

Introduction

Markets, Information, and Social Action

Markets Matter

One cloudy day in March, 2008, I overheard a conversation between two students on the campus where I work, as we all were queuing in front of a cash machine. One of the students, tightly clutching a geography handbook, asked the other whether she had heard about the attack on the bank we were queuing in front of. And no, it wasn't a terrorist attack: it was a speculative attack. Apparently, the day before, financial traders had launched a coordinated attack on the share price of that bank, one of the biggest in the country. Within less than 30 minutes, the price went down 17 per cent (Kollewe 2008). A couple of days before, Bear Stearns, the fifth largest US investment bank, had been bought by JP Morgan for \$2 per share, down from over \$120 only six months earlier. During those days, the prime spot on the front page of newspapers and on TV news channels was taken by worldwide markets still falling, in spite of the Federal Reserve having injected hundreds of billions of dollars. Worries about job losses, mortgage payments, and tighter credit were getting louder. Politicians and central bank governors were quoted as for or against intervention. Some were in favour of central banks intervening by cutting down interest rates, or by selling currency reserves. Others argued that, ultimately, markets cannot be influenced.

About six months later, the situation became worse. One of the biggest US banks, Wachovia, was being saved from bankruptcy in a government-supported acquisition by Citibank. In exchange, the Federal Deposit and Insurance Corporation (FDIC) was absorbing Wachovia's \$42 billion losses (Dash and Sorkin 2008). Yet, a few days later, the situation had dramatically changed: Wells Fargo, another US bank had stepped in and made a competitive acquisition offer which was ultimately approved by Wachovia's board. Suddenly, there was competition (however short lived) for acquiring failing banks, and competition brought about surprises. It created new, unexpected situations.

While the market for failing financial institutions did not last long (with the offer far outstripping demand), these episodes reveal how competitive

exchanges create surprises. In the above case, a key surprise was the share price offered by Wells Fargo. If we were to adopt a standard formulation, the price was a signal which 'guide(d) the allocation of resources' (Mankiw 1997, p. 83). In this perspective, markets appear as akin to gigantic telephone switchboards, collecting and distributing signals, which will then flow into decisions about resources. The power, significance, and impact of markets are provided precisely by them functioning as switchboards, collecting and distributing signals. (We shall later see that this definition becomes more complicated than we might expect.)

However, we should ask first: what exactly is meant by signals here? If markets are information processors, as standard wisdom teaches us, what is this information? Is it the hand signs commodities traders make to each other in the pits of the Chicago markets? Is it billboard panels we drive by without looking, or TV adverts many of us simply ignore? Or is it the carefully orchestrated absence of price displays in luxury boutiques? What does it mean to have information in the market? Does it mean knowing a price? Knowing other people? Knowing trading rules? And, generally, how do people know information in the market? Does this mean knowing somebody who might know something? Does it mean watching prices on a screen? And, how do all these activities shape markets?

Information, Uncertainty, and Competitive Actions

Once we start looking more closely at what information¹ means, things which seemed to be simple suddenly become complicated. For now, at least, one thing is sure: we cannot make much progress in understanding markets without first examining what is meant by market information, how this is produced, circulated, and used, and how all these processes involve the knowledge and actions of participating actors. A good way of rolling out this examination is by providing first an empirical example from the world of competitions: since markets are broadly seen as systems of competitive transactions, let us see first how competitions work.

We seem to live in a world full of them: think of all the contests, championships, talent shows, and challenges present in almost every domain of life, across the board from the arts to science, education, or leisure. Yet, perhaps the purest forms of competition, competitions for competition's sake, can be found in the world of sport. Take plays² of the soccer game, for instance. Here, we have both explicit and tacit rules stating which action routines are allowed where on the playing field, establishing the size and shape of this field, the duration of the play, the number of players and of adjudicating

actors in the field, the artefacts allowed, and the like. Such rules have (limited) variability and negotiability: an informal match on the recreation ground will not necessarily follow all FIFA's (the International Federation of Association Football) formal rules. We also have the material settings within which the game can be played: built stadiums, but also parks where goalposts are marked with schoolchildren's backpacks. Material assemblages can mark complex, internal divisions among the specialized sections of a stadium, as well as recognizable boundaries to the outside world.

In a professional match, the key positions of public, players, referees, sports commentators, or coaches are not easily interchangeable (with the exception of substituted players who become spectators, or substitute players being sent on the field).³ Such a match can be seen as a chain of transactions—of actions and responses to actions—which cannot be forecast in their unfolding. While expectations about specific sequences of action/counteraction can be formed, we cannot foresee such sequences before the play has started. The impossibility of forecasting from the start moves in a play of soccer, to reduce the play to a chain of routines obeying expectations makes the chain of actions a specific play of the game. In this play, surprises arise continuously: deceptive moves, unexpected positioning of players, or turns of action which were not foreseeable by participants. It is such surprises which make a match so absorbing.

While a play of soccer certainly implies routines, it is by no means reducible to them. Plays of soccer also imply rules, organizations such as clubs, institutions such as national leagues, but soccer itself is not reducible to any of these elements. We may know by heart all FIFA regulations, for instance, but based on this we cannot foresee the outcome of any match. This is not to say that regulations do not put constraints on the play: it is to say that such constraints do not determine the outcome of any one play.⁴ And, while there are many resources to be allocated in the world of soccer (money being perhaps the most important), the game is also about things such as prestige, fairness, cunning, or endurance. Players are judged in relationship to such attributes, according to what they do during the play. All in all, then, soccer (and not only) can be seen as a set of fairly complex competitive exchanges which, while operating under material and institutional constraints, continuously involving the use of routines, is geared towards generating surprises, unforeseen actions, and uncertainties. Not incidentally, this is what the public likes most: a sport without surprises is often judged as dull and disappointing.

Now, let us make things a bit more complicated and remove the stricter distinctions between observers and players. Observers go on the field and play, come back, observe for a little while, go back and play, and so on. The public⁵ has a specific pool of knowledge, and is at the stadium by virtue of this knowledge, which allows members not only to observe the game, but to play it

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as well. The public constitutes not only the observers of specific transactions undertaken during the game, but also a pool of players. Playing the game changes the knowledge of the public. We would need to imagine here a soccer stadium where the public watches the game played by some players. This observation is not only direct, but also involves mediated representation of what is happening on the playing field. A good example from real life is an observer looking at players through the lens of a video camera. Then, some players come to the benches and others go into play. Those on the benches make observations and comment upon them, shout to the players, tell their own stories from the field, and so on. The players who are back on the benches start describing their own experiences in the play, while others go back on the field and play, and so on. (Some observers can specialize in making authoritative judgements upon the play.) The fact that the public both plays the game and observes it, is susceptible of continuously generating informational surprises: observers will not only comment on actions, but also on new players, or on new sequences of the play. This imprints a continuous dynamic on the public's knowledge, which will be in flux due to the surprises and unexpected elements occurring during the play, plus the interpretations of the observers, augmented by the players' accounts, etc.

The situation gets more complicated if we imagine that at a nearby stadium a game of American football takes place, in the same arrangement where observers and players shift positions all the time. Assuming the American football match is broadcast at the soccer stadium, the soccer crowd will make observations on the football public as well (including observers and players) and vice versa. These observations will be significant for what happens on each other's stadium, and for the ways in which each other's players' actions will be judged, etc. While usually in soccer and football games the assumption is that the ball remains unchanged during the play, we can imagine a situation where changes in the ball (elasticity, curvature, and the like) during the game are measured and factored in. This produces additional informational surprises, which affect the dynamics of knowledge in each stadium, as well as between stadiums (assuming that the wear and tear of soccer and football balls is comparatively investigated while playing the game). In such a situation, the investigation of material changes in the ball would become part of the play itself. The overall picture is that of interconnected competitive games unfolding on the grounds of continuously producing uncertainties (aka informational surprises). While the outcome of a soccer match would be a specific score, this would by far not be the only outcome. In soccer, the outcome is not only the specific score, but also a specific social appreciation (or valuation) of players, valuation made on social attributes broader than the number of goals scored in the play of the game. (In soccer, for instance, this valuation can be made on attributes such as speed, agility, or fair play.)

This analogy illustrates and anticipates at the same time the main argument of this book: that markets as systems of competitive transactions require the continuous production and handling of surprises, or uncertainties.⁶ Instead of regarding market information as routines reducing uncertainties, I argue that in markets information means surprises, to which players react. These surprises, however, are produced in an ordered and orderly fashion: in the same way in which a soccer match takes place in a stadium, is regulated by the sport's institutions, and draws upon routines, market competitions produce surprises in ways which are bounded by institutions, material arrangements, and routines. Nevertheless, as in soccer, it is the surprise which drives action forward.

In soccer, competitions are laminated⁷: they include several layers of meaning concerning what the competition is about. Players compete not only to score goals and for money, but also for assessment on attributes such as speed, agility, fairness, cunning, and the like. These layers of competition unfold simultaneously and are interdependent. In markets as interconnected competitive plays, we encounter the same phenomenon: competitions have many layers, not all of which pertain to the allocation of existing resources, but also to valuation on social attributes. In soccer, we can have situations where a league match takes place in a stadium, while on an adjacent field amateurs kick the ball around; two different versions of the same game, yet with different kinds of surprises and valuation outcomes. In markets, we can encounter similar situations, where different versions of the same games are spatially and temporally adjacent. This points to the fact that we have not only several kinds of market games, but also different kinds of plays within the same game. Therefore, the strategy followed here is not that of investigating whether various plays of competitive games follow one and the same template (be it that of homo oeconomicus or of 'the market'). The strategy is to investigate the elements involved in these competitions, taking the production of surprises as the focal point.

Having established the above analogy as the base for this investigation, I will now move forward, taking readers through an examination of the links between transactions, knowledge, and trust. In the same way in which moves and passes on the soccer field imply skills and knowledge, market transactions imply these too. And, in the same way in which a soccer match implies expectations and trust on the part of the players, as well as of the public, market transactions, too, imply trust and shared expectations. In the following, I investigate the connections between knowledge and trust, starting from arguments originating in classic sociology. Afterwards, I will discuss a sociological notion of information, positioning it against this background. For the most part of the discussion, the analogy with the play of soccer will stay in the wings, though I will bring it to the fore again, in the last two sections of this introduction.

Knowledge in Market Transactions

An appropriate starting point for this examination is the notion that market transactions are anchored in knowledge. Adam Smith's famous observation about the invisible hand that coordinates the actions of various market actors without the intervention of any central overseer expresses the idea that, in striving to realize their individual economic interests, actors will interact with each other, exchanging news and observations, and drawing the appropriate conclusions with respect to their plans and actions (Smith [1776] 1991, p. 351). In addition to the differentiation in knowledge implied by the division of labour, social interactions (in the marketplace, but not only) appear as self-regulating coordinating devices, which circulate news, stories, or gossip.

After Smith, political economy made room for the idea that market transactions circulate news and stories around, and that this circulation influences the ways in which market players perceive the prices of goods and react to them. Nevertheless, news and stories are not the only kind of knowledge implied by transactions. For Karl Marx ([1872] 2002, pp. 70, 84), for instance, commodities are embodiments of human labour; as such, they not only incorporate knowledge and skills used in producing them, but also convey knowledge related to their use. The circulation of commodities through society also means the circulation of knowledge, in the form of tacit skills (related, for instance, to the use of a particular commodity), as well as in the form of explicit knowledge. In addition to this practical knowledge and skills (which can be made explicit only in part), political economy highlighted the importance of formalized knowledge: the French econometricians and physiocrats, for instance, saw visual representations and descriptions of economic processes as tools of taxation policies, among others, and as a kind of knowledge indispensable to the state (Schumpeter [1954] 1994, p. 232). At the same time, being an entrepreneur engaged in market exchanges requires specific organizational skills (expressed by John Stuart Mill, for instance, as 'superintendence' or 'control') and knowledge of manufacturing and marketing, among others.

When buying and using a device such as an MP3 player, for instance, we acquire certain tacit skills related to the use of the device: these skills can be tactile among others (e.g. precision in moving our fingers). At the same time, we may search for and circulate stories related to the technical performance of the device, data related to this performance, stories about the manufacturer, and the like. In fact, many commodities we buy come packaged with not only data about technical performance or chemical composition, but also instructions for use, data and stories about the manufacturer, instructions for possible complaints, and many more. Thus, economic transactions trigger the social circulation and dissemination of various layers of knowledge and skills.

Marketplace transactions reproduce and circulate such elements of (tacit) knowledge, together with explicit knowledge, such as the calculation of salaries, of the costs incurred by the reproduction of labour power, and so on.

Sharing and circulating knowledge and skills, however, does not impede upon the competitive character of market transactions. Karl Marx ([1872] 2002, p. 516) considered that capitalist accumulation cannot be achieved without increased productivity as a competitive factor. This productivity, while knowledge-based (i.e. realized through technology and skill improvement) increases the competition-related uncertainties which workers face. In his turn, Max Weber defined markets as struggles, and monetary prices as products of struggles (Weber [1921] 1972, p. 58; see also Simmel [1908, p. 247]; Swedberg 2003, p. 119; François 2008, pp. 238–9). For Weber ([1921] 1972, p. 382), haggling is the specific manifestation of markets. Following Werner Sombart, Max Weber ([1921] 1972, p. 383) considers that the market is the only form of socialization which is not grounded in ‘personal fraternization’ and hence susceptible in principle to broadly valid ethical constraints. In his analysis of financial markets, Weber ([1921] 1972, p. 382) considers that the procedural trust underlying oral transactions triggers a process of ‘community-building through money use’ (*Vergemeinschaftung kraft Geldgebrauchs*). Community is built in this case not only on the grounds of shared, tacit rules of behaviour, in the absence of any explicit, written rules which should regulate transactions, but also on the grounds of using the same artefacts and techniques. Nevertheless, in transactions prices are means of struggle among market actors. Weber ([1921] 1972, p. 58) uses here the words *Kampfmittel* and *Kampfpreis* (means of struggle and struggle prices, respectively), seeing market transactions as competitions or struggles determined by interests and power.

Georg Simmel (1908, pp. 282–3) saw competitive market transactions as just one subtype of a more general social phenomenon—the struggle. As a basic form of social interactions, struggles do not exclude, but often go hand in hand with cooperation. Competitive struggles are ubiquitous in modern societies; market competitions are characterized through the formal character of the antagonism among competitors (we do not want to vanquish them once and for all), by orientation to valuation, and by boundaries (competition among comparable rivals).

The idea of the market itself, understood as a system of competitive exchanges, requires that participants have knowledge and skills which they put to use not only in competition (Schumpeter [1954] 1994, pp. 554–6), but also to create links between economic and political institutions, for instance. Taking knowledge as the platform on which market transactions take place implies that in a majority of situations market-relevant forms of knowledge are taken for granted by players: they remain unquestioned and are trusted as appropriate for the specific situations in which they are used.

Trust in Transactions

Let us re-examine the problem from the perspective of the world of effective action (Schütz 2003, pp. 61, 66), to which economic transactions belong. This world is characterized by problems and doubts different from the ones specific to the world of contemplation, for instance. In order for action to take place, one has to suspend doubts, based on the assumption that other actors as well will share the expectation about the unproblematic character of the situation in which action unfolds (Luhmann 1990, p. 43). These mutual expectations provide the grounds for routines in everyday life, routines which, in their turn, constitute to a very large extent the basis of our doings. These routines also apply to the categories and classifications which orient actions, without requesting, for instance, that transaction participants reach complete (tacit) agreement about them beforehand. Rather, shared routines become visible as actions unfold. This, however, leaves room for uncertainties, and for unexpected turns of action.

There are situations in which such shared expectations do not work very well, situations in which doubts can arise. These can be situations in which we enter transactions with a new partner, in a new context, or about a new product. Moreover, there are situations in which we might try to anticipate the outcome of transactions, or the future actions of transactions partners. In all situations where routines are partially or entirely insufficient as grounds for our doings, uncertainties arise. These uncertainties can take the form of ambiguities: is the new partner reliable or not? Is the product of an acceptable quality or not? Is it legitimate to ask for a warranty? Uncertainties, however, can take the form of a lack of specificity as well: who is this new merchant? What does the new product do?

Since, as argued above, economic transactions are part of the world of effective action, the way of dealing with doubts (aka the suspension or insufficiency of routines) would neither be to contemplate or fantasize about who the new merchant in town might be, nor to generally reflect about the merchants' position in society. The way of dealing with such a suspension or insufficiency would be to use other routines to compensate for this insufficiency, or, if this proves unsatisfactory, to find new ways to compensate for them. Such routines can be: contacting acquaintances and friends and asking them about the new merchant, or doing an Internet search. And if this proves unsatisfactory, then we could actively seek people who have dealt with this new merchant in the past, contact them, and ask them about that person's past behaviour. We would then be able to receive stories, data, or names, for instance, and based on all this, we could form a judgement. If we are already members of an economic organization, this task would prove easier than in isolation: we would have colleagues to ask, or contacts in other

organizations; we could go to business conventions or to lunches as places where we could gather stories, data, and the like. Of course, in the process of collecting these stories, names, or data, we would be confronted with the same problem of trustworthiness, which we would be able to solve based on routines—that is, on entrenched mutual expectations.

Trusting somebody like a transaction partner, trusting the legal system to recognize and protect the transaction you are just about to enter, or trusting that the goods you are about to buy have a certain quality, all this implies acting upon specific expectations about the institutions, people, and objects directly and indirectly implicated in economic transactions. These expectations are that all the elements on which transactions, their outcomes, and their consequences depend, are unproblematic. These elements are taken for granted and not made into something doubtful.

The more general trust-relevant arguments coming from classic sociology are twofold: first, Max Weber's argument that religious precepts (namely those of Protestantism) provide the normative basis of capitalist accumulation, and that these precepts have constraining force (Weber [1920] 1988, p. 33).⁸ Capitalist production (and markets by implication) is then defined by a self-sustaining ethic, with religious roots and universalistic claims. Adherence to this ethic requires acknowledging debts and obligations towards transaction partners; the general acknowledgment of these debts and obligations creates trust. I trust my transaction partners, for instance, because I acknowledge them as adhering to the same normative views to which I, as a businessperson, adhere, views which regulate our relationships. In this perspective, then, reciprocal, personal trust is grounded in acknowledged adherence to a normative set of principles.⁹ Market exchanges are shaped by an ethics of competition, yet one which submits to the above-mentioned principles. That religion-based ethical principles can still be influential in shaping market transactions is shown, among others, by the fact that stock exchange transactions in Islamic countries (such as Malaysia) have been influenced by social movements which seek to impose ethical principles of investing derived from religious precepts (see Pitluck [2008]).

However, there is more to trust than commitment to norms. Weber ([1921] 1972, pp. 201, 205) saw transactions in quasi-closed economies (of the kind we might encounter in traditional village communities) as characterized by inward trust and outward distrust: in other words, while in such an economy members would trust each other (because of longstanding family ties, reciprocal obligations, the conformist pressure of the community, or because their status and honour are at stake), they would enter transactions with strangers on the basis of distrust and would try to con them as well, in a (from the perspective of the community) perfectly legitimate fashion. While a mountain hut, for instance, would be sold to the neighbouring farmer at a fair price, sanctioned by the community, and on the basis of acknowledged property

deeds, the same hut would be sold to an outsider looking for a holiday home at a much higher price and, sometimes, even without regular property deeds, so that it can be claimed back later.

Capitalist market transactions, where money is the major (if not the only) medium of social relations¹⁰ (as opposed to family and tribal obligations, among others) erode distinctions between inside and outside transactions. It does so mainly because, to a large extent, it can substitute personal trust (as given by family and community ties, obligations, and controls) with impersonal trust. Additionally, market transactions increase reciprocal obligations and interdependencies in highly individualized societies: since everybody can enter transactions with everybody, the only condition being availability of money, market actors become increasingly dependent on each other, a process which is not restricted to present economic transactions, but includes past ones as well.¹¹ But if in traditional, closed economies of production (such as that of rural communities) stories were trusted because they came from trusted people, who in their turn were trusted because they were part of reciprocal bonds and obligations intrinsic to the community as such, how can stories and data be trusted in an impersonal economy where capital is the mediator of all social relationships? How can one trust stories and data furnished by complete strangers? We have to keep in mind here that without such trust durable transactions would not be possible; what is more, the reproduction and expansion of market transactions would not be possible. I may be conned once, but, after having learnt a lesson or two the hard way, I will simply refuse to enter transactions with people whom I don't know, or who do not come from my village, or from my extended family. If everybody does this, there will no market transactions at all.

The alternative would be to see ethics and trust as grounded in emotional commitments. The economic life of modern, complex societies is highly differentiated, meaning, among others, that economic actors have to specialize and exchange their products with other actors. These exchanges imply relationships of trust, which cannot be entirely reduced to the legal formalization of contracts. In fact, this very differentiation and specialization which characterizes modern economic life implies an increased degree of solidarity, akin to a living organism whose parts perform specialized functions (Durkheim [1893] 1984, p. 80). This organic solidarity (Durkheim [1893] 1984, p. 85) grounds relationships of trust, which ultimately rest on a common emotional bond visible among others in religious rituals (Durkheim [1915] 1965, p. 465; Collins 2004, p. 49). In its most basic form, solidarity can be specified here as a mutual orientation of social actors, orientation grounded in common practical actions, providing participants in a social situation, for all practical purposes, with a shared view of the world.

Mutual, implicit trust becomes the non-contractual base of every economic contract; a mutual orientation of actors (rooted in common rituals) is

absolutely necessary for the existence of society as a whole (Durkheim [1915] 1965, p. 475; [1893] 1984, p. 158). Without mutual bonds, no interaction could take place. Since market transactions are nothing but social interactions, they must be anchored in a mutual orientation. I trust my transactions partners even when they do not come from the same family or village, simply because we share a set of basic assumptions and expectations about us as social actors. At a very basic level, I trust my transaction partners to treat me as a social being, and they trust me to do the same. This makes untrustworthiness an exception, and not the rule. Therefore, the general attitude in market transactions would be that of trust (tested by moments and episodes of breaching this trust, or of distrust), even in situations where transaction partners do not know each other.

Trust appears then as moral commitment (with two distinct varieties: ethical norms, or mutual orientation), as mutual acknowledgment and adjustment of interests, or as a combination thereof (Cook, Hardin, and Levi 2005, p. 5; Fligstein and Dauter 2007, p. 108; Fourcade 2007, p. 1021; Fourcade and Healy 2007, p. 281). For instance, adherence to ethical principles does not preclude mutual adjustment of interest, quite the contrary, the latter may be derived from the former. Trust does not exclude objectified forms, such as trust in legal systems and institutions (economic and political), or trust in technological data processing. We could see then trust as a form of social routines, related to persons, artefacts, or institutions, routines which enable transactions. But we can also see trust as anchored in a mutual orientation which must be made visible within interactions, as basic assumptions related to the ways in which market actors deal with each other.

Trust and Impersonal Knowledge

This indicates that in relationship to market transactions, trust can be understood in different ways, as personal knowledge of people, as skills in dealing with artefacts, but also as based on norms, or as mutual orientation. We can distinguish among forms of trust related to various kinds of knowledge; some of these kinds concern procedures, while others concern people. Some concern objects, while others concern norms of social life. Overall, these forms can be classified as personal or impersonal trust, with several subtypes. Since personal trust has been discussed in the previous sections, I will focus here mainly on impersonal forms of trust.

Impersonal trust has procedural aspects, consisting among others in following the rules and prescriptions (some of which are explicit and some of which are not) for defining, identifying, initiating, conducting, closing, accounting for, and recalling transactions. Among forms of impersonal

trust, we can distinguish at least interactional, calculative, and institutional trust (in practice, though, they mingle all the time).

Interactional trust refers to the mutually shared procedures and orientations which allow transaction participants to initiate, unfold, and complete action sequences.

Calculative trust builds upon Max Weber's argument ([1920] 1988, pp. 10–12) that the distinctive feature of Western-style market capitalism is calculation, understood as tools and technologies with the help of which economic processes and market exchanges are redefined as efficient. Tools and technologies imply procedures for projecting, conducting, evaluating, and adapting economic processes (including here market transactions), procedures which are trusted as such by market participants. Procedural formalization creates specific reciprocal expectations for each step of the transaction process. When buying a house, for instance, we follow a specific procedure (initiating a search, finding a solicitor, etc.), which we often might see as a hassle and an expense of time and money, but this formalized procedure provides us with specific, step-by-step expectations, increases the reliability of the transaction and therefore the trust we put in it. Procedural formalization also allows encoding economic transactions in legal terms, establishing thus formal rights and obligations for transaction partners. This encoding contributes to stabilizing reciprocal expectations. The standardized character of formalized data makes it recognizable and transferable across various contexts (Stinchcombe 2001, pp. 51–3). Think here of how a supermarket receipt is part and parcel of a formalized procedure of shopping. Such a receipt constitutes not only a memory of what has been bought, providing standardized information: data about the commodities which have been bought, their quantity, and their prices. It is also a legal document, enabling specific actions when breach of trust is discovered after the transaction, or when the buyer has changed her mind. In many cases, a shopping receipt will state the right of the buyer to return products within a specific time window, irrespective of any irregularities in the quality of that specific commodity.

Additionally, the ways in which data circulate can be procedurally formalized: we trust descriptions and prescriptions, among others, because they come to us following specific procedures and in specific forms. Think here of the user instructions or the data we find on products: we trust them because they come in specific, standardized, recognizable form and through specific procedures.

Trust can also be based on our assumption that the artefacts, technologies, and other material arrangements supporting market transactions will work in reliable, foreseeable, and consistent ways across various settings and contexts, for all actors and actions relying on them. We expect automated teller machines, for instance, to work in similar ways and with similar procedures time and again, for all users, independent of location and time of the day.

In such cases, we place our trust in the artefacts and machines themselves, in close connection to the trust in specific procedures of using them, without knowing much (if at all) about the engineers who have designed them, or about the technological detail of their functioning. Forms of calculative trust in contemporary market transactions, for instance, are closely related to our expectation that the artefacts and material arrangements supporting calculative procedures will work in reliable, constant, and consistent ways across various contexts.

What is more, forms of calculative trust are incorporated in artefacts and thus objectified: we expect cash registers in supermarkets not only to work in the same way, time and again, but also to incorporate (and thus automate) specific calculative procedures, with respect to adding items, the deduction of price reductions, and the like. Such calculative procedures are performed with minimal intervention from human actors: it suffices to scan a shopping item on the register, and recognition and calculation procedures will be automatically performed. Thus, the melding together of calculative trust and artefacts opens up the possibility of automating economic transactions: that is, of devising specific, well-defined instructions for completing calculative tasks starting from the initiation of a transaction and terminating in its completion and recording. Automated checkout counters, as we see them in some supermarkets, are an example of a partial automation of economic transactions.¹²

A further form of trust emerges when the rules and procedures we submit to (and expect other market actors to submit to as well) are not directly and immediately tied to a particular market transaction (or type thereof), but related to more general forms of social organization relevant for the transaction in question. This form can be called institutional trust. In the above example of the shopping receipt, this works as a legal document by stating (or pointing to) the rights and obligations of transaction partners, within a legal system that goes beyond the boundaries of a specific transaction. In case of dissatisfaction with a product I have bought, for instance, I can use the receipt for formulating economic claims (a refund). This requires a set of specific procedures for dealing with such claims, as well as a set of legal procedures (for complaining about the quality of a good I bought, for instance). In such cases, I put my trust in the procedures that define economic entities (the firm that sold or manufactured the good), as well as legal (the courts of law) and political ones (e.g. supervisory and regulatory bodies).

A consequence of institutional trust is that economic transactions are anchored in the expectation of sets of procedures that cannot be limited to strictly economic ones¹³. That is, actors put trust in these procedures on the expectation that, should a specific, immediate set of procedures fail, other sets of larger significance will intervene (breach of trust in a transaction can lead to legal action).¹⁴

Interactions and Transactions

Having investigated the forms of trust, or routines which constitute the background against which market transactions unfold, we can proceed now to the notion of information and examine it from the perspective of action itself. Going back to the introductory analogy, the picture we get up to this point is that of a soccer stadium where players, spectators, and referees play the game against the background of specific expectations concerning their reciprocal roles during the game (defender, midfielder, referee, etc.), the routines they are going to use (passes, dribbles, shots, and so on), the ontological stability of the ball during the game (it will not suddenly turn into a tennis ball), or the stability of the field (it doesn't suddenly turn into a tennis court), among others.

Yet, these expectations (which enable the conduct of playing routines during the game), together with the awareness of the stadium, of rules, of the clubs, of football organizations, etc. constitute the background to the play of the game, but not the play itself. The outcome of this latter will be shaped while the match unfolds, with and within each of its sequences. Similarly, in market competitions, the element of playing the game is irreducible to trust as routines, although it is shaped against the background provided by them.

What are these elements of the play in market transactions?

1. First, there are verbal exchanges about states of the world. These exchanges are often seen in economic sociology as a 'sea of discourse' in which market actors swim (White 2000, p. 118). They can take place in various settings—formal or informal—and provide market participants with several distinct things: observations of the world, characterizations of elements of the world (or judgements), and stories which rationalize such observations and characterizations. Observations, characterization, and rationalizing stories are relevant for transactions. An example: we observe in everyday life gas prices going up—a drive by the gas station suffices for this. This observation may be shared with and confirmed by others we know. Actually, it is the sharing, the confirmation, and the whole discussion around 'have you seen the prices?' which makes this into an observation. Casual talk at the water cooler concerns itself very often exactly with sharing observations for the purposes of (dis)confirmation. Yet, as such, an observation needs an explanation in order to be made intelligible. The question 'why are gas prices going up?' needs to be answered, by using shared narrative repertoires which we regard as plausible and which we can connect to broader life experiences and observations. Saying that an alien spaceship has sucked out the Earth's oil deposits is not part of such a repertoire. Saying that the war in Iraq has made prices go up by creating more demand, and

opportunities for speculation, and insecurity at the same time, is part of the repertoire.

Verbal (and non-verbal) exchanges imply procedural knowledge which cannot be made entirely explicit. The procedural knowledge used, for instance, in evaluating a newspaper story about a car manufacturer is not fully specifiable. Routines used for legitimating narrative repertoires are impossible to explain in full. Moreover, this procedural knowledge makes use of specific situational resources: a story told at the water cooler can take different turns and be judged differently according to the storyteller's reputation, context of the narrative, participants, and the like. This means that the procedures involved in verbal exchanges cannot be specified independent of the situation in which they are used. Their full formalization could work only if we conceive of cognitive procedures as discrete mental states that are switched on in specific situations (then we could develop an algorithm for matching states of the world with mental states, and situations with procedures, respectively). But since procedures cannot be separated from situational interactions, such a matching is not possible (see also Coulter [1995, 1999]).

2. Verbal and non-verbal exchanges from which representations of states of the world are inferred and assessments of such states are made. Such exchanges do not address observations—they are not utterances of the kind 'look, prices are going up!' They are themselves the object of observations and rationalizations. For instance, when stock exchanges still had trading floors, traders could observe each other, infer, and assess states of the world from such observations. This situation is analogous with that of two soccer players observing each other's actions during a sequence of the play, and drawing from this inferences about what a third player is doing, or about the state of the play. (Needless to say, the state of the play will not be the same for everyone.) A trader observing his neighbour shouting 'twenty five', or making a hand sign to that effect, will rationalize this as being related to a specific state of the world ('there are sellers at twenty five in the market'), and will justify his own actions with respect to it. The boundary between (1) and (2) is of course a fluid one, in the sense that verbal exchanges about states of the world can lead market participants to infer different representations about such states. A participant at the annual convention of, say, the dentistry equipment manufacturers' associations, will not only talk to other participants about their products, technological performance, sales, and the like, but will also observe other participants talking among themselves. They will infer representations of the state of the world from such observations: about possible alliances and collaborations, about whether the published sales figures are trustworthy, about the performance of rival products, and the like.

Observing two competitors talk at a trade fair, a drop in sales, or the disappearance from supermarket shelves of a specific product sends the

observer to changes in the state of the world. Such observations can be consequential: they can trigger more observations, analysis, interpretation, as well as specific decisions. (For instance, finding out that the two former competitors plan now a common line of products will affect the decisions of the observer.) The observer, then, is neither disinterested nor passive, but part of the effective world of market exchanges: observation is investigative, and in this respect different from contemplative forms. It is akin to the investigative observation of a scientist who, say, while seeing an intriguing cell formation under the microscope, decides to perform further experiments in order to understand it better.

Observation can be direct (i.e. face-to-face) or indirect. I can directly observe two competitors talking at a trade fair, or I can read a story about the two competitors having had talks. Stories, reports, news, and the like can act as observational instruments for market actors: such stories are lenses through which the world, and by monitoring them market actors situate and evaluate their actions within the broader world. One advantage of indirect observation is that it contributes to the uncertain coordination of dispersed actions (Thévenot 1993, p. 276) by orienting the attention of dispersed actors to the same event or class of events. While a private conversation at a trade fair cannot be directly observed by many, a story about the conversation can be circulated to and read by many dispersed market actors, orienting their attention to this particular change in the state of the world. This is even more so when the story is a scoop about secret talks, backroom deals, and the like. Sometimes, such stories are purposive revelations made by the deal partners, meant to focus observation upon them: a 'secret deal' attracts a lot more attention than just a deal. In this sense, in economic life, stories are akin to observational instruments.

Observing two competitors talking to each other at a trade fair requires interpretive skills, recollection of past episodes about the relationships between competitors, knowledge about the product lines, and so on. Similarly, reading and evaluating a newspaper story requires not only simply reading skills, but also a certain knowledge about the uses of metaphors, backhanded compliments, or ambiguities as rhetorical instruments, together with knowledge about the reporter's reputation, his track record, and the like. This situational knowledge is not amenable to formalization and is only partly discursive. It is not generalizable or easily transferable from one person to the next.

3. The handling of various artefacts, through which representations of states of the world, inferences about such states, and justification of the own actions with respect to them are generated. Company reports, balance sheets, price lists, price tags, product descriptions, but also buildings, shelves, or the product themselves can be among these artefacts. Some investors, for

instance, decide to buy the shares of specific companies after spending hours of observation at the supermarket, looking at how the products of the said companies are placed on shelves, whether they are bought or not, or testing them in their own families. The same goes for consumers, who do not necessarily want to invest in shares when visiting a supermarket. When shopping in a supermarket, consumers make observations (about the environment and about products as well), infer representations of the states of the world from them, and justify their actions accordingly. Not to mention the fact that the use of the products themselves contributes to such representations, to judgements, and the justification of further actions.

4. The manipulation of, and contact to technologies and devices which represent states of the world or help build such representations. Screens displaying prices and volumes of financial securities being traded, or an ongoing flow of images associated with political, economic, and sometimes even personal narratives belong to this category. (News of Amy Winehouse being arrested for the umpteenth time, for instance, can lead to inferences about her musical output, from here to inferences about the financial future of her label, and then to the evolution of the share price of the respective media corporation.) Within this broader category we can distinguish at least between two kinds of technologies: those of visualized narratives, on the one hand (think TV evening news), and those which produce data flows, on the other. More and more of the latter are actually technologies of intervention as well: they allow not only the direct perception of states of the world from abstract, narrative-less data, but also intervention in the relevant states of the world, from within the given frame. In other words, intervention does not require a separate device or technology, but takes place on the same screen on which the data flows (this will be discussed in detail later).

Information and Transactions

These elements of market transactions can be grouped in the following general classes: verbal and non-verbal interactions (see also Goffman [1970, p. 5]), and the handling of material elements (artefacts and technologies) present in interactions. Interactions are endowed with at least two key properties: they are sequentially constituted and polythetic (Schütz 2003, p. 485).¹⁵ Being sequential, it is impossible to determine at any given step in the chain whether the next steps will (fully) correspond to the repertoire of routines available to participants. Being polythetic, action sequences require judgement (Schütz 2003, p. 496): that is, definitions and clarifications showing that (at least up to that point), common grounds and orientations are

taken as valid by the participants to action. Situational definitions need not be mutually exclusive, but can overlap, leading to laminations: that is, to inter-related definitional layers, which not only provide participants with resources for action, but which can also constitute surprises. In this perspective, we are confronted with two interrelated elements: (a) the uncertainties or surprises unavoidably generated in action sequences, and (b) the judgements which allow progression to the next step in the action. Information can be seen as the processing of surprises in interaction, against the (relatively stable) background of common expectations provided by routines.

Information is judged and lived, and is 'something not recalled but re-created out of the resources of the available order of possibilities of experience, available sensory materials, actions, etc.' (Garfinkel 2008, p. 158). Information, then, is not synonymous with routines (i.e. with certainties): information is the (joint) work implied by dealing with surprises.¹⁶ Routines (and the trust which goes with them) constitute the background against which information is produced in action. Being socially distributed, routines create partitions among domains in which competitive transactions take place. The generation of transaction-relevant information is then constrained by the social domains of knowledge specific to certain sets of routines. In other words, informational surprises are created not for 'the public', but for specific publics defined by specific knowledge domains, publics which constitute both the observers and the pool of potential participants to competitive exchanges. A new, fuel-efficient model unveiled at a car show is an informational surprise¹⁷ in the first place for the public from which observers and participants to transactions in specific categories of objects are drawn.¹⁸

If we connect this with the classic sociological argument that, at the bottom, market transactions are basic forms of social competition, it follows that such competitions have a sequential character and are polythetic as well. Being sequential, they cannot be reduced to following routines, but provide opportunities for surprises and unexpected elements, which in their turn can become competition-relevant resources. This also means that players can (and will) generate surprises as intrinsic to the competition they are engaged in. (Surprises can be constituted not only by saying or doing something, but also by silence or by the absence of expected reactions.) At the same time, if we understand market transactions as polythetic, then competitions will include several definitional layers. A competition can be not only about money, but also about who is more persistent, or quick, or persuasive. We are reminded here of the soccer metaphor, where the players' competition is not only about scoring goals, but also about their specific gameworthiness. This also means that in market transactions, laminated layers of competitions will unfold in the same play, depending on how players create and make use of surprises as a relevant resource.

The opposite of information would be ignorance: in its extreme form, ignorance is given by the surprises which cannot be processed in action (see Garfinkel [2008, p. 162]). Harold Garfinkel (2008, p. 157) illustrates this with the example of *Kriegsspiel*: a game of chess where the two opponents cannot see each other's pieces and moves. Players are told by a referee (who can see both chess boards) when they have won or lost a piece. Moves are made 'in the light of one's thoughts about the others' thoughts about oneself' (Goffman 1970, p. 101)—that is, by trying to infer the possible directions from where surprises might come. Information, argues Garfinkel, is irreducible to any single element of the whole interaction setting: players must use all the resources at hand in order to make judgements upon continuously arising surprises, judgements which will enable them to build step by step a representation of the states of the world, and advance thus in their actions.

Continuing the analogy with the play of a soccer game, which opened the discussion, we can see markets as (structured) competitive exchanges, taking place in stadiums (i.e. in front of specific publics, and within the framework of specific constraints), and geared towards the production and handling of informational surprises as tools and resources for achieving specific valuation outcomes. In a soccer match, surprises are produced all the time: unexpected moves, deceptions, limited reciprocal observations of the consequences of other players' actions, and the like. (In a play of soccer where members of the public can become players in the field, the potential for surprises is much greater.) This informational character emerges from the play's sequential and polythetic character: it makes the result uncertain until the end of the match. If they were entirely foreseeable on the ground of routines, plays of games would be rather dull.

Information and the Social Ordering of Knowledge

The above arguments mean that information is part and parcel of what constitutes the market order, and not something external with respect to this order (Boehm 1994, p. 162); that the production and handling of market information cannot take place outside social interactions; that in these interactions market actors use forms of situational knowledge in order to handle informational surprises. At the bottom, markets are not competitions 'in the wild': they are made possible by social arrangements which order heterogeneous forms of knowledge, creating partitions across various publics, partitions within which surprises are produced (see also Boehm [1994, p. 172]). The ordering of knowledge, however, should be understood as dynamic, not as static: the informational surprises produced in transactions influence it.

If we accept that markets are social competitions anchored in the ordering of heterogeneous forms of knowledge—as argued above—then the multi-layered processing of surprises is intrinsic to this ordering. It is undertaken by specific groups of actors who would then achieve control over interpretations, as well as over processing procedures. Groups of analysts, for instance, have not only different interpretations of stories and data, but also different procedures for producing such interpretations, as well as professional and organizational arrangements which legitimate their control over interpretations. Analysts also have their own status hierarchies, formal and informal rankings, and social competitions with prizes, judgements on the ‘analyst of the year’, and the like. If competing groups control different, alternative procedures of interpretation, then they become an additional source of informational surprises. In terms of the play of the soccer game, commentators at the stadium are not distinct from the play, but part of it.

The above arguments open up the possibility of a sociology of markets that is not limited to investigating the social factors influencing the allocation of goods. If we understand markets as information-generating competitions, anchored in the social ordering of heterogeneous forms of knowledge, then a sociology of markets will have to investigate not only how information intervenes in competitive exchanges, but also how the latter are set within specific knowledge frameworks. In this perspective, the sociology of markets has at its core the fundamental concepts of information and knowledge, yet will investigate transactions unfolding within heterogeneous forms of knowledge (some fixed on artefacts, some related to groups of actors). It provides a specification of information-generating competitions as a key component of dynamic and complex societies, without limiting itself to a functionalist answer (i.e. the distribution of scarce resources).¹⁹

This is not to say that markets are unproblematic, or that they are the best (or the sole) arrangement for everything. Quite the contrary: a sociology of markets will have to highlight the tensions inherent in transactions, the links (and the conflicts as well) with other forms of social competition and/or cooperation, the role of controlling social groups (e.g. political institutions), as well as the moral and social implications of expanding market transactions.

A sociology that understands markets as informational competitions taking place within specific knowledge frameworks will have to investigate at least the following:

1. The forms and types of interactions through which competitions are achieved, and how information is produced within competitive interactions. This amounts to paying serious attention to the micro-analytics of transactions, understood as interactional achievements. If we accept transactions as the basic analytical unit of the sociology of markets, then we need to pay close attention to interactions as the fundamental form in which

transactions and relationships can be grasped (see also Goffman [1971, p. 194]). A micro-analytics of competitive transactions investigates how these activities create surprises and endow them with specific properties, in relationship to the cognitive activities of participants. This does not mean that emotions are left out of the picture. Quite the contrary: such an investigation will not work on the premise of an opposition between cognition and emotions, but will focus on their interplay within concrete transactional situations. Moreover, the focus on transactions as interactions will pay attention to the background of routines and mutual understandings deployed by participants, investigating how they make possible the production of informational surprises. This implies an extension of the sociological research programme from the examination of uncertainty-processing routines (see Beckert [1996]) to the examination of how uncertainties are produced against the background of routines. Also, a micro-analytics of competitive transactions pays close attention to the valuation processes at work here. In the same way in which competitions on the soccer field are about social valuations (along attributes such as speed, endurance, or cunning), competitive transactions are about social valuations as well—about what Erving Goffman (1970, p. 96) calls gameworthiness. The task here is to investigate how such valuations intervene in the constitution of prices, and how they affect the outcome of transactions.

2. A sociology of markets centred on information investigates how the social distribution of knowledge sets up parameters within which information-based competitions take place, and how these parameters affect information. Social distribution of knowledge includes here forms of social knowledge related to the status, situations, and relationships of participants. To come back to the soccer metaphor, we need to investigate here the social parameters of the playing teams and their publics, parameters expressed in network, group, and organizational features, among others. We need to investigate how these publics are constituted along social attributes, how ‘admission tickets’ or procedures are set in place for letting participants in the stadium where the game is played, and how such entrance tickets are intrinsic to playing the game. And, in the same way in which a stadium has boundaries—material, spatial, temporal, and social—we would need to investigate how the boundaries of competitive transactions are constituted, and the role they play with respect to the legitimacy of such games.

3. A sociology of markets pays close attention to the ‘commenting public’ which is part of the game’s play—that is, to how authoritative judgements and opinions are fed into and influence the game itself, shaping its informational features.

4. An information-centred sociology of markets pays close attention to the material tools and artefacts used in playing competitive exchange games. It

investigates the technologies used in producing, storing, processing, and distributing informational surprises, such as price data. It also investigates technologies used by the ‘commenting public’ playing the game, such as news and analyses.

5. Finally, a sociology of markets investigates the impact of rules upon competitive games, and of the bodies which set them up, watch upon, and intervene in the game. Such rules constrain the ways in which information is generated within competitive exchanges, as well as how these exchanges relate to society at large. To invoke again the soccer metaphor: the match and its stadiums are not set in the middle of nowhere, but are part of the city—that is, of the polis, understood as social and political communities with established institutions. In the same way in which soccer matches resonate within and are consequential for the city, plays of competitive games resonate within the polis. In the same way in which soccer matches are overseen by boards and associations (of clubs, leagues, city councils, etc.), plays of competitive games are relevant for and involve boards (or organizations) from outside the game itself. We would need then to investigate the relationships between social and political institutions, on the one hand, and informational competitions, on the other, examine how rules, regulations, and interventions shape the game, how they constrain or enable the ways in which information is produced.

The following chapters are an attempt to examine competitive informational transactions along these lines, summarizing, presenting, and discussing research done during the past decades in the field of economic sociology. In the preceding paragraphs, I have argued that the basic analytical unit of the sociology of markets, the transaction, cannot be separated from the interaction order. In the same way in which a soccer match cannot take place but in interaction sequences, these latter are intrinsic to market transactions. It is time, then, to descend upon the places where transactions are played: in the following chapter, I will take readers not only to well-equipped stadiums, but also onto some green fields, not to mention a couple of streets where traders kick the ball—in their own way, of course.

□ NOTES

1. The plasticity of the notion of information in everyday language is quite convenient: when we say that we have received information, there is information waiting for us, we are going to send information, or this and that is valuable information (or not), we mean a variety of interactions and practical handlings of artefacts, ranging all the way from face-to-face verbal exchanges to looking at flickering numbers on a computer screen, or peering down through a microscope. Information, however, can be seen as a non-human process as well: for instance,

as a measure of physical organization or as the reproduction of selection processes (Capurro and Hjørland 2003, pp. 344, 360–4). In this case, information has an eminently material character, consisting in exchanges and interactions at various levels of the organization of matter. When seeing information as a social process, we need to distinguish between the meanings of the term, on the one hand, and the concrete actions implied by each of these meanings, on the other. At the same time, we need to keep in mind that information as a human process has a material character as well, since it cannot be separated from the production, handling, and use of artefacts.

At the level of social processes, information can be seen at least as: (a) patterns of communication, broadly understood; (b) forms of control and feedback; (c) the probability of a message being transmitted through a channel; (d) the content of a cognitive state; (e) the meaning of specific linguistic forms (Bogdan 1994; Capurro and Hjørland 2003, p. 356). Information appears thus as a resource, a commodity, as perception of patterns, and as a constitutive force in society.

From the general and imperfect enumeration above, it appears that information can mean different things to various social science disciplines, and that such a level of generality will not bring us much further in understanding the relationship between market exchanges and information. Even if we narrow down the investigation to sociology, we can see that the meaning of the term momentarily stays very general: the ‘information society’ is characterized by the infrastructure supporting ‘informational services’ (Lash 2002; Webster 2002, p. 73)—in other words, by changes in the economic composition of developed societies, changes favouring specific classes of industries (the service sector, specialized in data processing and analysis, as well as parts of the entertainment sector). In other, more specific interpretations, information is seen as communication among people who do not know each other and who have little basis for mutual understanding (Porter 1994, p. 217). Especially dispersed people, who have little direct contact with each other, if any, will need technologies of large scale trust in order to be able to communicate with each other (Porter 1994, p. 220). This leads to the creation of information as standardized objects with the help of which people communicate. This would mean that information can be anything related to such technologies of trust, not just numbers. It would also mean that something like gossip among friends would be excluded from the category of information, which would be counterintuitive.

2. Following Erving Goffman (1972, pp. 33, 61), I distinguish here between a game (a set of rules prescribing and constraining action routines), a play of a game (the concrete event of applying such routines in a sequence of actions), and gaming encounters (the specific sequences involved in playing a game of X).
3. We can of course encounter less formal plays where members of the public can be drawn into the play, but such possibilities are still limited, among others because the play has to be made witnessable.
4. In special circumstances, the win of a match can be awarded by decree to one team, but this is an exception rather than the rule and usually understood as punishment.
5. The public is not understood here as the fiction of the ‘general public’. In the same way in which the public on a soccer stadium is overwhelmingly made up of fans of soccer—people with a specific knowledge, attachments, and preferences, etc.—the public of competitive transactions can be restricted according to profession, income, education, or gender, among others.

6. The notion of uncertainty is understood here not as a general theoretical reflection (of the kind 'where is the world going?'), but as action sequences which do not fit situational expectations, requiring responses from participating actors. In a soccer match, for instance, a dummy pass is meant to deceive the opponent by running counter to his expectations: it constitutes a surprise to which the opponent's actions adapt ad hoc, even if this implies drawing upon a pool of existing routines, analogies with past situations, and the like.
7. I borrow here the concept of lamination from Erving Goffman (1974, pp. 82, 156–7), understood as the unfolding of various layers of meaning within one and the same activity, layers achieved through transformations of 're-keyings'. Re-keyings are redefinitions of an ongoing activity, understood by participating actors as taking the said activity in a different direction. In a soccer match, for instance, when two players compete for the ball, this can be understood by participants as a trial of skill or as a means of averting a potential goal.
8. In *The Protestant Ethic and the Spirit of Capitalism*, Weber ([1920] 1988, pp. 190–3) argues that the ethic of capitalist accumulation is grounded in a specific theology, which increases the uncertainty of redemption, and thus sets hope as the fundamental driving capitalists to accumulate capital and use it in a rational fashion. Because redemption becomes an uncertainty, capitalists strive to lead a righteous life, based on frugality, continuous accumulation, and economic calculation. They hope thus that their souls will be redeemed. In this perspective, capitalist economic transactions are ultimately driven by a specific form of religious ethics.
9. Max Weber, for instance, states that capitalist market transactions have an objective character, in the sense that they are not conditioned by group or tribe membership; the same criteria would apply to transactions between members of the group, on the one hand, and between a member and a non-member, on the other. These criteria are those of profitability, and are determined by the universalist ethics of capitalist calculation (Weber [1922] 1972, p. 49). This doesn't necessarily mean cooperation: for Weber, capitalist market exchanges are characterized by conflict and compromise of interests, which determine prices.
10. Georg Simmel, writing after Marx, saw money as the objectified form of social relationships in the capitalist society. Money is important not only because it affords us to buy commodities, but first and foremost because in a highly individualized, atomized, and differentiated society, it provides us with the means of entering into social relationships of various duration and stability (Simmel [1901] 1989, pp. 394–5).
11. Weber sees this increased interdependency as being triggered primarily by the expansion of financial markets: in the process of buying and selling financial securities, a web of tributary relationships is created (Weber [1894] 1924, p. 274). This increases reciprocal dependency and thus contributes to holding together a highly individualized and atomized society.
12. The automation is partial because, among others, the buyer side still relies on human ad hoc decision. An automated grocery shopping system could be imagined as software which automatically detects and evaluates the contents of the fridge and then, based on the owner's past preferences, scans online supermarket offers and buys accordingly. Such a system would require a combination of calculative, objectified, and institutional trust.
13. One consequence of this would be to question the usual distinction we make between economic institutions, on the one hand, and other types of institutions on the other, a distinction that has caused much discussion in economic sociology. Max Weber, for instance, saw the stock exchange not only as an economic institution, but as a political one as well (Weber [1894] 1924, p. 316). As such, economic institutions contain elements of

political power as well, are oriented to political interests and subject to political influences. This argument was repeated later, in a modified form, by Karl Polanyi (1945). It should not be confused with the idea of structural embeddedness (Granovetter 1985), according to which economic transactions are embedded in networks of relationships. It has been sometimes expressed, however, as the political embeddedness of economic transactions (e.g. Zukin and DiMaggio [1990]).

14. This does not mean, however, that illegitimate (or even illegal) transactions cannot link in with legitimate ones and parasitize their resources. An example in this sense is provided by illegitimate services (e.g. sex for money) being offered in the backrooms of legitimate businesses. I discuss such situations in Chapters 1 and 2.
15. The sequential character of actions means that they are not revealed in their entirety at once, but unfold step by step: buying bread requires putting on a coat, getting out of the door, walking to the bakery, etc. The polythetic character of action means that, because they are sequential, action parts can be subsumed to various definitions. Getting out of the door can be part of going to buy bread, or of going to see a neighbour.
16. There are close parallels between Garfinkel's position, on the one hand, and Martin Heidegger's argument ([1926] 2001, p. 75), on the other. Heidegger sees the breakdown of routines (for instance, when a tool does not work) as revealing the self's attitude of care to the world. This revelation generates surprises, not the routines as such. I am grateful to Karin Knorr Cetina for pointing out this similarity.
17. Strictly speaking, informational surprises are constituted within webs of interactions which include handling an array of artefacts such as images of the car, as well as storytelling, rhetorical strategies, and much more.
18. A new car model cannot be an informational surprise for somebody who does not drive and does not invest in financial securities, though talk about the model, or images of it can be used to create surprises, say, at a dinner party. This shows that market information can be transformed and transplanted outside economic exchanges, based, as argued above, on the polythetic character of information.
19. Arguments coming from economic anthropology had made clear the limitations of a functionalist approach according to which markets are simply arrangements for the distribution of scarce material resources. First, scarcity and abundance are a matter of collective perceptions (see Sahlin [1972] for a critique of the notion of abundance), and therefore cannot be separated from group interactions. What is scarce and what is not, what is a resource and what is not are distinctions emerging in a group's activities. Second, resources themselves have a dynamic character, changing with the activities of a group, and not being limited to material artefacts.