Notes on market design and economic sociology

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Consider the following two examples: Inspired by Milton Friedman's proposal that demand-side subsidies and consumer choice would enhance school competition, which in turn should improve learning and the efficiency of the system as a whole, policymakers radically reformed school education in Chile in the early 1980s. After several regulatory modifications, education in Chile is still heavily market-based. However, since the massive student revolt of 2011, the area has been hugely controversial. One of the main issues has been that, in the current system, not only are parents trying to choose the best schools for their children, schools, in order to maintain or improve their positions in the national test that ranks them, are actively excluding students with learning difficulties or families that seem to them to be more complicated. In order to find a way out of the impasse, policymakers are currently implementing a particular technical solution, namely centralized clearing-house mechanisms, such as the one implemented in Boston and developed by economists such as Alvin E. Roth. The work of market designers, Roth explains, "is to know the workings and requirements of particular markets well enough to fix them when they're broken or to build markets from scratch when they're missing" (Roth 2007: 1). Policymakers in Chile intend to re-design the existing school education market in order to reduce discrimination.

EcoGrid 2.0 is a large-scale demonstration project run by a conglomerate of Danish universities, the Danish Energy Association, and IT and appliances firms. EcoGrid 2.0 is an ongoing policy experiment set on the Danish island of Bornholm and with the aim of testing a response to what has been identified as a key challenge to making the future energy infrastructure more sustainable. In order to increase the use of renewable sources such as wind, the electricity grid of the future must be more "flexible." This project tests a way of creating flexibility by means of a complicated intervention that integrates activities at three levels. At household level, the project tests ways of making use of domestic appliances to react to the needs of the electricity grid – electric heating systems that are turned on when the wind is blowing, for instance. At a second level, the project tests the introduction of new commercial actors, called aggregators, which are firms that are expected to make a business model based on pooling and selling the *flexibility* of large groups of households. And, finally, the project tests a new trading platform on which the flexibility collected by aggregators will be bought by firms involved in energy distribution or network maintenance.[1]

The cases of school education in Chile and EcoGrid in Denmark are not isolated examples. As the papers in a special issue I am co-editing that is about to appear in *Economy & Society*[2] show, these are cases of a broader transition. It is a movement from a type of policy-making which assumed that markets, or some of the features attributed to markets (i.e., competition, choice, property rights, or price), will solve the most diverse collective problems and, once in place, will work on their own, to situations in which policy-making is understood as continuous *market organization*. Policy-making becomes evaluation, diagnosis, design, and repair of markets. Markets are increasingly seen both as solutions and as technical conundrums. Markets have become socio-technical objects that need expert design and repair in order to work properly and solve the most diverse matters of collective concern. Markets do not simply work; they have to be *put to work*.

In our small research group on Markets and Valuation[3] in Copenhagen Business School's Department of Organization, we have made *the work to put markets to work* our main object of research. We coined the term "markets for collective concerns" to describe markets that are also policy instruments, and we call the new type of expertise oriented towards putting markets to work the "organization of markets for collective concerns and their failures" (Frankel el al. 2017). In this piece, I share some of the discussions

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and questions we have been struggling with in the last few years. I share these discussions because, I believe, they open up questions that are not only relevant to us but also to the readers of this newsletter. The point is that the recent transition towards market design in economics is also an invitation – to us, economic sociologists – to think about economic sociology and some of the assumptions of our particular approach to the economy.

As we know, economic sociology is affected by developments in economics. It is not that economic sociology is economics; it is a different discipline, with its own concepts, methods, and traditions. However, at least in the last few decades, the main movements in economic sociology have responded to developments in economics. Notably, the New Economic Sociology developed in the 1980s in the US, as exemplified in Granovetter's (1985) programmatic statement, was a reaction to the imperial expansion of economics in academia. Sociologists needed to prove that their jurisdiction was not limited to studying those aspects of social life that economists cannot explain (i.e., non-logical action), but that sociology starts with an altogether different approach (embeddedness), which, like rational choice, can be applied to everything, including the study of economic issues. Similarly, the new *new* economic sociology (McFall & Ossandón 2014), the influential European movement initiated with Callon's 1998 *The Laws of The Market*, was also a reaction to economics. This time, however, the reaction was not against the colonization of academia by economics but against the increasing impact of economics in the economy. What Callon and others (Çalışkan and Callon 2010) provide are concepts and methods to analyze how the economy is "economized." The question that bothers me, and that I want to share in this contribution, is whether a new type of economics that conceives of itself in terms of "market design" calls for a new type of economic sociology. I believe that recent developments in economics trigger new challenges that push us, as economic sociologists, to think again. It is not that I have the definitive answer that will initiate a *new* new new economic sociology; what I have is more like a set of impressions that need further thought. In this piece, I try to formulate some of these impressions.

What follows, it should be made clear, is not a finished paper or essay. These are notes, or work-in-progress ideas I have been writing over the last few years. The three notes are attempts to process some of the questions opened up by market design. The first note is titled "The birth of the market,"[4] the second "Are markets matching Callon and Roth?,"[5] and the third "The distinction between market and organization after 'market design.'"[6]

Note 1. The birth of the market

Timothy Mitchell (2011) has made an important suggestion: "the economy" was not born until the mid-twentieth century. With this, he does not deny, as shown by Foucault in his *Security, Territory and Population*, for instance, that economists and a distinct realm of government called political economy existed well before that time but suggests that it was only in the mid-twentieth century that the economy started to be seen as a whole that could be counted and referred to that way. Playing with Michel Callon's terms, Mitchell suggests that with the amazing growth of economic statistics that enabled the millions of transactions carried out in a given country to be counted, summarized, and inscribed, economists for the first time performed a calculable "economy". The economy represented a new type of technical expectation. It was understood as a system that could be quantitatively modeled and steered by economists turned manager-engineers that became experts in balancing things like inflation, unemployment, or exchange rates. In the terms used in *An Inquiry into Modes of Existence (Latour 2013)*, the economy became an act of organizing.

The apogee of the economy, however, did not last very long. It is here that Mitchell's remarkable story in *Carbon Democracy* ends. The conception of the economy as a machine that can be expertly steered by an educated technocracy became contested, especially by the very influential "thought collective" united around the Mont Pèlerin Society (Mirowski & Plehwe, 2009). The most radical version was developed by the group of Austrian economists led by Hayek and continued by the likes of Buchanan and the Public Choice School. The type of criticism initiated by this group is summarized well in the following quotation:

> The confusion that prevails here can be ascribed above all to the false idea that the order which the market brings about can be regarded as an *economy* in the strict sense of the word, and that the outcome must therefore be judged according to criteria that in reality are appropriate only for such an individual economy. But these criteria, which hold for a true economy in which all effort is directed toward a uniform order of objectives, are to an extent completely irrelevant for the complex structure consisting of the many individual economies that we unfortunately designate with the same word "economy." An economy in the strong sense of the word is an organization or an arrangement in which someone consciously uses means in the service of a uniform hierarchy of ends. The spontaneous order brought about by the market is something entirely different. But the fact that this market

order does not in many ways behave like an economy in the proper sense of the word – in particular, the fact that it does not in general ensure that what most people regard as more important ends are always satisfied before less important ones – is one of the major reasons people rebel against it. It can be said, indeed, that all socialism has no other aim than to transform catallaxy (as I am pleased to call market order, to avoid using the expression "economy") into a true economy in which a uniform scale of values determines which needs are satisfied and which are not. (Hayek 2002 [1968], 13–14)

In Hayek's view, the economy would be far too complex to be summed up or modeled with the help of aggregated statistics of trade, demand, or inflation. This limitation would not only be a matter of lacking the right tools or methods to deal with complex systems, but more fundamentally it would be about the nature of the market itself (Cooper 2011). What economists such as Hayek initiated was not simply a critique of the planning expectations set by mid-twentieth century economists. They also started to produce an altogether different type of object of expertise and economic intervention. They initiated a transition from the Economy to the Market. Markets would be complex systems that are not only able to simultaneously process more information than any aggregate statistic could ever collect, they would also be a sort of distributed cognition mechanism able to find new innovative solutions to existing problems (see also Buchanan & Vanberg 1991). The logical and radical consequence of this type of reasoning is that it is not economic planning – the wise economists – but the market itself that should be left to come up with solutions to complex problems.[7]

All this is not only important for the history of economic thought. It is relevant also because, as Mitchell explains for the economy, these notions are not only ideas. As Foucault (2008) realized early on, in the work of Chicago economists and also members of the Mont Pèlerin group, like Gary Becker or Milton Friedman, there was not only a new type of economics. Neoliberalism represented a complete new way of governing, where the market is actively mobilized as a *model* to evaluate and organize areas such as education, immigration, or criminal justice. As more recent work shows (for instance, Mirowski 2013), with neoliberalism markets started to be used as instruments implemented by policymakers to solve complex collective problems. Even the problems created by other markets – as the case of emission trading exemplifies (Lohmann 2009) – could be solved with new markets.

Recent research conducted at the intersection of economic sociology and science and technology studies is starting to pay attention to these types of market-policy hybrids. This work shows intriguing results. As markets that are policy instruments unfold over time, many problems have started to appear. The market simply does not work as expected. However, these problems have not necessarily paved the way for developing non-market policies, but the problems have been framed as "market failures" (Neyland & Simakova 2012, Ureta 2014, Breslau 2013, Ossandón 2012). Seen from this angle, it is not that the market does not work, but that each case presents specific failures that have to be remediated so that the market can work properly. Accordingly, a new industry of experts in repairing and designing markets is starting to blossom. To use the terms of *An Inquiry into Modes of Existence*, we see a transition from markets understood as self-regulated meta-dispatchers to practical arrangements organized by economists. Maybe it is that, similarly to the mid-twentieth-century rise of the economist as the manager of the economy described by Mitchell, today we are witnessing the consolidation of a new type of economist-engineer, but now one that is in charge of steering the market. The paradox is that neoliberalism, which began as a criticism of expert decision-making in relation to the economy, has produced the conditions for the development of this new type of economic expert.

Note 2. Are markets matching Callon and Roth?

The last meeting of our Market and Valuation group was a reading group devoted to an increasingly influential stream within current economics, namely "market design." The discussion left me with the somehow perplexing puzzle I am trying to unravel in this note: Is this type of economics not almost too close to the "markets as calculative collective devices" approach developed by Michel Callon and colleagues (Callon and Muniesa 2005) that has been so influential among us – in the social studies of markets- in recent years?

We discussed two articles written by the winner of the 2012 Sveriges Riksbank Prize in Memory of Alfred Nobel, Alvin Roth (2002, 2007). As Roth explains,[8] his and his colleagues' work has been dedicated to very practical problems. A favorite situation is this: on the one side are medical students looking for the best hospital to do their specialism, on the other are hospitals wanting to hire the best young doctors. Problem: hospital officers were pushing so much that they were selecting students years before they finished their undergraduate studies and even started thinking about their possible specialism. The problem was solved with the introduction of a centralized clearing mechanism equipped with an algorithm – that is, a chain of formalized decisions – which paired young doctors' and hospitals' lists of priorities. The problem started again some years later when couples were introduced into the equation. As Roth (humorosly?) explains:

> In a simple match, without couples or other complications, all of the applicants would have preferred the applicant proposing match, and no applicants who were matched or unmatched at the outcome of one algorithm would change employment status at the outcome of the other. (Roth 2003, 1360)

Roth has not only worked pairing medical students and hospitals, but also children and schools, and even kidney donors and recipients. These are the types of challenges tackled by market designers. Equipped with the tools provided by game theory (where the key name seems to be Roth's co-Nobel winner Lloyd Shapley) and experimental economics, economists are working to find the best "matching" mechanisms to solve these types of dilemmas.

This is, no doubt, a quite particular type of economics. Calling to mind some ideas of an earlier Nobel Prize winner, Herbert Simon (1996), market designers see economics as a "science of the artificial" (see also King 2011) that is closer to engineering, design, or medical knowledge than natural sciences. Here markets are no more a quasi-natural phenomenon that is in search of its mathematical laws, but rather practical situations that need to be carefully designed and Hayek's heroes – prices – are left to play a somewhat secondary role. In fact, market design seems to work in both traditional auctions and also in moneyless exchange, such as the already mentioned kidney donation, school choice (or who knows, tables and guests at a wedding party?). Of course, here we could ask what we have called – in honour of our colleague that keeps asking this again and again – the "Frankel question": Can these situations be called markets at all? Are these matching problems instead not a more general case of operational research or even central planning? As far as I can see, the difference seems to be that, unlike with matching containers and ships or other forms of planning, market designers focus their attention on situations where both sides of the equation are *choosing* maximizing agents (but not necessarily buyers and sellers) that, accordingly, can be modelled with the tools provided by game theory.

In other words, in this increasingly influential branch within economics, markets are not natural but artificial encounters, they are not necessarily about price but about calculation, economists are not external observers but active agents in making these carefully designed encounters possible, and these encounters need, now and then, to be reframed or redesigned. Does this not sound familiar? It does. In fact, Roth has seen the resemblance himself, and, in a recent post on his quite active blog, he says:

> Yesterday's prize to Paul Milgrom for his work in market design (among other things) brings to mind a curious critique (and criticism) of economics in the economic sociology literature, namely that economics is "performative", in the sense that economic theories influence the real economy to become more like economic theory […] As far as I am aware, the term originated in linguistics to distinguish those cases in which saying is also doing. Thus saying "it will rain tomorrow" is not performative, but saying "I apologize" is: when you say it, you have done it, saying it makes it happen. So the basic idea applied to economics is that e.g. creating an option pricing formula might change the way options are priced. Designing a kidney exchange might change the number of patients who get kidney transplants. Or in Paul's case, designing auctions might change the way the FCC sells radio spectrum licenses.[9]

So far so good. There are, though, a couple of misunderstandings. Roth continues:

> The criticism, such as it is, seems to take two forms. The first is that, since economics is performative, it isn't a 'real' science which describes things as they are. The second, often more between the lines, is that this is just part of the way that economics has been sucking the meaning out of life ever since the invention of agriculture and trade […] Of course, that economics is performative is a criticism that economists, especially market designers, might take as a compliment. (It's a little like criticizing body builders for working hard to have big muscles, and not just settling for the ones they could get without cheating by exercising).

Anyone who has spent some time reading Callon and colleagues knows this is not the case. To say that economics is performative is not a criticism of economics not being a real science, but, if anything, a call to assume and not deny the practical and situated character of economic knowledge. And as for "sucking the meaning out of life…" This is more what people say about Callon et al. than what Callon et al. say about the poor economists. But even if we leave these misunderstandings aside, some important questions remain.

Are new *new* economic sociology (McFall & Ossandón 2014) and market design the same? Avoiding the obvious methodological splits that separate a highly formalized and a rather descriptive-reflexive ethnographic approach, there are still important conceptual differences. The ideal situation for Roth's designers seems to be "give me people and their preferences and I will make a technologically equipped market", while for Callon – especially in his work connecting his thoughts on technical democracy, hybrid forums, and markets (Callon 2009) – the ideal situation is where what is traded, who can participate in the exchange, and who and what is equipping the market encounter are collectively and heterogeneously defined. *Civilizing* (Callon) and *engineering* (Roth) markets are therefore two different programs of market design. More practically, for instance, in school choice, for Roth et al. what a good school is or who can choose or what is chosen while matching school places is defined before the market. In the view of Callon et al., such an arrangement would not only match pre-calculating families and schools but would also be a mechanism that make agents able to calculate. In Callon's (2007) view what markets do is 'performation', they transform the involved actors and things.

But despite these differences it seems that engineer economists and engineer sociologists are finally finding a common starting point. Is that not worrying? I think not. This is a much better place to start and try a dialogue that is not so limited by pre-existing disciplinary boundaries (see also Callon 2010). We can agree: markets are not pre-social metaphysical forces that need to be left alone, but they are practical arrangements that can be more or less, better or worse, designed.[10] In those cases where there is already a functioning market or quasi-market mechanisms (for instance: school choice or carbon trade), let us try to make them work the best we can. In other words, social researchers should not only criticize marketization but also spend time, energy, and knowledge on *engineering* and/or *civilizing* these complex arrangements. This is, I think, a pragmatic starting point for market researchers at large.

But is this all good? No, it is not. There is also a serious flaw. These two streams of market research seem to share a somewhat excessive optimism about markets as devices that can solve social and environmental issues. As a product of neoliberal Chile, I would happily pay for not having to make choices in areas like health insurance, pension funds, schools, or long-distance phone carriers. And certainly many people have argued that these and other sectors (have you heard about trains in the UK?) are not necessarily working better years after features such as competition, choice, and providers that can select or exclude their potential users have been introduced. Market design risks becoming the face of the latest round of social and environmental reforms (for instance: emissions trading or the announced Job Match interface in the UK[11]). And the new reformers seem to believe something like: it is not that markets were necessarily a bad social policy but that they were not properly designed. But should we not also be experimenting with other ways of doing things? I am not saying that markets are always bad, but the same brilliant ideas currently oriented at designing better markets could also be put into devising other ways of solving our common problems. In my opinion, market civilizers and engineers will become fully respectable technicians the day they are also able to advise something like: "Thank you for contacting me, but you don't need a market here."

Note 3. "The distinction between market and organization after 'market design'"

The following quotation is taken from a talk given by Alvin Roth, the winner of the 2012 Sveriges Riksbank Prize in Memory of Alfred Nobel and renowned market designer:

> So, first of all think about market design, because market design is an ancient human activity. But because markets are so pervasive we think them a little bit like language. Languages and markets are both human artefacts. But we don't think of language as something we can change, but as something we get. I speak to you in English and I have to speak in the same kind of English that you speak, otherwise it wouldn't work. Often we think of markets in that way too: markets just happen. But, of course, markets are human artefacts and market design is that engineering part of microeconomics, that part that fixes markets when they are broken or makes new ones sometimes.[12]

Roth presents a constructivist position. He emphasizes that markets are both, like language, a social product and, like other artefacts, the outcome of purposely applied technical knowledge. This description would easily fit recent sociological accounts of markets, but it would appear strange in the context of traditional conceptualizations of markets in economics.

A dominant position in the economic sciences of the second half of the twentieth century conceived of markets *in opposition* to organization. While organizations were associated with features such as planning, hierarchy, or centralized decision-making, markets were seen as decentralized, spontaneous, and even inherently non-designable entities. This view was clearly stated by Hayek. In his words:

> There are several terms available for describing each kind of order. The made order which we have already referred to as an exogenous order or an arrangement may again be described as a construction, an artificial order or, especially

where we have to deal with a directed social order, as an *organization*. The grown order, on the other hand, which we have referred to as a self-generating or endogenous order, is in English most conveniently described as a *spontaneous order* […] What in fact we find in all free societies is that, although group of men will join in organizations for the achievement of some particular ends, the coordination of the activities of all these separate organizations, as well as of the separate individuals, is brought by the forces making for a spontaneous order. (Hayek 1991; pp. 294–295)

Certainly, Hayek presents an extreme version. But it would not be at all too controversial if it is claimed that economists – and social researchers from other disciplines too (see for instance Williamson 1973, and Powell 1990) – accepted the overall distinction that separates markets and organizations into two opposed ideal types.

The approach that analyzes markets as an alternative to organizations has started to be challenged in the last few decades, as sociologists and organization theorists began developing their own alternative conceptualizations of markets. Markets are, not unlike James March's classic description of organizations (March 1962), institutionalized fields where actors compete and forge alliances in struggles for power and control (Fligstein 1996). Markets are not spontaneous, but an achievement of organizing, the outcome of the practical work put into making agents calculative and goods calculable (Callon & Muniesa 2005). Markets are like formal organizations, markets require decisions on memberships, rules, monitoring, and sanctions (Ahrne et al 2015).

While economists have conceptualized markets *in opposition to* organization, sociologists and organizational theorists inspect markets *as* organizational entities. The Roth quotation above shows that market design is part of a movement that disrupts this particular balance. The new position is clearly illustrated in the following quotation taken from a book by the economist and market designer John McMillan, who says:

When markets are well designed – but only then – we can rely on Adam Smith's invisible hand to work, harnessing dispersed information, coordinating the economy, and creating gains from trade. (McMillan, 2002, p. 228)

McMillan's quote summarizes, and anticipates, an important modification in recent economics and economic practices more widely. As recent research covering different countries and various policy sectors is starting to show (Doganova and Laurent forthcoming, Ossandón and Ureta forthcoming, Reverdy and Breslau forthcoming, Neyland et al. forthcoming, Pallesen & Jenle 2017), policymakers today do not conceive their alternative scenarios simply in terms of market *versus* planning. They see as their tasks the development, implementation, and repair of markets purposely designed to solve matters of collective concerns (Frankel et al. forthcoming). Similarly, the strategies of an increasingly relevant number of firms are understood as market design. Companies like Uber, Amazon, Google, or Tinder do not simply *participate* in markets, their core business is understood in terms of the development and management of platforms designed to strategically mediate and organize the match between suppliers and consumers (Langley & Leyshon 2016, Kornberger et al. 2017).

Market design introduces a new position in economics in relation to markets. As the historians of economic thought Edward Nik-Khah and Philip Mirowski explain:

Plainly, prior to the 1970s, no one in the history of neoclassical economics claimed an ability for markets to bring about salutary results […] Yet something changed in the 1980s, such that by now it has become commonplace for orthodox economists to assume carte blanche to concoct markets in a smorgasbord of shapes and flavours, for all manner of patrons. (Nik-Khah & Mirowski, forthcoming)

The new position, it could be argued, is closer to sociology and organization studies than to previous economics (Frankel et al. forthcoming). From this perspective, markets are not, like in Hayek's view, a type of spontaneous order which has to be nurtured but once in action must be left to work alone. From the new perspective, markets do not simply work; they have to be *put to work*. Markets need the work of experts (sometimes referred to as "designers" (Roth 2007), but also as "engineers" (Roth 2002), "architects" (Wilson 1999), or even "plumbers" (Duflo 2017)), whose task, like a control mechanism in system engineering (Jenle 2015), is to react to deviations and steer markets in the right direction. Markets are an object of organization.

The concept of market after market design

Market designers, like sociologists and organization scholars, approach markets as organization. But do market designers' concepts of markets simply match conceptualizations of markets in sociology and organization studies? The following extract is taken from the same talk by Roth quoted before.

Let me tell you about why economists are interested in school choice and is that a natural kind of thing. Because you might not think of school choice and how we allocate places in public schools as a market place, because we don't use money to decide who gets what school places. But it turns out that markets are a wider class of thing that you might ordinarily consider […] Just as there are lots of different natural languages -there is English, and French, and Portuguese- there are also different kinds of markets. And, in not all of them money plays the central role it plays in commodity markets. […] When you buy shares in the stock market you don't care who you're dealing with. You don't care whether they took good care of those shares while they have them. They don't care whether you will take care of those shares. The only thing you have to do is to find an agreeable price and the job of the stock exchange is to find that price. The job of the stock exchange is price discovery, to find a price in which supply equals demand. But lots of markets don't work that way […] Matching markets are markets where you cannot choose what you want, even if you can afford it, you also have to be chosen. You cannot just decide on coming to Stanford, you have to be admitted, you cannot decide to work for Google, you have to be hired […] So, matching markets have a lot of other institutions than just institutions to find price.

The quotation is from a presentation Roth delivered to a group of school teachers to explain a form of market design that affects them directly. In cities like Boston and New York, market designers have collaborated with policymakers in implementing market design to maximize matching between applicants' choices and schools.[13] Roth uses the occasion also to make explicit the concept of market at play in this type of intervention. School choice, he explains, represents a case of "matching markets," markets where money does not necessarily play an essential part. The effort Roth puts into explaining the situation makes clear his awareness that it is not obvious that the allocation of school places should be considered as a market. The fact that he explicitly attempts to clarify this issue also shows that he realizes that the term used to label the situation is relevant. As sociologists of professions would put it (Fourcade 2009), the way in which a policy situation is labelled can have consequences for the delimitation of claims of technical and professional jurisdiction.

The definition of school allocation as a market can be also seen as a provocation with important consequences for social research more broadly. The following quotation is taken from a paper by a group of distinguished scholars published recently in *Organization Studies*:

A market is a social structure for the exchange of owners' rights, in which offers are evaluated and priced, and in which individuals or organizations compete with one another via offers (Aspers 2011). The social structure comprises two roles of exchange -sellers and buyers- both of whom have owners' rights […] (Ahrne et al. 2015; p. 9).

You will face a dilemma if you happen to be a social scientist of the same disciplinary area of Ahrne et al. and you are also interested in an empirical situation like the school system in Boston. Should you approach this situation like a market? If you follow Roth, the answer is yes: school choice represents a case of a particular type of market. If you take the Ahrne et al. definition, the answer is no. A case like this, with no clear ownership claims and not even price or money, does not fit their definition. Who will you follow? The economist or the sociologists? Perhaps this situation is not a clash between two technical definitions (the definition provided by the sociologists versus that of the economists) but a bifurcation within sociology and organization studies about how to approach the concept of market. Can we develop an approach to markets in which sociologists do not take it as their task to provide their own concepts of markets, but instead include the technical definitions of markets by experts in the field as part of the object of study?

Endnotes

1 For a sociological analysis of this case see Jenle and Pallesen (2017) and Pallesen and Jacobsen (2018).

2 The issue includes six contributions. Four of them are case studies: Ossandón and Ureta (forthcoming) on markets for health insurance and public transport in Chile; Reverdy and Breslau (forthcoming) on the market for wholesale electricity in France; Doganova and Laurent (forthcoming) on markets for emissions, sustainable biofuel and clean technologies in Europe; and Neyland, Ehrenstein and Milyaeva (forthcoming) on markets for electronic waste and child care in the UK. The fifth paper, by Nik-Khah and Mirowski, traces the transformation in economics, from a professional consensus that assumed that markets were the opposite of planning to the current context in which economists claim to be experts in the design of markets. In the sixth paper, the editors (Frankel, Ossandón and Pallesen forthcoming) attempt to conceptualize and explore the conceptual challenge opened up by the new type of market expertise identified in the issue.

3 https://www.cbs.dk/en/research/departments-and-centres/department-of-organization/centres-and-groups/markets-and-valuation-cluster

4 This text was originally prepared for the workshop "The modes of

economies," which was conducted in the context of the series of seminars organized by Bruno Latour to debate the propositions of his *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. The workshop was hosted at Copenhagen Business School on February 24 and 26, 2013.

5 This note appeared originally as a blog post in April 2013 on www.charisma-network.net and on https://estudiosdelaeconomia.com.

6 This note is a section of a paper I am currently working on. I presented a previous version of the full paper (which is titled "The Concept of Market") at the *5th Interdisciplinary Market Studies Workshop* held at Copenhagen Business School in June 2018.

7 Of course, people like Hayek or Buchanan represent an extreme here. But different strands of what is today known as neoliberal thought seem to share the centrality of the market. The next quotation by Arnold Harberger, an influential economist at the University of Chicago in the second half of the twentieth century, summarizes a less romantic and slightly more technocratic conception of the market: "The forces of the market are just that: They are forces; they are like the wind and the tides; they are things that if you want to try to ignore them, you ignore them at your peril, and if you understand that they are there, working their way, if you find a way of ordering your life that is compatible with these forces, indeed which harnesses these forces to the benefit of your society, that's the way to go." (Harberger, A. 2002).

8 See also Roth's very clear Nobel Prize lecture https://www.nobelprize.org/prizes/economic-sciences/2012/roth/lecture/

9 http://marketdesigner.blogspot.com/2013/02/performativity-as-critique-of-economics.html

10 For a much less optimistic view see Mirowski and Nik-Khah (2007), who polemically suggest that actor network theory and market design share a common ancestry in operational research. In an article written in a less confrontational tone, Mirowski explains that the movement toward engineering markets is a much broader turn within economic thought of the last couple of decades (Mirowski 2007).

11 https://www.theguardian.com/politics/2013/mar/31/liberal-conservative-coalition-conservatives

12 The two quotations by Roth included in this section are my transcriptions of a lecture Roth gave that is available in the following link: https://www.youtube.com/watch?v=bNeK8mOWudA#t=170

13 School allocation, one of the most recognized examples of market design (Cantillon 2017), is a policy instrument in which policymakers implement algorithms to match the priorities of families' searching for schools and schools' available places.

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