the judgments of others'). However, it is only the kind of behavior that Keynes goes on to describe in point (3) that involves the explicit form of mimetic behavior that Dupuy and his colleagues have in mind. Now there are clearly cases in which behavior of this kind occurs, such as that which led to the dot.com bubble towards the end of the '90s. But we are sceptical that this kind of behavior is always dominant in stock market or that it leads to market participants becoming 'unanimous' in their views about particular stocks, whatever that may mean. And while we accept that mimetic episodes may sometimes be responsible for driving prices to certain levels, it seems to us that Dupuy has not succeeded in explaining how these episodes produce the market consensus that allegedly mark their end, or why market participants should labor under the 'misrecognition' that he speaks of.

AN ALTERNATIVE SOCIAL ONTOLOGY

We now turn to the deeper question of how the social world is made up. As we have seen, the French School analyses social conventions as epiphenomena of the intersubjective attributions of market participants. The same idea seems to inform its thinking about the constitution of the social world more generally. Where Dupuy (1989: 51-52) mentions actors being immersed in history, a tradition, a particular world and a particular form of common sense, for example, he adds that each individual 'has an implicit, unformulated and tacit knowledge of this world, and although this knowledge is not explicit, it is constitutive of the individual's social being. This common sense has been collectively created by individuals, but it nonetheless appears to them *as if* it were an objective reality wholly external to their own making and doing'. The suggestion that the social world is only 'as if' it constituted an objective reality external to any of the individuals participating within it, or that aspects of it may be 'totally illusory', or 'perfectly disconnected' from reality (Dupuy forthcoming), appears to us to reflect a form of voluntarism, according to which the social world is entirely reducible to the shared beliefs of its current participants (Wagner 1994: 275-6; Dosse 1999: 217, 244, 247-8; Lewis and Runde 2001). We reject this suggestion, and in particular, in the present context, would argue that an account of the stock market that collapses the determination of prices purely into the mutually reinforcing beliefs of market participants, underestimates the impact on prices of various factors external to the beliefs of those actors.

We would accordingly like to propose an alternative view that, rather than seeing the entire social world (and more specifically, social structure such as social positions, rules and relations) as that which is generated at any moment in time through the shared and mimetically-derived attributions of those currently within it, treats social structure and human agency as recursively related, each being a condition for, and consequence of, the other.⁽²⁰⁾ For all human activity appears to depend on ensembles of social structures that are *pre-existing* in the sense that they are the product, not of peoples' present actions and attributions, but of actions taken and attributions made in the past. The activities of speaking and writing, cashing a check and giving a lecture, for example, presuppose and thus are facilitated and constrained by the existence of grammatical structures, the banking system and student-teacher relations of the sort encountered in the university system. These structures, systems and relations are bequeathed 'ready made' to the current generation of agents, confronting the latter as an objective reality that is ontologically distinct from and irreducible to their subjective beliefs and actions. And the fact that such structure pre-exists and is therefore irreducible to the current exercise of human agency implies that it enjoys a certain degree of autonomy from the latter. A person who tries to communicate in Britain by speaking Russian is likely to find that his or her efforts are unsuccessful because, while English grammar facilitates successful communication in the social context of Great Britain, it also constrains one to speak English if one does indeed wish to communicate. Simply wishing that things were different, or acting as if they were, will not make it so. Social structure, understood as pre-existing and therefore relatively autonomous from current human action, is thus able to exert its own, *sui generis* causal influence on human agency (Lewis 2000, forthcoming; see also Granovetter 1985: 495, 507).

Of course this is not to deny that the continued existence of social structure depends upon current human agency. Indeed, it is this dependence that makes it social. However, to acknowledge the dependence of social structure on human activity is not to say that social structure is merely the voluntaristic creation of individual human actors. Current social activity takes place in the context provided by given social structure, inherited ready made from the past. As such, human intentional agency must be understood as acting upon, reproducing and perhaps transforming, pre-existing structure, not as creating it *ex nihilo*.

Note that we are not claiming that human activity is determined by social structure. Just as we would wish to avoid an undersocialized account of social structure that reduces social structure to an epiphenomenon of the agency of atomistic individuals, so too we would wish to avoid the opposite oversocialized extreme in which social structure bears so heavily on people that they have no choice at all (Wrong 1961; Granovetter 1985: 483-87). While a person who is in Britain and who wishes to communicate with other people will usually have to employ the English language to do so, this leaves open the possibility the person in question may be a taciturn character who chooses not to communicate at all. Further, while someone who wishes to communicate with others is compelled to be more or less consistent with the rules of English grammar in order to be understood, those rules do not determine what that person says. There also exists the possibility that the creative use of language (via metaphor, say) will lead to the transformation of the rules governing the use of language. Thus, we would stop short of a reductive materialism in which human subjectivity and agency is no more than a reflection of pre-existent material circumstances.

In summary, according to the perspective outlined here, society is viewed as a dynamic process of interaction between pre-existing social structure and current human agency, through which social structure is reproduced and transformed over time. Of course the individual elements of social structure on which our various doings depend are multi-layered and cross-cutting. And whereas some lie at a deep and generalized level, such as the rules of language, others are more localized, such as the particular positions and associated practices, rules and relations found in a specific workplace. Further, social structure varies in form and constitution, and nothing we have said should be taken to imply that social conventions of the kind described by the French School do not qualify as such. Where we differ from the French School is in viewing such conventions as but one amongst many possible forms of social structure, many of which are more than epiphenomena of the current intersubjective attributions of human actors. And while the French School's emphasis is on social structures that lie close to the surface in the sense of coalescing around something observable,⁽²¹⁾ we would emphasize that much of the social structure is not directly observable or even something, in cases such as complexes of social rules, that we can even fully state (see Runde 2001). In fact, social structure (and its continuous interplay with human agency) is hidden from us most of the time, in the sense that it lies beneath and forms part of the confluence of causes of the constant flow of events and episodes that make for both day-to-day life and the more significant aspects of human history.

CAUSAL EXPLANATION: THE EXAMPLE OF STOCK MARKET BEHAVIOUR

So much for general picture. We shall now attempt to fill in some detail with a particular historical example: the spectacular boom in US stock markets over the second half of the 1990s (mirrored by world stock markets). This episode has attracted widespread attention not only for its possible impact on macroeconomic performance and the structure of the US economy and financial system. It has also once again raised the spectre of a 'speculative bubble' and the question of how it is that the stock prices seem to be capable, or even prone, to becoming detached from the 'fundamentals' that mainstream economics and finance theories tend to concentrate on. And it is this second issue, of course, as well as its analysis in Keynes's writings, that is of such particular interest to the French School.

We shall concentrate on the account of this episode given in Robert Shiller's (2000) recent *Irrational Exuberance*, a book that draws on psychology, demography, sociology and history in addition to economics, and which constitutes an important contribution to the emerging field of 'behavioral finance' (see Shleifer 2000). Besides providing an excellent source in its own right, this book is particularly useful for our purposes for three reasons: first, in many respects it represents a contemporary version of Keynes's vision of the workings of financial markets in general and speculative episodes in particular; second, it is not committed *a priori* to any particular social ontology or theoretical/methodological framework; and third, it is largely consistent with the kind of causal realism and the approach to the provision of meaningful causal explanations adopted by Keynes in Chapter 12 of *The General Theory* (and which we favor: see Lawson 1997a; Runde 1998).⁽²²⁾ In fact the most significant feature of Shiller's book from our point of view is that it does not attempt to explain the market's climb since 1982, and particularly its extreme behavior and the way that it burst into uncharted territory toward the end of the millennium, in terms of the operation of any single causal factor. Rather he discusses a range of factors, arguing that the extreme nature of the episode is more likely to be the product of a plurality and confluence of causes than the result of just one or two alone.

Institutional/Systemic Factors

One of the most distinctive characteristic of stock markets is that they provide the institutional framework by means of which investments 'which are "fixed" for the community are made "liquid" for the individual' (Keynes 1973a: 153; see also Orléan 1989; Carruthers and Stinchcombe 1999). Liquidity has an important social function because it offers investors the opportunity to revise their judgments and change their investments, and thereby encourages a greater willingness to hold assets that have uncertain prospective returns than might otherwise have been the case.⁽²³⁾ The key point for our purposes is that while we accept that the liquidity of a market depends on most market participants taking it for granted that it will remain liquid over the indefinite future, this is not the same thing as saying that market liquidity can be reduced to, or is constituted by, market participants' beliefs to this effect. For market liquidity is a state of affairs that also rests on range of factors that cannot be reduced to the mere beliefs of market participants, including various formal rules and procedures, accepted ways of doing things, the activities of regulators, even physical equipment, computer programs and so on, that persist through time.

If the institutional environment is a co-determinant of market liquidity, then so will it be a codeterminant of asset prices. Changes in this environment may thus affect prices (indeed one such change has been proposed to dampen speculative bubbles, the imposition of a transaction or 'Tobin' tax,⁽²⁴⁾ which would likely reduce the price of stocks relative to other classes of assets). The same goes for institutional shifts that lie at the edge of the stock market itself. For example, in his study Shiller points to various changes that appear to have increased the demand for equities towards the end of last century, including the expansion of defined contribution pension plans, the growth of mutual funds, the spreading of managers' stock options as motivating stock repurchases, and the expansion of trading volumes due to the emergence of discount brokers, day traders, and twenty-four-hour trading. Further, he suggests that the impact of these changes was likely reinforced by a number of other developments: changes in the prevailing investment culture whereby analysts provide increasingly optimistic forecasts and (as employees of firms that underwrite securities) become reluctant to give 'sell' recommendations; the expansion in media reporting of business news acting like advertisement for the stock market; and the rise of gambling opportunities generally spilling over into financial markets. All of these changes were largely institutional and systemic in nature, to a large extent external to the beliefs of individual market participants engaged in attempting to value stocks. And if so, it follows that the bubble in question cannot be purely the product of an intersubjective dynamic of the kind envisaged by the French School, that is, one that is completely closed in upon itself.

Fundamentals

We have seen that the French School is particularly interested in the idea that mimetic behaviour may drive stock prices from their 'fundamental' values. It accordingly rejects the mainstream 'efficient market theory' that stock prices accurately reflect all public information about economic fundamentals at all times. Shiller, famous for his earlier contributions on 'excess volatility' on asset markets (Shiller 1989), is of course also a well-known critic of efficient market theory. But it is notable that although Shiller allows that asset prices may diverge from fundamental values and that the fundamentals alone cannot account for the historically unprecedented heights of price/earnings ratios witnessed before the recent decline in the market, he acknowledges that changes in economic fundamentals such as unusual earnings growth or falls in real interest rates may nevertheless go some of the way towards explaining price movements (Shiller 2000: 7, 18).

Shiller also considers the possible impact on stock prices of a range of other factors largely external to the stock market, from changes in institutions, technology, regulation and demography, through to changes in culture and politics. Clearly such changes do not affect the market in a direct, mechanical way, but interact with peoples' perceptions of their effects on the market. For instance, Shiller suggests that the arrival of the Internet at a time of solid earnings growth may have had a market impact that went beyond the IT revolution's genuine impact on fundamentals (through the reduction of transaction and information costs), simply because it created such an immediate and intimate impression of the pace of technological change. Similarly, he suggests that triumphalism mixed with patriotic feelings due to the downfall of the Soviet Union and Communist China's embrace of the market may have encouraged the view that even external disasters like Japan's asset market bust of 1989 and the Asian financial crisis of 1997-8 represented not bad news, highlighting the financial risks involved, but good news in the sense of weakening America's rivals. In some instances, Shiller suggests, the market may even have been reacting to erroneous popular theories or beliefs ruling outside of it. The public's perception of the effects on the market of the popular 'Baby boom' theme may have affected the market, for example, even though prevailing theories as to this effect lacked any credibility. Further, money illusion may also have been at play as people tend to interpret low inflation as a sign of economic prosperity, hence inspiring confidence, but continue to expect nominal returns as experienced during more inflationary times. In all of these cases, and while what happens in the world beyond the stock market and investors' perceptions of these events are surely distinct things, investors' perceptions of and beliefs about this world and what is happening within it are far from being unconnected. And as stock prices reflect investor beliefs, we again have a picture of the stock market in which prices depend on more than the intersubjective and mimetically-based attributions of market participants alone.

Psychological Anchors

Even if it is granted that institutional and fundamental factors may have a causal impact on prices in the way described above, this still leaves the question of what ties down the market to a particular level on any given day. We have seen that the French School attempts to answer this question by appeal to the emergence of a concordance of actors' beliefs about some price or set of prices that somehow imbue that price or set of prices with an exteriority that projects them beyond the play of mere beliefs. Shiller himself addresses the question of what anchors the market most squarely in a chapter called 'Psychological anchors to the market'. Against the efficient market theory view that the market is anchored by fundamentals, which rests on the assumption that market participants are at all times fully informed and fully rational, he suggests that:

solid psychological research shows that there are patterns of human behavior that suggest anchors for the market that would not be expected if markets worked entirely rationally. These patterns of human behavior are not the result of extreme human ignorance, but rather of the character of human intelligence, reflecting its limitations as well as its strengths. Investors are striving to do the right thing, but they have limited abilities and certain natural modes of behavior that decide their actions when an unambiguous prescription for action is lacking (Shiller 2000: 136).

Shiller identifies various 'psychological anchors' that, intriguingly, he sees as contributing to the stability of market prices in some cases, but also exacerbating their fragility in others. The first he mentions is what he calls 'quantitative anchors', such as the most recently remembered price, other remembered past prices, or possibly just some convenient number (like the nearest milestone of a prominent index). He regards the most recently remembered price as the 'most likely' anchor, and suggests that 'the tendency of investors to use this anchor enforces the similarity of stock prices from one day to the next' (Shiller 2000: 137).⁽²⁵⁾ This idea is reminiscent of the first of Keynes's (1973a: 152) conventional methods of calculation, namely the practice of basing forecasts on the existing situation, prevailing prices, and so on. And to the extent that existing or recent prices and indices are an aggregation of the beliefs of 'the market', quantitative anchors to some extent involve tacitly falling back on the views of others.

Shiller also identifies what he calls 'moral anchors', the 'intuitive or emotional strength of the argument' for or against investing in the market in the light of alternative uses to which they could put their wealth (Shiller 2000: 136).⁽²⁶⁾⁽²⁷⁾ Drawing on evidence from psychology that illustrates that much of the reasoning that results in action is not conducted in precise quantitative terms but takes the form of narrative-based thinking, attempts to find consistent stories for taking a particular position, etc., he suggests that the 'intuitive force' of these stories relative to how much wealth is currently invested in the market may determine whether a person invest more or less in the market. Added to this is the idea that holding stocks is generally thought of as being sensible or prudent, and so provides a motive/anchor for holding on to stock that applies regardless of the current level of the market. Although Shiller's moral anchors may go some way towards underpinning the day-to-day stability of the market, he echoes Keynes in emphasizing that their occasional fragility may cause dramatic shifts in the market. The source of this fragility is that, rather than continually assessing the validity of their anchors, people seem only to examine them in the face of exceptional events. The consequence is that when anchors do change they tend to do so in a sharp and dramatic way, leading to corresponding shifts in prices.

Mimetic Contagion

Shiller makes no apparent reference to Keynes's views on conventions or any of the theoretical literature on conventions discussed at the beginning of this paper. But he does have a lot to say about what the French School calls mimetic contagion (albeit with a wider view of what it is that market participants engaged in mimetic behavior might be focusing on). We have already noted various precipitating factors that may have combined to set off the bull run of the 90's and the speculative bubble that followed. But speculative bubbles require that the impact of the factors that precipitate them be reinforced and amplified if they are to be sustained. It is at this point that confidence, self-fulfilling expectations and related influences on investor demand for stocks come into play. Here Shiller (2000: 44) cites the standard mechanism of rising stock prices arousing the attention of potential investors, buoying their confidence and expectations, and inducing them to enter the market. Prices rise still further as a result, enticing even more investors, thereby generating further price increases, and so on.

Self-fulfilling processes of this kind may arise in at least three ways: via investors expecting recent price gains to continue in the future; via higher confidence and perceptions of reduced risk generated by past price rises; or via emotions and heightened attention stimulating investors' desire to enter the market and so avoid missing out on 'the only game in town'. The first two channels may be expressed in terms of Keynes's (1973a: 226) 'own-rates' analysis, with bullish expectations concerning the a-term (representing capital appreciation) of stocks driving the process in the first, and higher confidence making investors feel more comfortable about holding stocks even with a falling liquidity premium in the second. The third more purely emotional impulse may be related to what Keynes (1973a: 161) calls 'animal spirits', 'a spontaneous urge to action rather than inaction'. The first channel only works so long as prices continue to rise, the bubble bursting as soon as they stop doing so.⁽²⁸⁾ But the other two channels may lead to prices stabilizing at higher levels without the bubble bursting - unless a sudden change in sentiment occurs that knocks out confidence and animal spirits.

The analyses of Shiller and the French School intersect most closely on the first of these three channels. Both argue that it may be rational for individuals to engage in mimetic behaviour when deciding what to do in situations of uncertainty, even when everyone knows that everyone else is doing the same thing (and where such behavior may result in socially 'irrational' outcomes). What we have here is essentially the third of Keynes's three conventions or techniques, the like of which has also been modeled using economists' standard rationality assumptions (e.g. Banerjee 1992). As illustrated by Keynes's beauty contest example, this kind of convention may easily lead to prices diverging from what the fundamentals might justify. In this case it is not irrationality or limited intelligence that undermines the efficient market theory view of stock market prices reflecting investors' assessments of their fundamental values, but failures in information about fundamentals to be evaluated and disseminated (Shiller 2000: 151-152).

Where Shiller's account of mimetic contagion on stock markets differs from that of the French School is in his emphasis on various factors that condition the mimetic process, but which are to some extent external to the beliefs of market participants. For example, he is particularly interested in the role of the news media and 'new era' economic thinking. With respect to the former, and against the view of orthodox finance theory that the news media contributes to stock market efficiency by speeding up the dissemination of information, Shiller provides historical evidence to the effect that the media actively propagates speculative bubbles, both in setting the stage for market moves and as a source of 'attention cascades'. For example, he shows that even facts that were widely known but previously ignored or considered inconsequential can suddenly attain prominence in the wake of breaking news that sets in motion a sequence or cascade of public attention. By 'new era thinking' Shiller means popular perceptions and commentary to the effect that the economy has entered a new phase of growth, usually in the wake of some form of technological development. He shows that 'new era' theories were prominent in fueling earlier speculative bubbles, both in the U.S. and elsewhere (Shiller 2000: 96ff).

Shiller also pays a great deal of attention to evidence from psychology on how difficult people find it to form fully independent judgments in the face of social pressure from the communities they are members of. For example, one important social influence on individual decision-making arises from prior experiences of making erroneous judgments when these contradicted the judgment of a larger group. Such experiences tend to encourage conformity in subsequent situations. The power of authority is particularly important in this regard too. As always, Shiller presents these psychological factors and the above-mentioned cultural factors as aspects of a larger causal process, in which individual causes mingle and combine to produce their effects on the market. For example, in one of the most interesting discussions in the book, he demonstrates how mispricing may arise when human actors limited in information and information processing capabilities interact on a face-to-face basis in a media-saturated environment conducive to the quick dissemination of 'stories' as well as significant variations in attention. Ideas and perceptions easily become contagious as a result, affecting confidence and leading to the arbitrariness and fragility of market prices.

CONCLUSION

The French School has made a significant contribution to the theory of social conventions and, in particular, to enhancing our understanding of specular and mimetic behavior on stock markets. But in concentrating almost exclusively on conventions, be they of the Lewisian variety or the variety it attributes to Keynes, it tends to offer a one-sided, voluntaristic, view of social structure. The French School has consequently tended to neglect the various forms of social structure that are not conventions in these senses, that is positions, practices, rules and relations that are not directly founded in the specularly-based agreement of those whose behavior they govern or reflect. Further, the French School's ontological commitment to the ubiquity of social conventions encourages an *a priori* methodological commitment on its part to analyzing social phenomena purely in terms of conventions. It is this which leads to its rather extreme view of the determination of stock market prices, according to which prices have a dynamics and momentum that is entirely independent of the surrounding social system and what is happening in the wider economy. We have argued against this view, that the determination of prices on stock markets depends on considerably more than the mutually reinforcing beliefs of market participants. If so, it follows that achieving a full understanding requires an *ex posteriori* approach that is open to the possibility of admitting a range of causal factors in its explanations.

Treating stock market conventions as only one, albeit important, determinant of stock prices makes it possible to avoid many of the internal problems we identified in Dupuy's account of price determination. Speculatively-driven episodes might then lead to prices that stabilize for certain periods without requiring unanimity in the market about what those prices should be; indeed there would be no barrier to prices coming to rest even in the presence of significant differences in opinion about what particular stocks are actually worth. Further, according to the broader perspective on the structure-agency relationship and price determination that we have been advocating, it is not necessary to maintain that everyone will be following everyone else's leads (which is incoherent anyway, when there are sellers as well as buyers) nor that everyone in the market somehow forgets the often arbitrary levels at which prices settle after a period of speculative activity. After all, the notion of speculative bubbles is nowadays such a familiar one that it has become part of most peoples' common-sense ontology. While some degree of specular activity and mimetic behavior are no doubt going on in stock markets all the time, such markets typically go through periods in which these factors are dominant in their effect on prices, others in which they are not. We would argue, however, that even in periods in which they appear to be dominant, and the stock market boom of the 1990s is surely a case in point here, analyzing that phenomenon by focusing solely on specular activity and mimetic behavior is bound to be misleading. Shiller's (2000) Keynesian account of the speculative bubble of the 1990s illustrates the point rather well, achieving a meaningful causal explanation of the behavior of the stock market during this episode by invoking a plurality and confluence of causes. More generally, whether or not specular activity and mimetic behavior are in fact dominant in a particular case is something that should be established empirically, rather than being prejudged by specific ontological and methodological commitments.⁽²⁹⁾

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1. See, for example, Sklaer (1997: 239-42), Swedberg (1997: 170-1), and Zafirovski (1999a: 509).

2. The relationship between the French School and economic sociology is discussed by Wilkinson (1997: 307-8, 320, 328, 331), Dosse (1999: 117-8, 246, 248-50, 257) and Heilbron (2001: 53-4). The relation between economics and social theory that underpins the *Economics as Social Theory* project is outlined in Lawson (1997b).

3. See also Beckert (1999) and, for a remarkably similar approach to bridging the gap between economics and sociology, Farmer (1991, 1995).

4. Indeed it is an important feature of the theory of probability proposed in his earlier *A Treatise on Probability* (Keynes 1973c) that it is often impossible even to compare the probability of propositions in terms of more than, less than or equal to.

5. Sociologically speaking, an important source of uncertainty is the problem of the double contingency of social action (Parsons and Shils, eds. 1951), that is, the fact that in many social situations the consequences of a person's actions depend upon the creative (and so unpredictable) behavior of other actors (Beckert 1996: 805, 826). For more on the concept of uncertainty, see Shackle (1972) and Lawson (1988).

6. The word 'rational' is used in wider sense than is common in economics here, reflecting the fact that, like Keynes, Beckert (1996: 804, 805, 818) believes that the presence of uncertainty does not preclude behavior that is (in some sense) rational. Attempts to characterize the relevant concept of rationality include O'Donnell (1989), Lawson (1991) and Runde (1991). See also Dosse (1999, pp. 255, 284-5).

7. Indeed, one might go further in contravening Duesenbery by arguing that economic theory's preoccupation with models that yield 'single-exit' outcomes - that is, which portray the actor's behavior as being uniquely determined by his or her circumstances - indicates that 'the paradigmatic case of rational choice theory assumes away any active choice' (Farmer 1992: 418 n. 2; see also Beckert, 1996: 838 n. 88).

8. Attempts to conform to majority opinion may also exert a destabilizing influence on prices in other ways, such as where price movements are amplified via the activities of benchmark tracking funds. In these cases the pull on prices is backward looking, as opposed to the forward-looking pull associated with speculative behavior.

9. The fundamental value of a stock at time P^*t is equal to the mathematical expectation of the sum of the dividends $dt + i$ expected to flow from it over future periods ($i = 1, 2 \dots n$) discounted back to the present using some discount factor r (usually assumed to be the nominal interest rate):

$$P^*_t = \sum_{i=1}^n \frac{d_{t+i}}{(1+r)^i}$$

The 'real' factors that supposed determine the flow of dividends, sometimes taken to be restricted to preferences, endowments and technology in mainstream economics, are often referred to as 'fundamentals'. The fundamental value of share is often interpreted as the 'justified' value of a stock, what its value would be in the absence of any perturbations of a non-fundamental nature such as informational asymmetries, herd behavior, bubbles, etc.

10. Dupuy (forthcoming) attributes the term 'intersubjectivism' to Edward Fullbrook (1998) and remarks that the school actually goes by the name of 'Économie des conventions' in France, where the word convention refers to the Humean notion as formalized by Lewis (1969). For discussions of various aspects of the 'Economics of Conventions' approach, see Wagner (1994), Wilkinson (1997), Dosse (1999: 23-5, 42-7, 116-9, 214-5, 243-64), Heilbron (2001: 41, 53-4) and Thévenot (forthcoming).

11. The literature on coordination games is surveyed by Young (1996).

12. In fact the 'salient' solution to coordination games is not a deductive consequence of common knowledge of the rules of the game and the salient solution (Gilbert 1989), but we shall leave this to one side here.

13. A proposition or event is common knowledge if everyone knows it, everyone knows that everyone knows it, everyone knows that everyone knows that everyone knows it, and so on.

14. The French School thus emphasizes point (3) in Keynes' list, making little or no mention of points (1) and (2). It is interesting that Dupuy does not mention the place in which Keynes comes closest to the interpretation of the French School: '... the rate of interest is a highly conventional, rather than a highly psychological, phenomenon. For its actual value is governed by the prevailing view of what its actual value is expected to be' (Keynes 1973a: 203).

15. It is too strong to say that Keynes argues that the only rational way to behave in such contexts is to imitate others. Indeed, as we have seen, Keynes also rationalizes a strategy of breaking with the crowd by anticipating changes in the current conventional basis of valuation if a basis of superior knowledge for such 'speculation' is believed to exist.

16. Another possibility, one that we shall suppress here, is a range of prices for stock (or each of a set of stocks) within some 'normal' interval that allows for minor fluctuations

17. The idea that the market may display 'unanimity' on the value of stocks runs counter to Keynes' remarks on the diversity of opinion on financial markets: 'It is interesting that the stability of the system and its sensitiveness to changes in the quantity of money should be so dependent on the existence of a *variety* of opinion about what is uncertain. Best of all that we should know the future. But if not, then, if we are to control the activity of the economic system by changing the quantity of money, it is important that opinions should differ. Thus this method of control is more precarious in the United States, where everyone tends to hold the same opinion at the same time, than in England where differences of opinion are more usual' (Keynes 1973a, 172). In situations in which there is a diversity of opinion about the course of future interest rates there will presumably also be a diversity of opinion about the future movement of stock prices (and quite probably, therefore, about the basis of existing valuations).

18. Looking at the diagram, how could all market participants feel justified in expecting the price to remain at P^* , expect all other market participants to expect the price will remain at P^* , expect all other market participants to expect all other market participants to expect the price to remain at P^* , and so on, when the majority of market participants value the stock at less than P^* ? For if it was common knowledge that the price is expected to remain at P^* then it will do so and everyone should be prepared to pay up to P^* to obtain that stock (on pain of missing out on the profit that could be earned on stock that can somehow be acquired for less than P^*).

19. If there was unanimity that the price would rise above P^* , then all market participants would be prepared to pay up to at least P^* in order to acquire it.

20. For details, see Archer (1995) and Lawson (1997a). For Lawson's own reading of Keynes's observations on conventions, see Lawson I(1993; 1997a: 182-184).

21. The observables in question are a 'focal point' in coordination games or the value of a variable that achieves a certain exteriority when projected outside the play of specularity in the 'Keynesian' case.

22. This model of explanation is a form of retroduction, as distinct from the more familiar deductive and inductive varieties. Whereas deduction involves deducing statements about particulars from general statements and induction involves deriving general statements from statements about particulars, retroduction consists in moving from the phenomenon to be explained to an abstract (i.e. necessarily partial), usually discursive and always potentially fallible account of its causes.

23. The downside is that market liquidity encourages speculation and the kind of mimetically driven speculative episodes we have been describing (a speculator will not buy unless he or she knows that it will be possible to sell again a short period hence).

24. See, for example, Eichengreen et al. (1995).

25. Shiller (2000: 137) also notes that remembered past prices serving as anchors may be part of the reason for observed trends in individual stock prices to be reversed, and that individual stock prices and company p/e ratios are also anchored, in a sense, by being priced relative to other stocks and company p/e ratios. Such relative pricing may explain why stocks often tend to move together, although not,

of course, the particular level the market as a whole may settle at any point in time.

26. It is tempting to draw parallels between what Shiller has to say here and the theory of comparative probability advanced in Keynes's *Treatise on Probability* (Keynes 1973c) and his later remarks on animal spirits, but we leave that to another occasion (see Runde 1994).

27. It should be said that Shiller's (2000: 138-139) emphasis on consumption as one of the 'alternative uses' of wealth that tie down the market overlooks some important macroeconomic considerations. Shiller's argument is that pressure may be taken off a rising stock market if stockholders start selling to raise their consumption spending in response to their new-found wealth. The trouble is that this effect may be offset where increases in consumption raise incomes and profits, which is typically positive for stocks rather than the reverse (unless concerns about inflation and tighter money predominate). Further, rising asset prices generally improve perceptions of creditworthiness and the availability of credit, and this process of credit endogeneity may have a cumulative positive effect on stock prices (unless monetary policy anchors the system). Finally, and as emphasized by Keynes, bonds and money are also important alternatives to holding stocks, which highlights bond yields, liquidity preference, and monetary policy as potential 'anchors' to the stock market (see Minsky 1975 and Bibow 1998).

28. Shiller likens speculative bubbles to 'Ponzi schemes' or pyramid schemes and the cumulative processes they involve. In his view, the 'extension from Ponzi schemes to naturally occurring speculative bubbles appears so natural that one must conclude, if there is to be debate about speculative bubbles, that the burden of proof is on skeptics to provide evidence as to why Ponzi-like speculative bubbles cannot occur' (Shiller 2000: 67). But he also supports his arguments by empirical evidence on high investor confidence, undiminished expectations despite a high (and ever rising) market, and market perceptions of bubble expectations etc., arguing that although the recent example of Japan's Nikkei index should alert us to the possibility that stock prices may stay well below their historical peaks for long periods, U.S. experience since 1982 had been such that investors seem to generally believe that whenever the market falls it will quickly recover and climb to new heights.

29. Granovetter (1985, p. 493) makes an analogous point with regard to the analysis of social order, writing that his preferred embeddedness approach 'makes no sweeping (and thus unlikely) predictions of universal order or disorder but rather assumes that the details of social structure will determine which is found.'