

For a Sociology of Worth

David Stark

Columbia University and the Santa Fe Institute

Department of Sociology
Columbia University
1180 Amsterdam Ave
New York, NY 10027
dcs36@columbia.edu

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Parsons' Pact

Arguably, the founding moment of the field of economic sociology took place more than a half-century ago at Harvard, where Talcott Parsons was developing his grand designs for sociology. Parsons' ambitions were imperial, but there was one field that Parsons maneuvered around instead of claiming outright. That field was hegemonic in his time and is considerably hegemonic still – the discipline of economics. Parsons, therefore, made overt signals to his colleagues in the Economics Department at Harvard alerting them to his ambitious plans and assuring them that he had no designs on their terrain (see Camic 1987). Basically, Parsons made a pact: in my gloss – you, economists, study value; we, the sociologists, will study values. You will have claim on the economy; we will stake our claim on the social relations in which economies are embedded.

What have been the effects of Parsons' Pact? First, by limiting its range, this jurisdictional division of the social sciences placed constraints on sociology. But those constraints were enabling constraints: by delimiting a legitimate object of study – society, though not the economy – it ensured that the discipline would flourish in the great postwar expansion of the social sciences.

Parsons' Pact also had another effect, for it specifically established the conditions for economic sociology. Recall the terms: economists study value, economic sociologists study values; they claim the economy, we claim the social relations in which economies are embedded. In fact, Parsons' Pact is still operative today because the terms of the treaty continue to structure much of the field of economic sociology. Although the treaty has been fruitful, it is now time to reconsider its terms. We did not sign it, and we should no longer be bound by its terms. To realize the actual potential of economic sociology will require that we do our work under new terms.

Economy/Embedded Social Relations

Take first the economy/society divide: economic relations on one side, embedded social relations on the other. One can scarcely think of a more fruitful concept for economic sociology than that of embeddedness – reintroduced from Polanyi by Granovetter (1984), and elaborated and developed by him and many others. Central to the embeddedness framework is the dichotomy of calculation versus trust. At its core is the Durkheimian notion of the precontractual basis of contract, and with it the idea that instead of calculation we should be examining the social relations the generate trust.

These are valuable insights and even economists are beginning to cite economic sociologists on these concepts. But we would simply be spinning our wheels if we leave the analysis of markets and of economic relations to economists while focusing our efforts on the social relations in which they are embedded. We should break out of Parsons' Pact. One of the proofs that we can do so is found in the work of Harrison White (1981, 2001). White has basically turned the tables on the terms of the pact. Markets, he argues, are not simply embedded in social relations, they are social relations. Instead of accepting the economists' conception of markets, he has developed a sociological theory of markets.

Value/Values

Let's turn next to the other pair of terms in the jurisdictional divide: value on the economists' side, values on the sociological side. On this issue, the formative insight for economic sociology came from the organizational ecologists. Whereas economists look at how firms differ in terms of the efficiency in allocation of resources, the organizational ecologists wondered how firms (or organizations more generally) differed in terms of their access to resources. One of their important conclusions was that legitimation matters. They made legitimacy a variable, and found that firms (or organizations more generally) that were more legitimate have better access to resources.

The sociological institutionalists (Meyer, DiMaggio, Powell and others) elaborated and developed these ideas. Like the embeddedness opposition of calculation versus trust, they worked with the opposition efficiency versus legitimacy. An economic system based on value is embedded in institutions, cultural and legal systems based on values and norms. This school of sociological institutionalism has produced an impressive body of work. We can and should do more work along these lines; but we should be clear that so long as we accept this value/values dichotomy, we're basically running on the Parsonsian track.

Here too, as with Harrison White's transgression and transcendence of the markets/social relations dichotomy, we can point to promising avenues of escape from Parsons' Pact. I think especially of a group of French economic sociologists whose work is collectively labeled "the economics of convention," and, in particular, of the work of Luc Boltanski and Laurent Thévenot (1991) in their book *De la justification: Les économies de la grandeur* (On Justification: The Economies of Worth).

Risk and Uncertainty

Whereas the American institutionalists start with the division of efficiency versus legitimacy, the French conventionalists can be seen to start with Frank Knight's problem of risk and uncertainty. Uncertainty and risk are both shaped by the fact that the future is unknown. In circumstances of risk, chances are calculable; that is, the distribution of outcomes can be expressed in some probabilistic terms. Uncertainty, however, lacks calculation: "All bets are off."

Neoclassical economics, of course, reduces all cases to risk – because theirs is a world of calculation, not of judgment.¹ By contrast to this neo-classical view, Knight argued that a world of generalized probabilistic knowledge of the future leaves no place for the entrepreneur, and as a consequence, no place for profit. For Knight, profit is a particular residual revenue because it is not susceptible to measure *ex ante* – as distinct from rents that constitute contractualizable residual revenue. Properly speaking, the entrepreneur is not rewarded for risk-taking but, instead, is rewarded for an ability to exploit uncertainty.

I return to this point about entrepreneurship (however, with a twist) below. But before doing so I need to show how the conventional school has broken the treaty – you, the economists, study value, we sociologists study values. Just as Harrison White has developed a sociological theory of markets, Boltanski and Thévenot are developing a sociological theory of value. Their first move is to demonstrate that there is not just one way of making value but that modern economies comprise multiple principles of evaluation (or as they say, multiple orders of worth).

One might object that this is not an escape from Parsons' Pact. After all, as soon as you make a plural out of value, you get values. But orders of worth of the French school are in fact very different from the cultural systems of the Parsonian institutionalists. For my American institutionalist colleagues, values are counterpoised to calculation, they are outside and distant from calculation. More precisely, if values are the embeddings for value that somehow makes calculation possible, it is precisely because values are a kind of anti-matter to calculation. For my French conventionalist colleagues, on the other hand, orders of worth are not values counterpoised to value but are constitutive of value, they are the very fabric of calculation, of rationality, of value. As principles of evaluation they involve systematic associations of ideas – and thus have some similarity to culturalist notions – but they go beyond that similarity to show how each of the multiple principles of evaluation entails discrete metrics, measuring “instruments,” and proofs of worth objectified in artifacts and objects in the material world (see also Callon and Muniesa 2005).

As such, I interpret their work as suggesting an entirely different way to understand Simon's phrase “bounded rationality” – certainly different from its appropriation by Williamson. Whereas we conventionally think about bounded rationality as the cognitive limits on rationality, in Boltanski and Thévenot's work rationality is only possible insofar as it takes place within the boundaries and through the social technologies of particular

¹ It is as if, from the polysemic opening turn of Wittgenstein's (1922/1999) treatise which begins with the question “What is the case?” they squeeze out the ambiguity and reduce every situation to the question “What is this a case of?” since the problem is simply to find how that case conforms to some category or type about which statistical or probabilistic knowledge exists or can be constructed. Missing in neo-classical economics is the operation of judgment – making a case for...

orders of worth. In this latter sense we should probably speak – and with a very different meaning – of bounded rationalities.²

Entrepreneurship as the Exploitation of Ambiguity

Returning to the problem of risk and uncertainty, the French conventionalists would respond that conventions are a way of dealing with uncertainty. They are technologies, engines, for turning situations into calculative problems. Orders of worth can be considered as means to transform uncertainty into risk. The limitation of this view – and here is my point of departure – is that it does not give adequate attention to the problem that orders of worth cannot eliminate uncertainty. In particular, they cannot eliminate the possibility of uncertainty about which order or convention is operative in a given situation. Taking this into account, we are in a position to restate the insight of Knight, but now in new terms: it is precisely this uncertainty that entrepreneurship exploits. *Entrepreneurship is the ability to keep multiple orders of worth in play and to exploit the resulting overlap.*

This conception of entrepreneurship can be further distinguished from notions of entrepreneurship as brokerage. In that view, the entrepreneur exploits “holes” in the social field, strategically locating gaps and profiting from the ability to broker among units that are otherwise disconnected (e.g., Burt 1995). In the approach developed here, by contrast, entrepreneurship occurs not at the gap but through the productive friction at the overlap of evaluative frameworks.

As an ability to promote productive friction, entrepreneurship is not the property of an individual – it is not, for example, the personality trait of tolerating ambiguity. Instead, it has an organizational basis. That is, organizational forms will differ in their capacity to sustain an ongoing rivalry among coexisting principles of evaluation. I use the term “heterarchy” to refer to the organizational forms with this reflexive capacity.

Heterarchy: Distributed Intelligence and the Organization of Diversity

Heterarchy represents a new mode of organizing that is neither market nor hierarchy: whereas hierarchies involve relations of *dependence* and markets involve relations of *independence*, heterarchies involve relations of *interdependence*. As the term suggests, heterarchies are characterized by minimal hierarchy (lateral accountability) and by organizational heterogeneity (diversity of evaluative principles).

² Boltanski and Thevenot’s study suggests that I would be mistaken to say that I “live in a market economy.” Markets are, indeed, one of the organizing principles of the U.S. economy. But, as they show in their study of the domain of the corporation, in addition to a market rationality, that economy also has a technological rationality, another organized around a civic logic, and still others according to principles of loyalty, inspiration, and fame.

Heterarchy's twinned features are a response to the firm's increasingly complex foresight horizons (Lane and Maxfield 1996), where dislocations can be anticipated in general but are unpredictable in their specific contours. To cope with radical uncertainties, instead of concentrating its resources for strategic planning among a narrow set of senior executives or delegating that function to a specialized department, heterarchical firms embark on a radical decentralization in which virtually every unit becomes engaged in innovation. That is, in place of specialized search routines in which some departments are dedicated to exploration while others are confined to exploiting existing knowledge, the functions of exploration are generalized throughout the organization.

These developments increase interdependencies between divisions, departments, and work teams within the firm. But because of the greater complexity of these feedback loops, coordination cannot be engineered, controlled, or managed hierarchically. The results of interdependence are to increase the autonomy of work units from central management. Yet at the same time, more complex interdependence heightens the need for fine-grained coordination across the increasingly autonomous units. These pressures are magnified by dramatic changes in the sequencing of activities within production relations. Like the production of "B movies" in which filming begins before the script is completed, successful strategies integrate conception and execution, with significant aspects of the production process beginning even before design is finalized. In such concurrent design, the various project teams engage in an ongoing mutual monitoring, as innovations produce multiple, sometimes competing, proposals for improving the overall design.

Under circumstances of simultaneous engineering³ where the very parameters of a project are subject to deliberation and change across units, authority is no longer delegated vertically but rather emerges laterally. As one symptom of these changes, managers socialized in an earlier regime frequently express their puzzlement to researchers: "There's one thing I can't figure out. Who's my boss?" Under conditions of distributed authority, managers might still "report to" their superiors; but increasingly, they are accountable to other work teams. Success at simultaneous engineering thus depends on learning by mutual monitoring within relations of lateral accountability. Management becomes the art of facilitating organizations that can reorganize themselves.

This capacity for self-redefinition is grounded in the organizational heterogeneity that characterizes heterarchies. Heterarchies are *complex* adaptive systems because they interweave a multiplicity of organizing principles. That is, heterarchies are not simply non-bureaucratic: The new organizational forms are heterarchical not only because they have flattened hierarchy, but also because they are the sites of competing and coexisting value systems. The greater interdependence of increasingly autonomous work teams results in a proliferation of performance criteria. Distributed authority not only implies

³ On simultaneous engineering see Dorf and Sabel (1998). Conventional design is sequential, with subsystems that are presumed to be central designed in detail first, setting the boundary conditions for the design of lower-ranking components. In simultaneous engineering, by contrast, separate project teams develop all the subsystems concurrently.

that units will be accountable to each other, but also that each will be held to accountings in multiple registers. A robust, lateral collaboration flattens hierarchy without flattening diversity. Heterarchies create wealth by inviting more than one way of evaluating worth.

Organizational ecologists have long held that adaptability is promoted by the *diversity of organizations* within a population (e.g., Hannan 1986). The perspective adopted here, by contrast, is that adaptability is promoted by the *organization of diversity*⁴ within an enterprise. The adaptive potential of organizational diversity may be most fully realized when different organizational principles co-exist in an active rivalry⁵ within the firm. By rivalry, I do not refer to competing camps and factions, but to co-existing logics and frames of action. The organization of diversity is an active and sustained engagement in which there is more than one way to organize, label, interpret, and evaluate the same or similar activity. Rivalry of evaluative principles produces creative friction (Brown and Duguid 1998) and fosters cross-fertilization.⁶ It increases the possibilities of long-term adaptability by better search because the complexity that it promotes and the lack of simple coherence that it tolerates increase the diversity of options. The challenge of the organization of diversity is to find solutions that promote constructive organizational reflexivity – the ability to redefine and recombine resources.

Heterarchical organizations are perpetually poised to pursue innovation. They are not only capable of learning but are also capable of suspending accepted knowledge and established procedures to redraw cognitive categories and reconfigure relational boundaries – both at the level of the products and services produced by the firm and at the level of the working practices and production processes within the firm. They innovate in ways that allow them to re-cognize, redefine, recombine, and redeploy resources for further innovation. These organizations “invest in forms” (Thevenot 1984) that allow for reconfiguration and hence minimize the costs of “divestment” or reorganization. Such capacities for organizational innovation go beyond the discovery of new means to carry out existing functions more effectively and efficiently. Under conditions of radical uncertainty, organizations that simply improve their *adaptive fit* to the current environment risk sacrificing *adaptability* in subsequent dislocations (Grabher and Stark 1997).

⁴ “[T]he sphere of complexity is that of organized diversity, of the organization of diversity” (Morin 1974:558).

⁵ On rivalry, see especially Grabher (1997).

⁶ “Recombination plays a key role in the discovery process, generating plausible new rules from parts of tested rules” (Holland 1992:26). “Novelties come from previously unseen association of old material. To create is to recombine” (Jacob 1977: 1163). Or, in Harrison White’s (1993) terminology, “values mate to change.”

Multiple Accounts of Worth in a Silicon Alley Startup

I turn now to briefly summarize two case studies of heterarchical organizations in which multiple evaluative criteria are at play. The first is that of a new media startup in Manhattan's Silicon Alley where Monique Girard and I conducted ethnographic field research from 1999-2001 (Girard and Stark 2002). Pseudonymous NetKnowHow was a website development and consulting company with about 125 employees at the height of the internet boom.

The challenge of relentless innovation. Every new media firm that was in the business of constructing websites had to cope not only with the problem that the field was in flux but also that every successful innovation in carving a niche, creating a new product, defining a new business model, or introducing a new technology could be replicated by competitors. Unlike high tech firms in fields such as biotechnology where patents could protect intellectual property, in the new media field innovations were not likely to yield a stream of rents. Under circumstances of low barriers to entry (because innovations – in genre, technology, and organization – could be easily assimilated), firms were forced to be relentlessly innovative.

Thus, firms could not prosper simply by learning from their construction projects. It was not enough to master the project form, to codify, routinize, or even perfect what they had been doing. If you locked-in to what you had done previously, regardless of how much you improved performance by your existing criterion, you would be locked out of markets that were changing rapidly. On the other side, if you spent all your organizational resources searching for new products and processes, always and everywhere exploring for new opportunities, you would never be able to exploit your existing knowledge. For the new media companies, March's (1991) problem of "exploration versus exploitation" could be rephrased as the problem of staying ahead of the curve without getting behind on your deadlines.

The distributed intelligence of collaborative engineering. The process of designing and building a website at NetKnowHow, as in new media firms generally, takes the organizational form of a project. A project is not a permanent construct but is a temporary ensemble whose players had been working on other projects before and will move to other projects after its conclusion. Some projects last no more than a month. Some, whether because of their innate complexity or because of indecision or insolvency on the client side, can last five or six months. The typically sophisticated project runs 60-90 days, and this extraordinarily compressed time to market is an important factor in project dynamics. The participants in a project include business strategists, interactive designers, programmers and other technologists, information architects (IA), and merchandising specialists.

The challenge for the website developers is to build a site in which the activities of the end user are seamlessly linked to the various other computers to which the site is interfaced. The performance of the website critically depends on the performance of an actor – the user – whose actions might be anticipated but cannot be controlled. It is this

interdependence that most dramatically increases the interdependencies among the website construction crew. A programmer can design a beautiful interface between the website and the suppliers, but she needs to make sure that it doesn't interfere with how the information architect is thinking about navigational issues for the interface to the user. The more the site is truly interactive, the more the various parts of the team must interact. A change in the categories of the database, for example, can change parameters for the graphic designers and vice versa. The more the intelligence of the site is distributed – including, most critically, the user's intelligence⁷ – the more the construction site must use a distributed intelligence among the team in collective problem solving. When graphic designers and database programmers speak, the phrase “being on the same page” can refer to an injunction to focus on the same problem, a request to consider how an action will have consequences in another sphere, an opportunity to bring each other up-to-date on new methods, applications, functions, and reporting systems as well as quite literally being on the same page of code.

The more they must take into account how their actions will shape the parameters of others, the more the web developers must increase the lines of lateral accountability. As a young programmer explained to us in an apt epigram for collaborative engineering: “In this company, I'm accountable to everybody who counts on me.”

Multiple performance criteria. The directionality of accountabilities in heterarchical organizations such as NetKnowHow is lateral. But these accountabilities are not of a singular logic. These are sites where evaluative principles operate in multiple registers. If collaborative engineering involves the pragmatic activity of figuring out how everything fits together, it also involves the discursive activity of evaluating how it performs.

You build a website that works. But, as more websites get built, you cannot make a distinction between yours and others' simply on the grounds that yours works. You say that yours performs better. But then immediately you must begin to articulate your performance criteria.⁸ You cannot silence the talk about evaluative principles and point to a purely pragmatic frame since your claim that you are making a valuable product raises the question not only of what is its value but why.

Questions of value – the value of work and the value of the product of work – are central to a web project. At NetKnowHow, some criteria of worth are shared across all communities. Formal credentials are unimportant; actual skills are critical. Not surprisingly, in this project-based organization, an ability to work well with others is highly valued. This trait has several components. First, an ability to get along with others in an extraordinarily stressful and fast-paced environment. Knowing the subtle cues for when and how you can interrupt is one of the skills relevant in this area. Second, an ability to convey knowledge (whether explicit or tacit) to others. Finally, and most

⁷ See Neff and Stark (2003) for a discussion of efforts to bring the user into the design process.

⁸ See Hennion (1997) for a fascinating analysis of performance criteria in the field of music.

ubiquitous, an ability to figure things out quickly. As important as (and for some even more important than) one's absolute or relative knowledge is the rate of acquiring new skills and knowledge as well as being talented in being able to re-think a problem so that it can be solved. "Picking things up quickly" is highly valued whether within a community of practice or across them.⁹

However, not all criteria of worth are shared. The different communities of practice at NewKnowHow differ in their conceptions of value and in their measures of performance:

For **programmers**, a good programmer is above all logical, and a good site must be judged by the same criterion. When she performs well, she does so with speed, efficiency, and accuracy; and a good website must do the same. A good programmer can translate – express a functionality in the language of a computer code that is categorical and hierarchical. A good programmer understands the deep structure as well as the quirks and idiosyncracies of the program. When she speaks it is not simply on behalf of other programmers but on behalf of the program. The legitimate tests and proofs of worth are Quality Assurance tests and other instruments that measure the speed, efficiency, security, and reliability of the site.

For **designers**, a valuable designer must be knowledgeable about processes of perception, and a good website must use graphic cues that conform to these processes. When he performs well, he does so with creativity, and the results will be exciting and stimulating. A good designer is also a translator – into a language that is visual, intuitive, and interactive. At work he engages in a visual dialogue with other designers, the client, and users. When this work of translation is successful it makes links to the imagination because both the client and the user live not only in a real world and a virtual world but also in imaginary worlds. The designer's translation creates multiple links among all these – in the process, making connections between the self-image of the client and that of the user. Exploiting interactive as well as visual features, he creates the overall "look and feel" through which the site achieves the desired effects/affects and conveys a branding experience. If necessary, he has authority to argue with the client provided he speaks as an advocate of the brand. Winning clients, winning audiences, and winning competitions are legitimate proofs of worth.

For **information architects**, a good information architect must be knowledgeable about principles of cognition. A site that successfully applies these principles will be characterized by clarity, ease, and above all usability. A good website conveys information by creating navigable pathways that conform to cognitive pathways. An information architect's activities are

⁹ In 2000 NetKnowHow initiated a formal evaluation process for all employees. Each employee was able to choose five co-workers to write evaluations. "Picking things up quickly" was one of the most frequently mentioned positive traits. The summary statements below draw from these evaluations, as well as from our field interviews and observations.

valuable because they are based on studies that use statistics to understand user behavior. In discussions with other members of the project, including the client, the information architect is an advocate of the user. The user lives in a world of information that is accessed through tools some of which are more and some of which are less appropriate for the tasks that the user attempts to perform. “Conversion rates” and other statistical metrics of user activities are legitimate tests of a website’s performance.

For **merchandising specialists**, a good website is one that moves product. To do so, a good online merchandiser exploits powers of suggestion. Because the shopper lives in a world of desire, she is open to suggestion. Playfulness takes precedence over information, surprise takes precedence over search, product placement takes precedence over navigation, and pleasurability takes precedence over usability. Proofs of value are metrics that measure how product is moving in relation to inventories.

The various communities of practice at NetKnowHow were articulate and adamant about their respective performance criteria. “We yell and scream” was a repeated refrain in conversations when we talked about this friendly rivalry. Discussions could be heated, especially when proofs of worth were not immediately recognized outside of the frames that made them seem so obvious to their proponents. The statistical studies on user behavior produced by the leading information architect, for example, were characterized by a leading designer as “arbitrary,” provoking the counter-charge that this was yet another instance in which he, the designer, was being “irrational.”

Despite occasional flare-ups, the temperature stayed cool since the dominant mode was persuasion rather than denunciation. Because every community of practice was a minority view, each attempted to enlist or enroll others in recognizing the legitimacy of their performance criteria. In this process of ongoing realignment (Latour 1986), people spoke openly about seeking allies.

We saw this process at work, for example, in a dispute over competing claims about who could speak on behalf of “the user” that ranged for many months at NetKnowHow and was still ongoing when we concluded our field work. This development was triggered by the information architects who thought that they had a special claim on knowledge about the user. Their hope was that every group would start focusing on the user’s performance and that by, maintaining their special definition, they could raise their own performance criteria to a special status to which all groups gave credence. The information architects’ strategy was initially successful: as references to “the user” indeed circulated through the company, we could hear this theme more and more frequently in discussions, formal and informal.

But the strategy also had consequences unintended by the information architects: instead of deferring to the information architects, each of the disciplines began to articulate their own definitions of the user consistent with their value systems and metrics of performance. That is, each community developed its own distinctive claims to represent

the user. The merchandizing specialists, who had previously seemed to be speaking on behalf of the merchandiser, offered seminars in which they presented their view of the user as “shopper” and mobilized an alternative set of findings. Similarly, the firm’s leading designer, who was genuinely most attentive to the studies of the information architects, came to the defense of the designer who had derided them as “arbitrary,” pointing out that these statistical studies were of limited value because they were conducted at a particular stage of the development of the web. In a variety of settings, he suggested new directions in the evolution of the web that could make these findings obsolete. And, more quietly but quite forcefully in their individual interactions with the other communities, even the programmers began to articulate their own representation of the user.

Disputes such as this were vital for firms like NetKnowHow. If the firm locked-in to a single performance criteria, it could not be positioned to move with flexibility as the industry changed and the web evolved. Thus, even the principle we have not yet mentioned – profitability – was not itself an evaluative principle that trumped all others since continuing profitability was itself based on the ability to anticipate new developments and re-cognize new performance criteria for evaluating well-designed and well-functioning websites. Tolerating, even encouraging, such friendly rivalry was a source of innovation to navigate the search for value within the young industry.

Collaborative engineering is a discursive pragmatics. It is, at once, an ongoing conversation and an intensely practical activity. I present to you accounts of my work so that you can take my problems and goals into account in yours. We do what works to make it work. We need to talk to get the job done, but to get the job done we need to stop talking and get to work. We give reasons, we explain the rationale, but we use different rationalities. We do not end disputation so much as suspend it. To build sites, we make settlements.

For the members of web projects, the process of building websites has the result that things settle down, people settle in. They work out ways of dividing tasks and managing the relationships across their professional boundaries. On many issues they reach agreement. But frequently, instead of reaching an agreement, they reach a settlement. Like the term itself with its connotations of law and locality, our informants at NetKnowHow reach settlements 1) by judicious appeals to other actors who are outside the dispute, and 2) through their highly localized practices. When the incommensurable systems of value come into conflict in a project they are sometimes settled by contingent compromises (often through appeals to the project lead) and by “relativization” (through appeals to the client). In relativization (Boltanski and Thevenot 1991), the parties to the disagreement can maintain their principled position; they merely agree to accede to whatever outcome is chosen by the “outsider.” “So, it’s settled, right?” The highly localized practices of the project, so confined in space and time, further contribute to temporary settlements. Working in such tight quarters creates a forced intimacy and a heightened tolerance. Where everything is overheard and everyone is monitoring not only what is said but also the tone of voice, project team members are on the alert for a pitch of voice that signals an unproductive impasse. “Ok, let’s settle this and get back to

work.” Deadlines have a way of settling disagreements. Not surprisingly like those on the landscape of the web, these settlements are more provisional than permanent. Limited in time, localized in space, a project is a provisional settlement.

The provisional character of project settlements is an expression of discursive pragmatism. Pragmatic, because provisional settlements make it possible to get the job done. Discursive, because provisional settlements are open to reinterpretation when the project is concluded and the next begun.

Our understanding of collaboration in heterarchical organizations is thus more complex than coordination within a project. A frictionless coordination, in which everyone shared the same performance criteria, might make life smooth for project managers; but it would lose the creative abrasions (Brown and Duguid 1998) that are the source of ongoing vitality. Settlements facilitate coordination within projects; the unsettling activity of ongoing disputation makes it possible to adapt to the changing topography of the web across projects in time. Friction promotes reflection, exposing variation from multiple perspectives. Friction can be bountiful because complex coordination is a function not only of the values we share or of the language we have in common but also of our creative misunderstandings.

Searching for Value in an Arbitrage Trading Room

In a second case study, Daniel Beunza and I conducted ethnographic field research in the Wall Street trading room of a major international investment bank (Beunza and Stark 2004). Pseudonymous International Securities is a global bank with headquarters outside the United States. It has a large office in New York, located in the World Financial Center in Lower Manhattan with about 160 traders in its arbitrage unit.

The challenge of arbitrage. Arbitrageurs locate value by making associations among securities. At the sophisticated level of trading at International Securities there is a sharp premium on making novel, unexpected, and innovative associations. Arbitrage is a distinctive form of entrepreneurial activity that exploits not only gaps across markets but also the overlaps among multiple evaluative principles. Arbitrageurs profit not by having developed a superior way of deriving value but by exploiting opportunities exposed when different evaluative devices yield discrepant pricings at myriad points throughout the economy.

As with value and momentum investors, arbitrageurs need to find an opportunity, an instance of disagreement with the market’s pricing of a security. They find it by making associations. Instead of claiming a superior ability to process and aggregate information about intrinsic assets (as value investors do) or better information on what other investors are doing (as momentum traders do), the arbitrage trader tests ideas about the correspondence between two securities. Confronted by a stock with a market price, the arbitrageur seeks some other security – or bond, or synthetic security such as an index composed of a group of stocks, etc. – that can be related to it, and prices one in terms of

the other. The posited relationship can be highly abstract.¹⁰ The two securities have to be similar enough so that their prices change in related ways, but different enough so that other traders have not perceived the correspondence before. The tenuous or uncertain strength of the posited similarity or co-variation reduces the number of traders that can play a trade, hence increasing its potential profitability.

In short, arbitrage hinges on the possibility of interpreting securities in multiple ways. Like a striking literary metaphor, an arbitrage trade reaches out and associates the value of a stock to some other, previously unidentified security. By associating one security to another, the trader highlights different properties (qualities) of the property he is dealing with.

As Daniel and I studied how the room is organized for this process of discovery, we came to see that the trading room is a kind of laboratory in which traders are engaged in a process of search and experimentation. They use instruments to test the markets. At one level it would seem that their search is straightforward: they are searching for value. And it would seem that the means for this search are similarly obvious: use channels of high speed connectivity to gather as much timely information as possible and take advantage of sophisticated mathematical formulae to process that information. At the very elite of the profession, however, these means, in themselves, do not give advantage. You must have them to be a player, but your competitors are likely to have them as well. That is, the more that timely information is available simultaneously to all market actors, the more advantage shifts from economies of information to processes of interpretation. Moreover, what seems straightforward, value, is exactly what is at issue.

The challenge of search and experimentation must thus be re-specified: how do you recognize an opportunity that your competitors have not already identified? At the extreme, therefore, you are searching for something that is not yet named and categorized. The problem confronting our traders, then, is a problem fundamental to innovation in any setting: how do you search – when you don't know what you're looking for but will recognize it when you find it?

The challenge for the arbitrage traders at International Securities is, thus, similar to that facing the website developers at NetKnowHow: How to exploit the knowledge they had (to recognize patterns that it had identified) while also exploring for new opportunities (if you like, re-cognizing properties)?

Pattern recognition at the desks. The trading room is equipped to meet this twin challenge of exploiting knowledge (pattern recognition) while simultaneously exploring for new knowledge (practices of re-cognition). Each desk (e.g., merger arbitrage, index arbitrage, etc.) is organized around a distinctive evaluative principle and its corresponding cognitive frames, metrics, “optics,” and other specialized instrumentation for pattern recognition (Hutchins, 1995). That is, the trading room is the site of diverse,

¹⁰ Arbitrage goes far beyond traditional notions of *property* to exploring for the underlying *properties* of securities in such abstract qualities as the volatility of a security, or its liquidity, its convertibility, its indexability, and so on.

indeed rivalrous, principles of valuation. And it is *the interaction across this heterogeneity that generates innovation.*

The basic organizational unit of the trading room is a “desk,” and it is here that the organization of diversity in the trading room begins by demarcating specialized functions. The term “desk” not only denotes the actual piece of furniture where traders sit, but also the actual team of traders – as in “Tim from the equity loan desk.” Such identification of the animate with the inanimate is due to the fact that a team is never scattered across different desks. In this localization, the different traders in the room are divided into teams according to the financial instrument they use to create equivalencies in arbitrage.

Each desk has developed its own way of looking at the market, based on the principle of equivalence that it uses to calculate value and the financial instrument that enacts its particular style of arbitrage trade. Merger arbitrage traders, for example, keen on finding out the degree of commitment of two merging companies, look for a progressive approximation in the stock prices of two companies. They probe commitment to a merger by plotting the “spread” (difference in price) between acquiring and target companies over time. Convertible bond arbitrageurs, by contrast, do not obsess about whether the spread between two merging companies is widening or narrowing. Instead, they specialize in information about stocks that would typically interest bondholders, such as their liquidity and likelihood of default. At yet another desk, index arbitrageurs, in their attempt to exploit minuscule and rapidly vanishing misalignments between S&P 500 futures and the underlying securities, specialize in technology to trade in high volume and at a high speed. Thus, within each team there is a marked consistency between its arbitrage strategy, its evaluative principle, its visual displays, its mathematical formulae and its trading tools. To be opportunistic, you must be attached to a principle.

Re-cognition across principles. The desk, in our view, is a unit organized around a dominant evaluative principle and its arrayed financial instruments (devices for measuring, testing, probing, cutting). This principle is its coin; if you like, its specie. But the trading room is composed of multiple species. It is an ecology of evaluative principles. Complex trades take advantage of the interaction among these species. To be able to commit to what counts, to be true to your principle of evaluation, each desk must take into account the principles and tools of other desks. Shaping a trade involves disassociating some qualities in order to give salience to the ones to which your desk is attached. To identify the relevant categories along which exposure will be limited, shaping a trade therefore involves active association among desks. Co-location, the proximity of desks, facilitates the connections needed to do the cutting.

To see opportunities, traders use the mathematics and the machines of market instruments. We can think of traders as putting on the financial equivalent of infrared goggles that provide them with the trader’s equivalent of night-vision. The traders’ reliance on such specialized instruments, however, entails a serious risk. In bringing some information into sharp attention, the software and the graphic representations on their screens also obscure. In order to be devices that magnify and focus, they are also blinders. The danger is that distributing calculation across their instruments amounts to

inscribing their sensors with their own beliefs. As we have seen, in order to recognize opportunities, the trader needs special tools that allow him to see what others cannot. But the fact that the tool has been shaped by his theories means that his sharpened perceptions can sometimes be highly magnified misperceptions, perhaps disastrously so. For an academic economist who presents his models as accurate representations of the world, a faulty model might prove an embarrassment at a conference or seminar. For the trader, however, a faulty model can lead to massive losses. There is, however, no option not to model: no tools, no trade. What the layout of the trading room – with its interactions of different kinds of traders and its juxtaposition of different principles of trading – accomplishes is the continual, almost minute-by-minute, reminder that the trader should never confuse representation for reality.

Just as Latour (1987) defined a laboratory as “a place that gathers one or several instruments together,” trading rooms can be understood as places that gather diverse market instruments together. Seen in this light, the move from traditional to modern finance can be considered as an enlargement in the number of instruments in the room, from one to several. The best scientific laboratories maximize cross-fertilization across disciplines and instruments. For example, the Radar Lab at MIT in the 1940s made breakthroughs by bringing together the competing principles of physicists and engineers (Galison 1996). Similarly, the best trading rooms bring together heterogeneous value frameworks for creative recombination. We saw such processes of re-cognition at work in the case of an announced merger between two financial firms. Through close contact with the merger arbitrage desk and the equity loan desk, the traders were able to construct a new arbitrage trade, an “election trade,” that recombined in an innovative way two previously existing strategies, merger arbitrage and equity loan (for details of this interaction, see Beunza and Stark 2004:386-389).

Conclusion: From the Sociology of Business to the Sociology of Worth

An economic sociology that breaks with Parsons’ Pact will be free to abandon the dualisms of value versus values and economy versus embedded social relations. That is, we will no longer be locked into either side of these dichotomies. In this realignment, the object of study for a new economic sociology becomes the sociology of worth. The polysemic character of the term – *worth* – signals that economic sociology is concerned with fundamental problems of value while recognizing that all economies have a moral component. From the static fixtures of value and values it focuses instead on the ongoing processes of valuation whether in assessing the value of firms under conditions of competing metrics of performance or in studying incommensurable assessments in everyday life. “What are you worth?” is a question that can be unambiguous when constrained by context (as, for example, when applying at a bank for a mortgage). But the question in an art gallery “Yes, but what is it worth?” already suggests that value might be different from price. And from the question among two friends, “Honey, do you really think he’s worth it?” we know that several, opposed, evaluative criteria have been brought into play. Social life is a place of perplexity and sometimes wonder precisely because of these problems of incommensurability. Political life, similarly, is

rich not simply in competition over worthiness but in contention over the very criteria to assess it.¹¹

Thus, although our case studies come from the field of business, the sociology of worth should not be limited to that domain. Just as economics does not claim to study “the economy,” preferring instead labels such as the “science of decision-making under conditions of scarcity,” so economic sociology should claim that its object of study is a general problem instead of a specific domain. By focusing on problems of worth in whatever domain (firms, projects, households, the arts, personal relationships), we can avoid the tendency for economic sociology to become defined as the sociology of business.

To analyze the processes of evaluation that are central to the problem of worth, we must further explore a concept of *accounts*. Etymologically rich, the term simultaneously connotes bookkeeping and narration. Both dimensions entail evaluative judgments, and each implies the other: Accountants prepare story lines according to established formulae, and in the accountings of a good storyteller we know what counts. In everyday life, we are all bookkeepers and storytellers. We keep accounts and we give accounts, and most importantly, we can be called to account for our actions. It is always within accounts that we “size up the situation,” for not every form of worth can be made to apply and not every asset is in a form mobilizable for a given situation (Stark 1990, 1996). We evaluate the situation by maneuvering to use scales that measure some types of worth and not others, thereby acting to validate some accounts and discredit others. How am I accountable? What counts? Who counts? Can you be counted on? Will you credit my account? By which accounting?

¹¹ See Girard and Stark (forthcoming) for an account of multiple evaluative frameworks in public deliberations over rebuilding Lower Manhattan after September 11th. Stark and Bruszt (1988, esp. pp. 188-201) develop these issues in the analysis of political reform programs. Similarly, Bach and Stark (2002) explore these concepts in the study of civic associations in Eastern Europe.

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