

Technology, politics and the market: an interview with Michel Callon

Interview conducted by Andrew Barry and Don Slater

Andrew Barry: One way to start would be to think about the relation between your work on markets and your earlier work on the anthropology of science and technology. There is a movement: a generalization from some of the earlier work you've done on science and technology. How do you see the relation to the earlier work?

Michel Callon: I think that there are three main relations between this work on markets and the work on science and technology. The first is: the way we are now studying social sciences is only an extension of the work done on the natural sciences. It's simply the continuation of the anthropology of science, but an anthropology of science which is concerned with economics in the broadest sense of the term, including, for example, marketing and accountancy. The second feature is the role of technologies in the structuring of economic markets. It is impossible to think of markets and their dynamics without taking into account the materiality of markets and the role of technological devices. The anthropology of technology might be very helpful if we want to understand better how markets are stabilized and organized. And the third aspect is the work we have done on the links between scientific research, academic research and the function of economic markets. I have been very interested in explaining the exchanges between academic research and economic markets. And I've been struck by the fact that economists have been playing, although not alone, a very important role in designing institutions for the organization of the exchanges between scientific research and economic markets. For example, if you take the very usual linear model, with the flow of knowledge going from the scientific laboratory to the end consumer via the industry or enterprise, you can recognize the role of economic theory in justifying this model. The work done by Arrow and Nelson at the end of the 1950s, and the theory of science as a public good, has contributed strongly to perform this idea of an autonomous scientific sphere

that was disconnected from economic markets. Moreover, if you were to trace the genealogy from the Manhattan Project and Vannevar Bush to Arrow and Nelson, this would provide a good explanation of the institutional configuration of science and economic activities in the 1960s, 1970s and 1980s. So, in trying to understand how science and economy were co-ordinated, I was struck by the role of what I call framing by economic theories. So for these three reasons – because economics as such is a science and demands to be studied by anthropology of science; because of the role of material and technical devices in the functioning of markets; and because of the obvious performing role of economic theories in explaining how science and economic markets interrelate – it was impossible to avoid considering markets as constructed, and necessary to emphasize the importance of technologies, including economics, in this very process of construction.

Don Slater: That relation between science and markets is part of what is very exciting about your work and produces connections and ways of thinking about the market that would not otherwise have been possible. But the strong focus on seeing markets in relation to science can also give a very technocratic reading of some of the social processes around the market. For example, a lot of the argument about externalities and overflowing could point to a highly politicized sphere of conflict over market boundaries, whereas in a lot of your discussion it actually moves into a much more technocratic area in which these look like disputes that can be solved by developing a new metrics or by something like a scientific procedure. It sometimes pushes the discussion into a sense of the possibility of a rather calmly negotiated settlement between competing forces. It can point away from politics.

Michel Callon: Yes, I think there are these two possible options. If you consider, for example, what economists call externalities and what I call overflows, you could say that a way of integrating and internalizing these externalities is simply to take interest groups into consideration and to extend the market. But in my mind that's not exactly the right way to understand what overflowing means because the simple fact of framing economic activities creates, outside the market, emerging identities that are political *per se*. So you cannot reduce the consequences of overflowing to a simple calculation of interest. I would say that what is created outside the boundaries of the market is not something which is reducible to economic calculations, because markets create new collective identities that are not very well defined. It's impossible to take them into account without creating or setting up a space, that is a political space, in which these identities are discussed and confronted with each other. So the consequence of overflowing is a constant (re)creation of new political spaces. You could imagine a debate between technocratic forces that insist upon the necessity or the possibility of reducing these externalities to a simple account of interest. But there are other ways of organizing the political process in order to discuss these new identities and the place of the market activities in these new

configurations. It is a question of a trial of strength between technocratic approaches and more political forces.

Andrew Barry: Do you have in mind a normative model of the political space within which overflows become identifiable?

Michel Callon: Yes, I think one of the duties of social sciences is precisely to contribute to the explication or articulation of this political space. And what we have tried to do in our recent book *Agir dans un monde incertain: Essai sur la démocratie technique* is precisely to describe this space where the emerging identities created by techno-sciences' overflows could be discussed and could be mobilized in order to compose, to constitute, the collective. There's a strange meshing of techno-sciences and economic markets which produces what Marilyn Strathern calls the proliferation of new identities and which constantly creates new uncertainties about the constitution of the collective. So this constant creation and proliferation of the social (or what we propose to call emerging concerned groups) requires new procedures, new institutions, political institutions, new forms of debates and so on.

Don Slater: To what extent does your normative version of democracy include the market, and to what extent is it defined in opposition to the market? For many years we've been caught between a political economy that cannot put market processes within the democratic sphere, and a neo-liberalism that simply subsumed democracy to the market.

Michel Callon: I think it's the same question. The same question arises in relation to the techno-sciences and in relation to markets. What is new is precisely that you cannot disconnect the two questions. The two questions are linked together: if you want to solve the question of the democratic treatment of science and technology, you have also to solve the question of the relations between economic markets and democracy because of this interaction between scientific and technological developments, on one hand, and economic developments, in the other. You can't separate technology and science from economic markets. So the two institutions – I use this term – the two institutions are entangled. I think there's now really an opportunity because people are more aware of the possible or potential consequences of techno-sciences, and more social groups are ready to mobilize themselves in order to monitor science and technology. In the same way they have become aware of the fact that markets have to be organized in order to make possible certain technological or scientific developments. Because technological and scientific overflows are fuelled by economic logics, the idea of markets as political issues is becoming more and more thinkable. Yes, I think that the connections between techno-sciences and economic markets make both the orientation of technological developments and the organization of the markets more central and disputable.

Andrew Barry: Does this imply a normative model of citizenship? At the moment the ideal of active citizenship is often promoted. Your suggestion seems to imply a normative model of citizenship as well, but it may be different from that model.

Michel Callon: I think it is different because the usual model of citizenship is based on individual achievements and individual wills. But if you consider overflows, you don't know who is concerned. Is it an individual? Is it a group of individuals? Is it a hybrid collective, mixing humans and non-humans? Nobody is able to answer this question. So it's a principle of uncertainty about what the collective is made of, or will be made of. This notion of citizenship is usually linked to the notion of an individual or society made of individual citizens who have to be integrated, and who have to be more active in order constantly to recreate and rebuild the social link. So our model is a very different one. Is it normative? Yes, obviously. But not in a technocratic way. Because in the old configuration you have a separation between science and political power, and you have a divide between lay people and specialists, on the one hand, and ordinary individual citizens and professional representatives, on the other. This configuration produces a series of problems, one of them being the passivity of the ordinary individual citizens who are created by the configuration and who are, at the same time, forced to delegate for long periods of time their will to their elected representatives and the production of knowledge to professional experts or researchers. So, in this old configuration, in order to fill the gap constantly created by the double delegation, the only solution is to make more active and more interactive, individual citizens. What I am saying is that thanks to growing overflows this old configuration is in the process of being dismantled. Innovative actors are experimenting with new configurations. Moreover, in this process of recomposition, you have new types of political regulation appearing. The role of the social sciences is to try to make this evolution and the forms of experimentation that are involved in it more visible. So I think it is impossible to escape the question of normativity. Should we maintain the same institutional frame as before when science, markets and political powers were very strongly disconnected from each other or not?

Don Slater: I was wondering if you'd like to relate some of what you were saying to Beck's work, in particular the new configuration you're talking about and the normative concerns that arise from some sense of reflexivity. One could replace the word 'externality' with the word 'risk', and say that they are overflowing with risk. So the potential reflexivity of these institutions arises from a sense of danger.

Michel Callon: Not exactly a sense of danger and risk. I resist this idea of labelling the society as a society of risk, for example, because it's a very one-dimensional way of defining the stakes and the issues. Seeing risks everywhere and arguing that risk is a central concern for society tends to make very different

situations homogeneous. When you impose this notion of risk as an analytical category and as a pragmatic category, you narrow the space of political debate. You don't allow the actors the possibility of defining themselves what is at stake. I'm very struck by the fact that in numerous socio-technical controversies the notion of risk is simply absent. If you take, for example, the case of GMO, you have a lot of different discourses about the existence or the non-existence of risks linked to GMO. But if you look at the content of the debates of the social movements you are obliged to recognize that the majority of actors don't care at all about risks. They are debating the organization of global markets, the organization of agricultural development and jobs. So to say that we are in a risk society is simply misleading. We preferred to start with the broader and less socially coded notion of social and technical uncertainties and with the idea of a collective investigation aiming at reducing them.

Andrew Barry: The *Risk Society* is also an interesting case of the influence of sociology in framing markets. Look at the growth in the industry of risk management.

Michel Callon: Exactly, exactly. In our book on *Agir dans un monde incertain* we never use the notion of risk. The notion of risk is a counterproductive one. It is a concept that can be useful for political decision makers and insurance companies, but not for sociologists because we have to give room to actors and let them choose the repertoire of the debates. It's a way of imposing a certain form to political debate. The idea, for example, of distributing risks between social groups or different actors is a technocratic dream.

Andrew Barry: But it does raise a question, which is the question of historical change. Beck likes to see the emergence of the risk society as an historical transformation. And what you were implying is that there has been movement towards greater overflows.

Don Slater: Could I just put it even more broadly? At a number of points you put forward a thesis that various institutions becoming more reflexive, and that is a historical development.

Michel Callon: Yes, the two points are linked and difficult to respond to. You could have several entry points. The first is, I think it's an empirical observation. Don't you agree with the fact that you can observe a multiplication of socio-technical controversies? I think it's difficult to contest this point. And if you admit this point, you have to try to explain why such controversies are more and more frequent and more difficult to manage from the point of view of existing institutions. For example, the innovation of the precautionary principle could be viewed as a response to the growing number of socio-technical debates. So you have several indicators showing that something is emerging that, although not completely new, is more central than it was before. And if you want to

explain that, you have to listen to actors and not to impose your own interpretation or your own analytical grid. If you listen to the actors involved in such controversies, I think that you can hear two messages. The first one is: 'don't leave experts and specialists the monopoly in the production of knowledge and exclude social actors, lay, concerned groups and so on. We are able to participate in this production of knowledge.' And the second point is about the contestation of the divide between professional representatives, political representatives and ordinary citizens. What is at stake in those fora is not the distribution of risk, it is precisely the contestation of these two great divides between the lay people and specialists and between ordinary citizens and professional or political actors. I think that one of the possible explanations of these messages is the existence of a new form of intricate relation between the techno-sciences and economic markets. What is becoming central in these debates is a concern both to transform the institutional conditions and direction of scientific research and to transform the organization of economic markets. I'm not saying that this is always present but it's very often discussed and debated in these public controversies.

Andrew Barry: It does seem that the question of the organization of the market has become much more central to technological controversies in a way in which it perhaps wasn't in the recent past.

Michel Callon: I think it has become more important in European countries. I'm not sure that in the States it's exactly the same. But the situation might change. If you take the case of European countries, you can say that what is debated is precisely the organization of markets. And, for me, it's a very new situation because, before the fall of the Berlin Wall, you had market economies, on the one hand, and bureaucratically planned economies, on the other hand. But now I think that we are freed of these dichotomies and of this opposition. Social actors are now aware of the fact that the notion of the market is a very large, ambiguous, polyvalent notion and that it's possible to shape the market, and to change its roots and its institutions. The idea of the economy becoming political is again a growing idea and conviction. So if you take the debates about intellectual property, about GMOs, about health questions, food safety and so on, in all these debates the main question now is how to organize markets. I don't believe that all the groups have the capacity to participate in these debates, but it is now the case that economic markets are considered as political issues.

Don Slater: I do have problems with this. In one sense it's very obvious that markets have always been political questions. We could talk about a whole nineteenth-century history of working-class opposition to markets. We could talk about huge debates in the early twentieth century on the welfare state, often in relation to working-class movements. Such debates were very much about contesting the natural shape of the market. You could actually say the opposite: in

one sense the most de-politicized period in the history of the market has been the neo-liberalism of the last twenty years. Even social democratic parties, such as ours in Britain, now certainly accept the market.

Michel Callon: OK, I agree with your analysis. But the market is not this unified category as it was in the nineteenth century, or even in the first half of the twentieth century. I think that the paradox is the following: everybody agrees that the market is a very effective institution, but now it seems to me that more and more people consider that there are various ways of organizing concrete and specific markets. So it's a very different situation because you now have an abundance of ways of seeing economic markets. The idea of the market as a unified category and institution is progressively disappearing.

Don Slater: What bothers me is that it depends to some extent on who you are listening to. If we're saying that more social scientists are recognizing that markets are multiform and that they're not peculiar to capitalism, or they're not particular to modernity, that's true. There is evidently an increasing reflexivity in the sense that there's a language to talk about the diversity of market forms and the political options we've had. That's still different from saying that they weren't previously multiform. If one's following some of the economic actors, they might have been able to say a lot of these things to us generations ago. It's simply our discourses that have changed.

Andrew Barry: In comparison to a relatively recent past though, there is a new kind of politicization of the market today. The point which we haven't really discussed enough is the emergence of neo-liberalism and its different inflections in Britain and France. We need to consider how neo-liberalism involved both de-regulation and de-politicization, but has also brought re-regulation as well. A lot of the recognition that the market has different political forms is about the sense that actually one is engaged in a process of re-regulation.

Michel Callon: It's a very important point. It's not the same thing to say that markets are multiform, and to argue that we need to have a debate on how to organize markets. In Britain and France, for different reasons, we have arrived at this political question. The organization of markets depends on the nature of technologies, the nature of professional activities that are involved in the markets and so on. I think that the other way of making the point is to link this debate to the question of the commodification of life. It's not a new question but it's a very central issue and the way of answering this question is I think profoundly different now from the way we used to phrase this question and to imagine answers to this question. The metaphors of infrastructure and super-structure and the metaphor of embeddedness are not helpful if we want to find answers to these questions. What I tried to do in *The Laws of the Markets* was to replace these old metaphors by a new way of describing transactions or relations that involves a double process of entanglement and dis-entanglement.

This notion of entanglement and dis-entanglement leads to very different accounts of markets than the notions of infrastructures or embeddedness.

Don Slater: This has caused great anguish among some economic sociologists. Embeddedness has been so linked to a certain kind of humanism.

Michel Callon: Society is imagined as a context or as a frame. Society is out there and you imagine how to put this strange beast, the market, in this frame. It's another version of the infrastructure and superstructure metaphor. You have realities that are called markets or economic activities or society and what you try to imagine is the respective positions of these realities. Developing an argument made in the anthropology of science and technology, you must not imagine society as a context for different types of activities including economic activities; you have to imagine the process through which collective relations are constructed, including relations that can be called economic relations. So it's a reversal of the approach. The notion of embeddedness has been very useful, but now we have to get rid of it. The metaphors of entanglement and dis-entanglement are more productive because they allow you to describe the omnipresence of commercial transactions and other types of relations and, in the same movement, the process of boundary shifting.

Don Slater: That's one of the things I'm very excited about. They are incredibly powerful metaphors. One of the things I was trying to point to before though is that the embeddedness metaphor also had a very strong moral agenda behind it, which was about resisting reductionism. It was arguing that, whatever an economist says, the way we go about our economic lives is actually deeply meaningful, it's informed by a fuller humanity than, for example, rational choice. I think some of the resistance to your work has been that it has been interpreted as giving away that ground again, of allowing something close to the kind of economic vision to come back into the social and cultural field. And I think a lot of the reaction to *The Laws of the Markets* has been this kind of worry.

Michel Callon: We have to get rid of this notion that economic goods are abstract, disembodied and needed culture to be added to them. As economic goods are the outcome of a double of process of dis-entanglement and entanglement, they are richer products. It's exactly the opposite process of the process described by conventional economic sociology. I think it's amazing. I think one needs description of financial markets, for example, and it's easy to do in my opinion. What you would see is that, in order to produce alienation between two agents in one place, you have to produce more and more attachments, relations and proximities between usually very distant agents. For example, if you want to create a frame for the transaction between a trader and a consumer in a financial market, the trader, the seller and the designer of the financial product have to be very close to all the traders, banks, on all continents and so on. So this is

a double movement of producing more and more attachments in order to frame this isolated place in which are temporarily stabilized these alienated relations between strangers. I think one needs to describe this double movement, the dual logics of markets. The more you produce attachment, the more you are able to produce and to stabilize entanglement. The example given by Miller could be interpreted exactly as following this line of analysis. He shows very clearly the upstream work that makes unavoidable and successful the final commercial exchange. On one hand, entanglements are investigated, explored and made more explicit and visible, leading progressively to the attachments of goods and humans; and, on the other hand, through the same process, supply and demand are adjusted, co-produced and this ground is carefully prepared for the commercial transaction. That is the reason why it could be said, in a paradoxical way, that, in order to make disentanglement possible, economic agents heavily invest in the production of entanglements! To disentangle you have first to entangle better.

Andrew Barry: This leads to a question about vocabulary. In your earlier work you spoke about similar kinds of processes using the vocabulary of what was called actor-network theory at the time. You didn't use the concepts of entanglement and dis-entanglement. Is there anything at stake in the shift in vocabulary away from the way in which you understood the relational character of scientific objects in your earlier work?

Michel Callon: Yes, it's a very good question and also a very difficult one! I have the feeling that it's using the notion of attachment, and of entanglement, that allows us to describe more precisely the complicated relations in, for example, a marketplace. Put in a nutshell: what science and technologies do is to maintain or to make possible connections between frames and between different places. So you are freed from this image of a multilevel society. You don't need several layers, different layers. You don't need infrastructure and superstructure and embeddedness. You only need places that are connected and the possibility for actors and information to circulate from one place to another one. I think it's a point made by Bruno Latour, framing and connecting are the two faces of the same coin. Technologies and sciences can be used to frame interactions, but also to mobilize other places and to connect them to the place where interactions are done. So the possibilities of connecting and framing are both linked to science and technologies. If one can speak of markets as networks, or even of market structures, it is because science and technology are constantly mobilized to connect, displace and transport. I think that the processes of entanglement and attachment are enhanced, multiplied or made easier by technologies or by sciences: because it becomes possible to create strong relationships between places, between agents that are very far from each other. I see science and technology as some of the media through which the process of disentanglement and entanglement is not only made possible, but enhanced and made easier. In actor-network theory, the emphasis was put on these links, but

not so much on the process of entanglement and dis-entanglement. So the concepts of entanglement and dis-entanglement describe the dynamics involved in reconfiguring entities and networks of entities. I think it gives a more precise and more dynamic version. But the very process of attachment between goods and humans still remains to be explained. Our article on the economy of qualities is precisely intended to supply these analytical tools.

Andrew Barry: It gives a sense of the process as a practical process. A lot of the criticism of the actor-network model was that it was a textual model. It was unclear how the model of the text applied to material objects, to processes and to practice.

Michel Callon: It was one of the criticisms. The other one was the actor-centred analysis. In order to describe the dynamics of networks you need actors that have objectives, goals and so on. If you use the idea that entanglement and dis-entanglement are processes, the model of agency is very different. Your question is very difficult, but my answer will be that, in order to describe diversity of interactions and relations, we have to diversify the notions used to describe these relations. The network metaphor is too strongly related to technology and science. And maybe the notion of attachment and detachment, entanglement and dis-entanglement is more relevant to the description of markets. It is a difficult question. Because, if you consider that in a market there are several modalities of co-ordination, or what Bruno Latour called enunciation, you probably are led to consider that economic markets are a specific combination of these different types of co-ordination. In a market you need technologies, sciences, and you probably need forms of political representation and so on. So the problem is to describe the diversity of relations, modalities of co-ordination or enunciation, the diversity of all these relations that are mobilized in order to create a basis where commercial transactions are possible. The problem is to explain how isolated frames are shaped, allowing for the very specific relations in which goods or services are alienated and commercial transactions are set up. And, if you want to explain that, you have to enrich the description of the connections or relations or processes in which agents are plunged. In order to create islands of commercial transactions, you have to imagine a very rich web of various relations and I think the notions of entanglement and dis-entanglement can describe, in a satisfying way, the double movement.

Don Slater: One of the questions about that metaphor is that it might capture the kind of diversity and multiplication of relationships and possible connections and in a sense put them on the same level and get a sense of the local. But is there any level at which you would recognize not a multiplication but a homogenization of relationships. What happens to old categories like capital and class? Political economists point out that certain structures and forms like property which obviously do transcend any particular market (even if they

depend on local circumstances and have diverse forms in particular places) are certainly established at a much different level. It might be an old-fashioned question, but how do we move, or should we move, from markets to capitalism? Is there any version of a macro-economy that is compatible with this kind of metaphor? We're leaving behind the kind of depth models of infrastructure and superstructure. We're leaving behind the assumptions that are involved in a common embeddedness model. Does that actually leave us without any structural model?

Michel Callon: Yes. I would say that we no longer have macro-structures. The idea of the existence of macro-structures is very far from the description we are trying to give. As I said, it doesn't mean that there are only local localities, because what is provided by this description is precisely a double logic of local framing *and* connection between localities. In these terms, some localities are able to control other localities. So what has to be explained is precisely the progressive construction of connections, and of localities that are able to control other localities. What could replace the vision of society marked by class conflict is an account of the competition between different ways of connecting, controlling and framing localities. I agree that it's very difficult to imagine these new types of conflicts. But if you want to interpret the new conflicts about the organization of the market for GMOs, for example, you have to imagine a conflict between different ways of structuring markets and considering markets precisely as the capacity to attach and shape some entities and disconnect others. In the case of the GMO market these entities include transgenic forms of organization of agriculture, developments and relations between north and south and so on and the nature of property rights. All these questions are debated and the opposition is not between classes defined by the position of people in the political process. The opposition is between emerging groups who are defining in different ways how to organize these markets, knowing that the organization of this market depends on questions dealing with the types of products which are designed and sold as well as the types of property rights and so on. So I would not say that you have structures and that you have positions within these structures, and from this position you can deduce or explain some oppositions and some conflicts. Rather, you have oppositions and conflicts about how to structure economic markets given the fact that this structuration depends on configurations which mix property rights, certain forms of technological developments as well as other things. It doesn't mean that there is no structuring process, but that the structuring process as such is at stake. It's the heterogeneity of markets that makes them shapable and it is around this process that conflicts can happen.

Andrew Barry: Just to press Don's point. It is a question of structuring processes rather than structure. But then could one think and see forms of conflict that are about quite general aspects of these different structuring processes. For example, concerning the whole institution of property rights or, indeed, of capitalism.

Michel Callon: The question of property rights is a very good one. Because, on the one hand, you cannot imagine that the market could be organized without defining some types of property rights. But, on the other hand, you can say that the diversity of types, distribution, definition of property rights is very high. And you can imagine very different markets because there is a great deal of diversity in the form of property rights. Discussions and debates about rights depend on the type of markets, the type of technologies, the type of political debates and so on. If you take the case of cultural goods, for example, you could imagine very different configurations or regulations based on different definitions of property rights. So the question of property rights might be considered as open. Even if you maintain the notion of capitalism, you could have several forms of capitalism depending on the form of the compromise, for example, around property rights. But I think that your argument is about the equivalence between a certain conception of property rights and the existence of capitalism. I don't know if in your mind, as soon as we consider the question of property rights, we are in the sphere of capitalism. Would you be ready to consider that property rights might be compatible with such different ways of organizing markets that even the simple notion of capitalism is not helpful in describing these possibilities?

Don Slater: The idea that I was considering in my paper was that, although you can have different kinds of property rights, there is one fundamental aspect which is a certain kind of alienation within which you can have different kinds of contracts. There's a certain structure of alienation, of delimiting a certain kind of transaction that I would associate with capitalism, even if within that it can take quite a number of different forms. And that form of transaction does seem capable of being regularized across an incredible number of locations. I get worried about the word structure because we're actually talking about a number of different levels here. I absolutely agree that one of the fundamental problems with conventional economics has been that it couldn't recognize that structures were themselves part of the competitive framework; that they're a part of the strategic action itself. But there are still higher levels within which those kinds of contests take place. And it's in that way that you can have an over-arching structure people can contest various forms within that or find forms which suit particular operations better than others. Practically speaking, in negotiating this kind of economic environment actors assume certain kinds of regularities that they know can be contested at a different kind of political level than the market.

Michel Callon: Yes, I understand your argument and I think it's a strong argument. As soon as you have some form of property rights allowing this framing of interaction, you could say that capitalism exists and that this takes the form of an over-arching structure. But I'm not completely convinced. If you take the case of informal economies, for example, I'm struck by the fact that those economies are often very formal. The rules are very well defined and

explicit and, in certain cases, they involve collaborations between actors and academic economists. I know some local informal economies in the south of France, which have inspired colleagues of mine who are working in anthropological economics and are involved in defining alternative ways of constructing markets. So you have very interesting laboratories and experiments that show the possibility of creating new institutions. I resist the idea of naming these economies as capitalist. So my feeling is that you can imagine, if you consider economic markets are performed by technologies, economics and so on, that, in some cases, economic activities could lead to institutions and experiments in which you have property rights, but arranged in such a way that this notion of capitalism is not very useful for understanding what is happening.

Andrew Barry: An answer one could give to the question of capitalism which I thought you are implying would be: isn't capitalism itself and the framing of the economy as capitalism, itself a product, to put it very crudely, of the whole history of critical political economy and anti-capitalist political movements and the various technical devices they have deployed to make this thing called capitalism apparent? In other words, the analysis needs to be extended to the analysis of critical political economy.

Michel Callon: I think you're completely right. I think it's a good answer to the question. And it opens precisely the possibility of considering multiple ways of organizing economic activities in which property rights are present but property rights as such have no meaning. They have to be linked to other ways of framing activities and so on. The configurations are multiple and I'm not sure that the notion of capitalism is very useful to describe this diversity. I agree with Andrew that probably capitalism is linked to this way of describing economic activities as an infrastructure or are encoded in this debate as an opposition between anti-capitalism and capitalism. It's probably also a notion we have to get rid of. But this doesn't mean that we are buying into liberalism and neo-liberal ideology because what we are discovering is precisely the diversity of markets. Some markets are very powerful devices for creating asymmetries, and other forms of markets are more open to debates, to reorganization and so on.

Don Slater: This is close to the argument of J. K. Gibson Graham, *The End of Capitalism (As We Knew It)*? It's the same kind of point in arguing that the main political task is a deconstruction of a notion of capitalism that's been built up: something that is more solid in one's ideology than it is in reality.

Michel Callon: Yes, I think it's a very important point. Capitalism is an invention of anti-capitalists.

Don Slater: We produce this thing which we cannot overcome and which structures our own opposition.

Michel Callon: Yes, I think that the point that capitalism is maintained alive thanks to the anti-capitalist movement and analysis is very important. It is the reason why I disagreed with the description given by Luc Boltanski, because his argument is that capitalism – its logics of accumulation and so on – is amoral. There is no morality in capitalism. But I think it's a mistake to describe capitalism as homogeneous and, being homogeneous, it is not concerned with questions which are termed usually as political, ethical and so on. If you accept the diversity of what is usually called capitalism, you are led to recognize that in some markets you have constant discussions or negotiations about ethical or political questions. The manner in which answers are found differs from one market to another one, from one country to another country and so on. So describing capitalism, even for the purposes of criticism, as something which is homogeneous is a way of maintaining this idea of the impossibility of social actors to act on the organization of economic activities because it implies that there is simply a choice between completely destroying the organization of economic activities or accepting them as a whole.

Don Slater: Well, it's the classic structure of an older politics: creating or constituting your opponent as such a totality.

Michel Callon: A totality unable to think of its own transformation and that just reacts to external criticisms. It's like an automaton and the only way for it to survive is to incorporate those people outside the thing in order to transform itself. I think it's a way of being completely unable to act on the organization of economic activity.

Andrew Barry: The hostility of political economists to the kind of work you're proposing might relate also to the particularly virulent form of capitalism in Britain and to the way in which neo-liberal economics has been so dominant over the past twenty years. Given that it doesn't make sense, in your view, to be anti-capitalist, do you see there may be some key points of division that should be contested?

Michel Callon: What is strange in the case of Britain is that, in the case of railways or sectors like that, there is political debate on how to organize this market, learning the lessons that can be drawn from de-regulation. I think this experience is a laboratory in itself because you can see the effects of political choices and you can imagine that markets might be organized in certain ways which are less or more satisfying for different social groups. My question is, is it becoming a political issue in Britain or not, given the lessons which can be drawn?

Don Slater: One pessimistic answer, from your point of view, is that it has certainly become more of a political issue in the sense of asking, what is a basic service? I'm not so convinced that it has become an issue of political economy, about how to organize markets. It is still so much an issue of state versus market.

Michel Callon: One of the interesting issues now is whether we should abandon this idea of a division or separation between the public sector and the private sector, and between a market *per se* and government intervention. The idea that public powers are exterior to markets is becoming more and more difficult to defend. And the idea of the constitutive role of public powers in the organization of economic activities is making progress. There is a growing recognition that all markets are a strange combination of rules defined by public powers and by private agents.

Don Slater: I think this is where Andrew's point about the context of extreme neo-liberalism is important because the kind of development that he described in the UK has been experienced more as the penetration of markets into the public sector rather than as a sense that markets could be organized differently, or have different regulatory structures. So, if you talk to people in Britain about where are the points at which markets and regulation mix into new forms, they're likely to talk about internal markets in the National Health Service, for example, which have caused major problems.

Andrew Barry: I think there's a distinction between the analytical point which is try to move away from thinking about the opposition between state and market and the way in which that statement might be read in the British context which would be very closely associated with the idea of the 'Third Way'. Maybe it is different in the French context.

Michel Callon: Yes, I think that the idea of market organization as an open field of reflection and experimentation is making progress. But the role of social scientists and the position of economists are very important to this, in setting the terms of the debate. And I would like to say that the sociology and anthropology of economic markets should be more active in presenting this new range of political choices because economists, by profession, tend to think in terms of a tug of war between the private sector and public sector. What sociology and anthropology could bring to the debate is precisely a recognition of the experimental character of markets and market organization and the need to debate the consequences of experimentation. It is a collective learning process.

Andrew Barry: The key to what you seem to be saying is that you want to introduce democracy into the equation, which is not generally there because the debate actually tends to be about the hybridization of state and market, without any sense of the democratization of that hybridity.

Michel Callon: And the debate is monopolized by experts like economists. They create, as in other scientific fields, an ignorant incompetent public, who are not endowed with the possibility of entering in the debate. The economists play a very important role because they perform the idea of pure markets, governed by natural laws in the political sphere. It's bizarre because I think that

now more and more people are ready to contest the monopoly of experts in the physical and life sciences. But, in the social sciences, the role of experts remains very, very strong. Economists do not act as scientists or researchers, but as experts who give advice to political decision makers. Probably these experts are much more influential than experts in physics or biology. For example, Prime Minister Jospin in France created a council of experts three years ago the mission of which is to advise him on economic questions. And in this committee you have not one sociologist. You have only economists, pure economists! It's incredible because if you take committees dealing with health issues or agricultural issues a lot of specialisms are represented. Only in the case of economic policy do you have a monopoly of this certain type of expert.

Don Slater: A good example is what I've been seeing in issues around new media and the Internet and the kind of emerging policy debates around the digital divide. It's almost entirely dominated by economists as far as I can see, in the most technocratic way. There's been the most extraordinarily rapid shift from the visionary version of the Internet as a new field of human communication, to this thing that is simply a technocratic means that is to be economically delivered for economic ends.

Michel Callon: Yes, but economists have great difficulties in describing what is happening. For example, I read some papers written by economists or by economic sociologists about the interpretation of Linux's emergence and success. Mainstream economists find it very difficult to understand what is happening. It's fascinating. The new tools for managing these strange markets can't be devised by economists alone.

Don Slater: But what still amazes me is that despite the fact that they can't explain what's going on, they still put forward the same policies and have the total prestige to impose them.

Michel Callon: I agree completely with you, but I think it means that we have to develop two strategies. The first is to describe precisely the influence of economists in different institutions like the OECD, International Monetary Fund and so on. We need some empirical studies about how these institutions do function and the role of economics and of mainstream economists in those institutions. And the second strategy is to try to make more visible the analysis done by economic sociologists and to take part in the devising of tools useful both for us and for economic agents. If we believe the analysis we are producing, we are obliged to recognize that the way to influence or structure institutions is to devise tools. If we accept that there is nothing which could happen without being framed, the role of the sociology and anthropology of economics is precisely to design tools and to provide actors with such tools. I think it implies an involvement in the performative activities of social sciences. The weakness of

sociology and anthropology when they come to analyse economic activities is precisely their reluctance to do the same jobs as economics. Economists are able to tell how it is possible to calculate profits and so on, but sociologists do not provide these kinds of tools.

Don Slater: I totally agree. One of the most frustrating things about economic sociology – and I think it's one of the reasons why we haven't performed this kind of constructive role – is that it's constantly engaged in rehearsing endless critiques of conventional economics and often in a vain attempt, a delusion, that they might convince economists. It's not an argument that you win. It's an argument that you need to go around and do something else.

Michel Callon: Yes, you're completely right. There are two positions we have to abandon. The first is the idea of critique of hard economists, which is intended to show them that there are wrong. And the second position is to describe markets just to say that they are more complicated than economists or political decision makers believe. So we have to abandon those two positions and to contribute to the understanding of the dis-entanglement and entanglement process. If we succeed in that we will be able to devise our own tools, like the economists, but tools that will endow economics agents with the capacity to experiment with different forms of markets organization. Let us stop criticizing the economists. We recognize the right of economists to contribute to performing markets, but at the same time we claim our own right to do the same but from a different perspective.

I don't understand why sociologists have to comfort and to support the ideas that economists and mainstream economists are in a dominant position. I think it's a self-fulfilling prophecy so we just have to stop saying that. Economists have succeeded in creating alliances with technocrats, but, if we accept the idea of the emergence of hybrid fora in which various actors are participating, we can imagine economic sociologists co-operating with actors who are interested in thinking about ways of organizing markets in order to counter the role of the mainstream economists. What is very important is to abandon the critical position, and to stop denouncing economists and capitalists and so on. Instead, we need to engage with debates on specific markets. I think that it's a first step, and progressively it will be possible to accumulate experiences on how to organize markets, how to organize debates on the organization of markets and so on. This movement is very important.

Andrew Barry: This relates to the difference between your position and Bourdieu's.

Michel Callon: Yes, because I think that Bourdieu's position leads him to reinforce this stylized opposition between existing macro-structures, established powers, and the forces that are trying to destabilize these macro-structures without taking into consideration concrete questions about, for example, the

organization of such markets. So it's related to what we said previously about capitalism and anti-capitalism as two forces which perform capitalism as a reality, and which paralyse actors. The position adopted by Bourdieu is precisely of this form. The only way to give some margin of manoeuvre to actors is to consider that at certain times and places some actors are able to transform, first locally, the rules of the game, to analyse the situation in which they are, and to develop some new strategies to deal with that situation. And the role of the social scientist is to identify these actors, to try to appreciate, to evaluate their capacities to transform the rules of the game, to reconfigure institutions and to produce results that can be transported to other places. The way to transform so-called macro-structures is to start with micro or local restructuring activities, and to make connections possible between these localities and other localities. If we accept the idea of the non-existence of macro-structures in which micro-structures are embedded, and if we accept the idea of localities framed and connected to each other, I think that sociologists should try to identify the actors who are able to transform the frames in which they are located, and to transform other places because they are located in a very strategic place. It's another way of describing how social scientists can link themselves to social actors. There is no longer a contradiction between choosing actors or situations as objects of research, and co-operating with actors who are considered as subjects by themselves. And it's a non-zero sum game. On the one hand, actors are interested in this form of co-operation because they can enhance their capacity to describe and analyse their own experience and, on the other hand, social scientists are also interested in co-operating because they can mobilize actors as colleagues who are as competent as academics or scientists. Actors can ask the same questions as social scientists: how to frame and re-frame situations, how to transform other places and to imagine new ways of organizing institutions and so on. Indeed, the only way to produce robust knowledge is precisely to set up this form of co-operation with very competent and relevant actors.

Andrew Barry: And the key question is which actors do you co-operate with and with which do you not co-operate.

Michel Callon: It's a very important question and there is no straightforward answer. It's a question of trial and error. I think that it's inherent in this position that you are obliged to ask normative questions. If you consider that the organization of markets is a growing concern for numerous groups, the next step is to ask: where will I go in order to participate in an experiment about the organization of markets? You could choose, depending on your habitus! You could choose very different places where different actors are in a leading position and so on. As social sciences are performative activities, you will influence the course of those experiments. For example, you will probably help some actors who are trying to elaborate rules, or you will allow some groups to participate in the discussion of the market. So you will, as a social scientist, help to perform some

sorts of markets, and it depends completely on the choices you make. These choices depend on what you consider as important, valuable and so on. The choice can't be deduced from methodological or scientific considerations. I think everybody could agree about the importance of debates about the organization of markets. Having said that, you can choose very different situations where the role of actors is different. So I think it's a very traditional question but, even if you accept the arbitrary character of the choice of the actor with which you will co-operate, you are in a very different position from that of Bourdieu. Bourdieu has not only to reinforce the macro-structures that are supposed to exist, but he has also to explain why the truth is on one side and not the other. He is also confronted with the moral and political choice to help one side and not the other one. But I think it's easier to explain why, in the case of a very limited conflict or debate, you will choose to co-operate with certain actors and with others, because the problems are more circumscribed and actors from different sides could agree about the reality of the difficulties they are encountering. For example, in some cases, like GMO markets, even industrialists are aware of the fact that they are in a deadlock and that something must be discussed. So it's not a black and white situation, of the kind that prevails in the macro-structure debate.

Don Slater: This comes back to the beginning of our discussion: your underlying normative commitment is perhaps more to some sense of democracy than to particular participants. You might be closer to Habermas than to Bourdieu. A lot of what you are pointing towards is establishing norms of democratic procedures and how structures can emerge which will allow new collective political agents to emerge. The issue is not so much the taking of sides as the conditions for those kinds of democratic procedures.

Michel Callon: I'm convinced of the importance of procedures but I would say that the political or the public space that is implied by Habermas is different from the political space that I imagine. And the main reason is that in the case of Habermas, as in the case of Rawls, or even Arendt, the actors or the agents who are involved in the public space are reduced to speakers, to free-speaking actors. If you consider emerging groups and social identities that are created or performed by overflows, you will have a very different account of social identities and groups than those who are put on the stage by John Rawls or Habermas. In their case, you have dis-incarnated agents, whereas in the case of emergent socially concerned groups you have a very different identities. Consider, for example, patients suffering from muscular dystrophies. They are created by the way markets function. As you know, they consider themselves as orphan groups because, as they are so few in numbers, they are not considered to be profitable. And, in addition, they are generally not interesting for academics or scientists. It is easy to understand that economic markets create a lot of such orphan groups. They are simply unrecognized and they do not exist at all. And you have other concerned groups who are hurt by overflows, as in the case of pollution

and so on. So you have these two figures, or types, of concerned groups: orphan groups and hurt groups. And if I take the case of orphan groups like patients suffering from muscular dystrophy, the only way for them to participate in a public debate, and to have the possibility of reorganizing markets, is to come *with* their disabled bodies, and transform themselves from being monsters who were hidden in private life into human beings who have to be considered as human beings. This transformation is central. You cannot put their bodies and the specific characteristics of the actors and so on into brackets. There is nothing to be hidden. You have to display what must be veiled in John Rawls' philosophy. And you have to put your body on the stage, and not to leave your bodies and your genes at home. So the notion of the public sphere is very different in this case from what it is in the case of the more traditional philosophy.

Don Slater: It's also a different level of commitment. The involvement of social movements commits more of themselves to political action – it's more than the force of a reasoned argument. It's about a kind of bodily 'being there', taking, accepting other consequences, much greater consequences, than simply losing an argument.

Michel Callon: Exactly. The case of AIDS patients studied by Stephen Epstein is very illuminating because it's not a Habermasian arena. They are engaged, involved in organizing experimentation, clinical trials, they discuss what it means to construct a representative sample of patients and so on. And it's a question of life or death and not a question of argument.

Don Slater: Your position as a researcher in relation to them bears some relation to what could be a Habermasian position: even though their forms of engagement are different, what you are looking for are precisely those means by which they can be brought into the democratic process, by which processes can correspond to something closer to a situation where everyone has the power of speech but in a wider metaphorical sense: the force of democratic presence.

Andrew Barry: The relation to Habermas is something like the relation to economics: Habermas frames politics as being about the public sphere that is distinct from the realm of the state that is distinct from the market. Even if one retains the notion of public sphere, it's a public sphere whose overflows themselves need to be dealt with.

Michel Callon: Exactly. It's a very important point. And remember Hannah Arendt's point about the necessity for citizens to leave economic worries at home in order to be free to speak in the public sphere. What I recommend is exactly the opposite. Your body, your economic activities, your worries about subsistence and so on – because all these matters are disputable they must be debated in the public sphere.

Andrew Barry: Your recent work with patients' organizations raises the question of social movements and, in particular, the relation of your work to the earlier work of Alain Touraine. How do you see that relation?

Michel Callon: I have to say I have been very strongly influenced by Touraine. I regularly attended his seminar and I was also interested in his view of the new role of sociologists. And I remember a seminar where he said that now we know what society is we need to find out what the sociologist should be doing. We have to endorse Lenin's old question: 'What is to be done?' Obviously there is a relation with the answer given by Touraine, but I am more struck by the differences. After all, Touraine conceived of sociology as a science, a positive science. And the interventions of the sociologists are empowered by mastering knowledge. They have to teach social actors and to lead them progressively to be more aware of the social issues at stake. So sociologists help to effect something like a progressive transformation in which social actors become more reflexive. Sociologists give to social movements their implicit choices. It is a very classical modern position. What is striking is the assumption that actors are able to be competent, but when they are challenged to account for the course of social action they are unable to make it explicit. What is different in the position I try to develop is the relation to actors and the position and definition, qualification and epistemological status of sociology. The point is that sociological knowledge is a co-production between actors and social scientists. We can't avoid the co-production of knowledge and the consequence of this joint production is the generation of new identities. So it's similar to Touraine's position in that you have a process of transformation but the position of the social scientist is not epistemologically higher. The social scientist and the actors are at the same level. They are still different, of course. They do not have the same interests, the same references and so on.

Andrew Barry: But it requires teaching the actors that that is the relation that you are hoping for. In many situations actors impute power or expertise (or lack of it) to the social scientist.

Michel Callon: You are perfectly right. We are pre-formed by the expectations of actors. It is sometimes difficult to convince them of the interest of this new deal. But I think that it is something that is possible to identify who is ready to accept the position and sometimes who is even reluctant to consider social scientists as experts who are able to say the truth. My vision of this question is that we have to try, as a first step, to co-operate with social actors who are willing to co-operate with us, and who are able to understand what is at stake. In the second phase, using these first studies as examples, we could extend this new conception of the relation between social scientists and social actors. It's a question of the progressive implementation of a programme.

Andrew Barry: So this is the answer to the question what is to be done.

Michel Callon: It's obviously very different from the position of Bourdieu with his notion of the collective intellectual, or even from Michel Foucault with his notion of the specific intellectual which is very close to the notion of expert. If you take the case of Bourdieu, it's a way of keeping social science outside the social sphere and of reinforcing the positive visions of the social sciences.

Andrew Barry: The question that arises for me is: how do you deal with actors who are not willing to accept this model, and in particular with governments who may have other visions?

Michel Callon: We have to learn from experience; it's a question of trial and error. We will get a clearer vision of what is possible. I would be reluctant to use this programme to co-operate with governments for the purposes of public administration. I think it's not an objective for this vision of the social sciences. What I would like to do these next few years is to try to develop this form of joint research with those who are not well prepared for this kind of reflexive questioning and who are not sufficiently self-organized. The real challenge would be to choose people who are loosely networked and in a loosely oppositional position, and who are in a situation that is unpredictable, out of which new social identities and subjectivities might emerge.

Note

This interview took place in Paris and Lancaster in February and March 2001.

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