



European Journal of Social Theory
000(00) 1–22

© The Author(s) 2011

Reprints and permission:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1368431011423601

est.sagepub.com



Symmetrical twins: On the relationship between Actor-Network theory and the sociology of critical capacities

Michael Guggenheim

University of Zürich, Switzerland

Jörg Potthast

Siegen University, Germany

Abstract

This article explores the elective affinities between Actor-Network Theory (ANT) and the sociology of critical capacities. It argues that these two research programmes can be understood as symmetrical twins. We show the extent to which the exchange between Bruno Latour and Luc Boltanski has influenced their respective theoretical developments. Three strong encounters between the twin research programmes may be distinguished. The first encounter concerns explanations for social change. The second encounter focuses on the status of objects and their relationship to locations. The third encounter is about the concept of critique. Drawing on their long-term mutual readings, we gain insight into how pleas for symmetrical analysis raised in response to Bourdieu's theory of fields have evolved within both ANT and the sociology of critical capacity. We conclude by relating the development of the respective research programmes to the issue of disciplinary boundaries.

Keywords

Actor-Network theory, Boltanski, Latour, new pragmatic sociology, sociology of critical capacities

Corresponding author:

Michael Guggenheim, Ethnologisches Seminar der Universität Zürich, Andreasstr. 15, CH-8050 Zürich, Switzerland

Email: gug@ethno.uzh.ch

The lost halves: on the self-fashioning of a twin couple

The relationship between the Actor-Network Theory of Bruno Latour and the sociology of critical capacities by Luc Boltanski is that of symmetrical twins. Analysing this relationship, we show that these two research programmes were influenced by each other at important junctures in their respective theoretical developments. We start with their common birth in reaction to the then dominant theory of Pierre Bourdieu. From there, we describe three encounters that were crucial for changes in the theoretical direction of the respective research programmes.

The two programmes appear as symmetrical twins in two guises. First, their critique of Bourdieu makes a plea for symmetry in how sociology analyses its objects; second, beyond this point of departure, they happen to respond to each other in symmetrical ways. Observing these encounters over an extended period of time, both programmes appear as mirrors of each other. We take this insight as an opportunity to explore these research programmes anew. In our account, Actor-Network Theory (ANT) does not have an exclusive monopoly on symmetry. By implication, it will not be presented as a counter-programme to mainstream sociology derived from the 'strong programme' for the sociology of science (Bloor, 1976) and suffering from exaggerated claims of validity. Rather, we examine ANT as an attempt to reformulate the heritage of Bourdieu in conversation with Boltanski. In turn, this understanding shifts the significance of the sociology of critical capacities from a counter-programme to the critical sociology of Bourdieu to a new pragmatic sociology in its own right.

We are not the first to contrast these two programmes: Bruno Latour wrote a fake dialogue of two doctoral students of Latour and Boltanski, respectively (Latour, 2009). The students discuss their projects as both knowledgeable insiders and at the same time as overwhelmed by the demands of their respective advisors. In their dialogue, the complexity of the two programmes results in exaggerated claims and confusions. They excel in self-criticism of their own and precise analysis of the other research programme.

In our article, we follow the personalized form of Latour's dialogue, taking 'Bruno Latour' and 'Luc Boltanski' as short-hand for heterogeneous and fragmented research networks. We are aware that these are simplifications, since both authors have co-authored many of their key works and are part of a rich research environment. However, for the sake of argument, simplification is inevitable.

Leaving the proof of the pudding to doctoral students involved in empirical fieldwork, Latour's dialogue is an inquiry into the analytic strength of both programmes: for students, what counts is what (empirically) works. At the same time, the dialogue remains a flirt, full of allusions that are obscure to an Anglo-Saxon audience. In short, the dialogue is hermetic and does not help to lay bare the common references and the theoretical and methodological divergences. This article will correct these shortcomings. In contrast to other discussions of these programmes that treat each of them as a single case,¹ we focus on how the two programmes shape each other.

Though we refer to the institutional contexts of the programmes at some points, we limit our discussion to an interpretation of the theoretical contexts. Owing to the dearth of research comparing the critical content of these programmes, we feel this work is an important first step to situate them in a French and international context.² The structure

of the article is as follows: We begin with the origins of these two programmes: the analysis of conflict situations. It is through an analysis of conflict that the authors derive the need for a symmetrical approach, demarcating their work from that of Bourdieu. This common starting point leads to parallels; both programmes repeatedly intersect and influence each other. We analyse three encounters prompted by one programme running into conceptual difficulties and resulting in borrowing inspiration from the other. While we recognize that the two programmes do not provide the *only* inspiration for each other, we deem it necessary to elucidate the central ways in which these programmes encountered each other in order to best understand their development.³

In the third, fourth and fifth sections we focus on three encounters: The first encounter concerns explanations for social change: Latour conceives of social change as permanent production of new networks. Boltanski historicizes and provincializes this view by scaling down the network to one regime among others. The second encounter focuses on the status of objects and their relationship to locations. Latour starts with localized networks and delocalizes them as his theory develops. Boltanski mirrors this expansion with his delocalized regimes and subsumes the networks in his version of a theory of differentiation. The third encounter concerns the concept of critique. Latour conceives of critique as constructionist description – a critical mode that, as it turns out, is too easily reproduced by his opponents. This is the very fate Boltanski ascribes to artistic critique in capitalism. Boltanski searches for a way out of this impasse by looking for new forms of critique; Latour does so by proclaiming matters of concern as arenas of public negotiation. We conclude by situating the development of the two authors with regard to their discipline. Latour fashions himself as lost son, whose task it is to lead sociology back to its roots. Boltanski in contrast, presents himself as a legitimate heir, who is destined to continue a tradition.

Prequel: re-thinking Bourdieu

The birth of the two symmetry programmes coincides with distancing themselves from the progenitor, Pierre Bourdieu. Bourdieu builds his theory on fields that are defined by the struggle for different kinds of capital (Bourdieu, 1986). In the scientific field, for example, scientists fight with publications for scientific capital, defined as reputation (Bourdieu, 1975). The effects of these fields are traceable in the bodies of actors as habitus that in turn shapes their actions (Bourdieu, 1979). Compared to structuralism, in Bourdieu's sociology, actors become more important. But as the reproduction of social structures is tied to the logic of different kinds of fields, Bourdieu, like Marxist and rational choice theorists, assumes that the reasons for actions are not accessible to actors. He posits instead the 'illusio' as a force that systematically makes actors misinterpret their own actions.

Both Latour and Boltanski criticize the centrality of the field and the marginalization of actors. Both conceive of Bourdieu's theory as deterministic. To highlight these structural determinants, they both focus on controversies. Actors thus gain importance in different ways: In a nutshell, Latour starts his critique by micro-sociological observations of laboratory practice in the field of science and distances himself from externalist explanations of scientific controversies. Boltanski starts from above by reformulating a

general theory of society. He posits that an empirical analysis of conflicts and forms of critique is impossible if only the sociologist is capable of critique.

The starting point for *Latour*⁴ is the analysis of scientific controversies, his first empirical object. In his early works, he portrays scientists as fighting for reputation by making decisions about fields of research, publications and budgets (Latour and Woolgar, 1979). Latour narrows the perspective compared to Bourdieu: rather than focusing the scientific field understood as the sum of manoeuvres to accumulate capital, he concentrates, together with others such as Karin Knorr-Cetina (1981) and Michael Lynch (1985), on the laboratory as place of scientific work (Latour and Woolgar, 1979: 203 ff.). By doing so, he subverts the traditional division of labour between sociology and philosophy of science. According to this division that still holds for Robert Merton (1973) and notably Pierre Bourdieu (1975), sociologists limited themselves to analysing the structural features of the scientific field and its values, but stopped at the door of the lab. By moving into the lab, Latour situates the fight for reputation in the scientific practices themselves. Scientific controversies are the place where reputation is distributed, Latour observes, and they are fought with scientific objects – laboratories, instruments, citations and articles. To understand how science works, sociologists should refrain from supposing a pre-existing field, but trust their ethnographic sensibilities and ‘follow the actors’.⁵ Thereby Latour moves the forces of fields from behind the actors back into the scientific objects, laboratories and texts. The strategies of scientists are therefore not determined by the scientists’ position in the field; rather, their position is a result of their scientific actions. Latour follows Bourdieu insofar as he conceptualizes actors as strategically advancing their position in a field, but he moves the means into the scientific routines and strips them of their structural properties.⁶

Latour soon generalizes this critique of the ‘behind’ that is thoroughly ethnomethodological in spirit, to a more general proposition: sociology has settled on a ‘politics of explanation’ based on the untenable assumption that causes and effects could be isolated and allocated to different levels (Latour, 1988b). For Latour, this separation is based on a fundamental error. Practising sociology is not reconstructing structures of society that operate behind the actors. Rather, doing sociology means to describe the world as the sum total of all controversies (Latour, 2000: 109–10; 2005, 236 ff.).

Boltanski is not a sociologist of science. His focus on conflicts, though similarly directed against Bourdieu, is not situated in one place such as the laboratory. His symmetry programme is general in outlook. While Latour looks at scientific controversies as strategic research sites, Boltanski attempts a theory that analyses conflicts in general. Boltanski criticizes Bourdieu’s determinism of structure that only explains the reproduction of social order through dispositions governed by fields. To put it simply, Boltanski replaces actors’ dispositions with critical competences. Actors, in his view, permanently prove their competences in everyday conflicts. These competences are not reducible to dispositions because actors can employ different forms of justifications over time *and* because in one situation a plurality of forms of justifications may be at their disposal.

By taking as its starting point everyday conflicts that show the openness of situations, the sociology of critical capacities shares common ground with ethnomethodology. However, this focus on situations is combined with a strong interest in the macrostructural element of the orders of worth. Unlike Bourdieu, Boltanski posits that conflicts are

not determined or predefined by the existence of these orders. The sociological explanation consists in the task to show the tensions between these different orders of worth. Since conflicts are inherently open for different forms of justification, it is the actors themselves who base their explanations on these orders to either give weight to their arguments or to rebut other arguments.

Latour has absorbed the thesis of a plurality of orders of justification and declared it a central source of inspiration for *We Have Never Been Modern* (Latour, 1993: 44 f.). However, from his point of view, it is not radical enough (Latour, 2005: 232). For Latour, the orders of worth still represent orders 'behind' the actors that are not visible in the field and are mere fictions of sociology to claim explanatory powers. The plurality of orders of worth is no help in stripping an externalist vocabulary from sociology. For Latour, Boltanski's mistake is not the empirical observation of different forms of critique, but elevating these forms to externalities and giving them explanatory powers.

Rethinking controversies: the birth of symmetry

Latour and Boltanski agree that sociologists thus far have analysed conflicts asymmetrically by giving the sociologist the role of arbiter. They both postulate symmetry as a requirement for sociology to treat objects of controversies evenly.

For Latour, symmetry refers to how sociology deals with the central dichotomies of Western modernity such as truth/falsehood and nature/culture. He starts his project of symmetry with an insight derived from the analysis of scientific controversies. The earlier sociology of Merton and the philosophy of science explained truth by using internalist arguments and falsehood with externalist arguments. But an observer of an ongoing controversy cannot decide who will win and thus cannot decide on how to explain the arguments put forward in the controversy. David Bloor concluded from this insight that both truth and falsehood have to be explained in a symmetrical way, i.e. sociologically (Bloor, 1976).

Latour extends the principle of generalized symmetry in two ways: first, he maintains, based on his own ethnographic observations, that the production of facts in laboratories cannot be attributed to the interactions between scientists alone. Instead, scientific objects and instruments have to be included in the explanation of fact making. Second, interpreting Shapin and Shaffer's (1985) discussion of the dispute between Boyle and Hobbes, he claims that the division of labour between the natural and the human sciences is a modern invention that is not warranted by the nature of problems. Thus Bloor's project – and indeed sociology's – to explain the natural and the social world including truth and falsehood with recourse to the forces of society is misguided (Latour, 1993). Latour proposes instead to reconstruct both the natural and the social world with the help of networks understood as natural and with social actors linked together. This is the second, generalized symmetry principle (Latour, 1993: 94 ff.). It allows him to reformulate the difference between true and false scientific claims as a result of the length and stability of networks.

Since the division between nature and society is revealed as a fiction of modernity, the 'great divide' between enlightened, rational and scientific modernity and dark pre-modern societies vanishes.⁷ The great divide is revealed as a projection of scientific

self-mystification. According to Latour, the difference between modern and pre-modern societies is found in the difference between the strength of networks and is therefore a gradual one. Modern science is indeed superior to pre-modern or non-European forms of science, but not because it is more rational or because it is based on different scientific norms. Rather, the power of modern science stems from the power of the laboratory as an instrument to create stronger networks. For Latour, symmetry is therefore total. Because all differences are reduced to relative strengths of networks, Latour denies any strong form of differentiation within society, either on a horizontal or on a vertical level, geographical or historical. Bourdieu's fields or any other kinds of horizontal differentiation are mere artefacts of sociology to produce an orderly account of society (Latour, 1993: 103–19).

For Boltanski, symmetry refers to how different forms of critique relate to each other. He absorbs laboratory studies (Boltanski, 1990a: 125), but he is not interested in the foundations of science. Instead he seeks to rework the internal differentiation of modern societies. He does not aim at a critique of the one big asymmetry but tries a multi-faceted understanding of the many symmetries inside societies. The difference between Latour and Boltanski is particularly visible in the set-up of their main works, *We Have Never Been Modern* (Latour, 1993) and *On Justification* (Boltanski and Thévenot, 2006). The latter is organized as a cross-tabulation with six times six fields. On each axis we find six orders of worth, derived from management literature: inspiration, domestic, fame, civic, market and industrial.⁸ All those orders of worth can be combined with each other. Justifications can call for long-term industrial efficiency and against short-term market success (and vice versa); they can criticize seniority and kinship favours in the name of diploma and certified expertise (and vice versa).

The sociology of critical capacities does not stop with the tableau of orders of worth and the resulting compromises. The impulse for symmetry generates a number of questions: What do the orders of worth have in common? Why is their number limited? How is it possible to tell legitimate forms of justification from illegitimate ones? The answer to these questions is given in the subtitle of *On Justification*. Only regimes that create 'economies of worth' are legitimate (Boltanski and Thévenot, 2006). An economy of worth is achieved when a conflict closes with the advantage of the winner being also a contribution to the common good. For example, in a conflict on working time models in firms, employees may base their arguments on the domestic order of worth. To invoke a common good, they can argue that only restrictions on working hours allow family structures to remain intact and thus to contribute to social reproduction. Additionally, actors do not settle conflicts only in discursive ways. They are equally based on 'tests of worth'. The notion of a test can best be illustrated by looking at sports. To determine a winner of a 100-metre sprint, an ever-expanding set of tests is required, from watches and their certification to wind measurements to doping tests.

Boltanski introduces symmetry with his plurality of orders of worth, as they describe any conflict with the same set of concepts. Since actors refer to different notions of the common good that cannot be reduced to each other during conflicts, Boltanski concludes that sociology has to integrate this empirical symmetry into its own apparatus. The sociological description of conflicts then has to take these different forms seriously and describe the pragmatics of conflicts as testing the legitimate order of worth. For

Boltanski, whose background is the critical sociology of Bourdieu, this is a radical reorientation of his research programme. Doing critique is no longer the capacity of the sociologist, but a capacity of the actors themselves (Boltanski, 1990b).

First encounter: re-thinking (social) change

Postulating symmetry leads to different concepts of (social) change. By generalizing symmetry, Latour promotes a flat concept of society. This also implies rejection of theories of social change, since ANT rejects all purely social concepts. Change for Latour is a succession of conflicts modelled after the example of scientific controversies. Actors mobilize networks to win controversies and in the course of the controversies the networks themselves are changed or mediated, as Latour calls it, including all actors enrolled in a network (Latour, 1999: 178 ff.). There is no social change, but only change in general, since networks are not only social, but also contain objects. Science and technology constantly produce new objects and these new objects always come with a change in values, ideas and social formations. Change can therefore not be measured in rare revolutions. Rather, change is permanent and everywhere, operating on a small scale. Each controversy and each network contribute to change. Change cannot be categorized, as, for example, in orders of worth or the like, because networks always and permanently change.

Initially *Boltanski* confines himself to analysing short sequences of action. By dealing with orders of justification in a symmetrical way, he is immune to allegations of being teleological. Conflicts have no predefined path. Theories of society that reduce social change to marketization, de-industrialization of re-feudalization seem simplistic from a theory that conceives of market, industry and domestic order of worth as symmetrical. Conversely Boltanski's research programme of 'critical societies' simply does not seem suited for diachronic studies (Boltanski, 1990b: 130).

With the publication of *The New Spirit of Capitalism*, social change comes into the purview of Boltanski's interests (Boltanski and Chiapello, 2005). Social change became important for Boltanski, since the criticism of *On Justification* mainly focused on two issues (Dodier, 2005: 7–8). First, the concentration on critique and justification was deemed too high a price if questions of power disappeared. Second, *On Justification* juxtaposed two temporalities: on the one hand, the *longue durée* of the orders of worth; and, on the other, the short sequence of critical situations (Dodier, 2005: 7–8, cf. Boltanski, 2002: 285). Both critiques indicate that the research programme was far from being able to deal with social change.

Compared to Latour's position to treat change as permanent and innovation as total (cf. Callon, 1999: 68), Boltanski adheres to a more restrictive concept of social change. For him, social change happens when a new form of justification on top of the existing six appears. A seventh order of worth would be proved when a new 'economy of worth' could be linked to an individual privilege and a contribution to the common good.

For the revision in *The New Spirit of Capitalism*, the notion of test (*épreuve*)⁹ derives again from Latour: 'There are only trials of strength, of weakness. Or more simply, there are only trials. This is my point of departure: a verb, "to try"' (Latour, 1988a: 158).¹⁰ For Boltanski, this links orders of worth to critical situations and conceptualizes social

change. Test becomes both the key to an expansion of the theory and a test case, which we discuss in turn.

In *The New Spirit of Capitalism*, the Boltanski and Chiapello conceive of social change as the interplay between a regime of categorization and a regime of displacement (Boltanski and Chiapello, 2005: 320 ff.). The regime of categorization is incorporated in the model of orders of worth. In the regime of categorization, pragmatic constraints push conflicts towards justification and generalization. These forces themselves act as amplifiers by imposing an ‘imperative to justify’ on to actors (Boltanski and Thévenot, 2006: 23 ff.). By repeating such justifications they consolidate into regimes. The elaboration of ‘tests of worth’ indicates new regimes, and objects are used to explicate and differentiate between them. Part of this regime of categorization is a theory of institutionalization, for which the authors combine ethnomethodology and political philosophy. The authors cite as the inspiration for this move the article ‘Unscrewing the Big Leviathan’ by Callon and Latour (Boltanski and Thévenot, 2006: 20; Callon and Latour, 1981).¹¹

While *On Justification* systematically explores the regime of categorization, *The New Spirit of Capitalism* introduces the regime of displacement, the emergence of which the authors claim to be related to the success of former. To create this term, they refer to Latour once more. Within the regime of categorization, actors have to engage in a test of worth (testing legitimate orders of worth). The regime of displacement is made up of tests of strength (testing forces). The term ‘test’ is thus imported twice, thereby doubling the concept (Boltanski and Chiapello, 2005: 314–23). In order to analyse contemporary transformations of capitalism, two concepts of trials are brought together: Trials as defined in the previous study on justification (testing legitimate orders of worth), and trials as adopted from Latour (testing forces). Relations between both regimes are analysed without any presupposition of one or the other’s superiority. Both regimes differ in terms of their spatial order. While the regime of displacement (made up of trials of strength) is flat, the regime of categorization presupposes an analytical space that consists of two distinct levels:

In this regime, tests may be defined as moments when beings, upon encountering resistance, seek to persevere by altering themselves – that is to say displacing their energy in order to come to terms with other beings, in such a way as to profit from a difference, however minimal, which confers an advantage. The balance of forces, which is altered, is thus the outcome of the test . . . Tests in the displacement regime are tests of strength. (Boltanski and Chiapello, 2005: 321)

We now turn to the topic that has led to a revision of the model of the orders of worth. *The New Spirit of Capitalism* claims that capitalism, once shaped by ownership and later by management, has now entered the era of networks. The rise of network capitalism is characterized by the emergence of a new economy of worth, namely the order of projects. By tracing the emergence of the project order of worth, *The New Spirit of Capitalism* is the most elaborate application of the sociology of critical capacity.¹² Revisiting ownership capitalism, the Boltanski and Chiapello find a compromise between domestic and industrial orders of worth. They depict managerial capitalism as a compromise between the civic and the industrial order of worth. The

transition to network capitalism is then accounted for in terms of an emerging regime of displacement and the circumvention of institutionalized tests.

Throughout the 1970s, industrial relations were heavily criticized. As a result, they were 'categorized' and equipped with a number of trials. Among other things, working hours and employment contracts became heavily regulated. In the 1990s, these arrangements to ensure the fairness of industrial relations became the target of a new wave of critique (as being too uniform) and were partly removed. Companies are increasingly engaging in networking, which allows them to by-pass institutionalized trials. Rather than maintaining relationships based on long-term contracts, they turn to temporary project alliances that cannot be subjected to the trials instrumented during the era of management capitalism. For instance, networks of production divided up and reconnected between various locations often escape the scrutiny of institutionalized trials. According to *The New Spirit of Capitalism*, this process of de-institutionalization is accompanied by another process of re-institutionalization. A new order of worth emerges equipped with trials supporting criticisms and moral indignation in the name of the project.

Without going into details on whether the existence of a project order of worth is built on sound evidence, the second import of the concept of trial is the most significant point of revision within Boltanski's programme. The transformation is performed simultaneously at a conceptual level and at the level of the empirical case. By demonstrating that the rise of networks is accompanied by a related (project) order of worth, Boltanski and Chiapello historicize and provincialize a concept that Latour has put to an all-encompassing use. Drawing on the concept of network, Latour refers to an ahistorical mode of connecting humans and non-humans, while Boltanski and Chiapello point to a new mode of justification and a historical transformation of capitalism. The first encounter results in a one-way import: the sociology of critical capacities imports an element from ANT. In the next section, both research programmes intersect and adoption takes place in both directions.

Second encounter: re-thinking objects and places of research

The second encounter concerns the role of ethnographic research for the development of the two research programmes, and presents two interrelated aspects. The first concerns the role of objects in the social order, the second the relationship to specific places for doing research. Table 1 gives an overview of the temporal development of this encounter.

Until and including his study on letters to the editor (Boltanski et al. 1984), *Boltanski* pays little attention to objects. His research projects are not located in specific places either. But soon he introduces an important theoretical change. He dissociates spheres of value from spheres of action. He repudiates the idea that spheres of actions, such as Bourdieu's fields, and spheres of value, such as different moral judgements, are congruent and fit with each other. Instead he starts with the assumption that in each situation heterogeneous value principles are at the disposal of actors (Boltanski and Thévenot, 2006).

The early *Latour*, from *Laboratory Life* (Latour and Woolgar, 1979) until *Science in Action* (Latour, 1987), begins his revision of sociology with fieldwork in a specific place,

TABLE I. Fieldwork, objects and places in Latour and Boltanski.

	Fieldwork	Objects	Place
Boltanski before 1984	Uncoupling of spheres of action from spheres of values leads to focus on field research	Sociology without objects (e.g. study on letters to the editor)	No defined relationship to place (e.g. bodies of texts as research objects)
Latour before 1987	Centrality of field research	Valuation of objects	Scientific controversy located in laboratory as specific place
Latourca. 1987–ca. 2000	Field research shows networks everywhere	Networks constitute objects	Networks transcend places. Generalization of the laboratory
Boltanski 1991–today	See 'Boltanski before 1984'	Selective rehabilitation of objects as stabilising tests, borrowing from Latour's notion of trial.	Inverted relationship to place: worlds and orders of worth always overlap (e.g. firms as compromising devices)
Latour 2002–today	Field research (and not theoretical reasoning) detects different modes of existence, defined by regimes of enunciation	Plurality of modes of existence of objects, mirroring Boltanski's distinction of regimes	Return of localization of objects by way of modes of existence. Generalization of the laboratory is taken back

Note: Vertical Axis: Time. Italics indicate that one author takes up ideas from the other.

namely, the scientific laboratory. The laboratory as place of doing science leads him to include objects as central for the outcome of controversies. As already mentioned, his objection to Bourdieu and the British social constructivists is based on his observation that it is not merely social forces that decide the outcome of a controversy, but the strength of socio-technical networks. These objects have a very strong attachment to the laboratory as location, since the strength of facts depends on the laboratory as production site. However, this attachment remains implicit. In these early days, the laboratory is the *cause célèbre* to state the importance of objects for sociology and Latour does not reflect on how objects relate to places in fields other than science.

Networks stabilize facts and therein lies the power of the laboratory. But already in his study on Pasteur, the borders of the laboratory prove to be malleable (Latour, 1988a). The laboratory of Pasteur expands and involves the ministries of Paris and the farms in the provinces. The first phase of ANT thus used the laboratory as an empirical site to prove the role of objects as stabilizers of networks that transcend their place of origin.

Since the 1990s ANT has flourished and expanded into other empirical fields, resulting in a generalization of its theoretical claims. Objects become central for a whole theory of society. The laboratory becomes the blueprint for society and society becomes a laboratory. The laboratory does not simply extend into the world, as in the case study on Pasteur. Rather, the world is analysed as if it were a lab. Networks that stabilize things and society are all over the place. For example, Hennion and Latour (1993) apply ANT in the study of art, Gomart (2002) in drug consumption, and Callon (1998) in the economy, to name but a few. Thereby, ANT aspires to become a method by which every object can be analysed. The routine procedure is as follows: give a description of a conflictive situation and highlight the role of objects in the solution of the conflict to indicate a difference from other qualitative sociologies. This standard procedure is universally applicable and has turned ANT into a method that can be used in any field.

Boltanski, inspired by Latour, introduces objects into his research programme in *On Justification* from 1991 (Boltanski and Thévenot, 2006). Compared to Latour, the role of objects is much more selective. Objects are important for specific orders of worth where they stabilize tests. With regard to specific locations, Boltanski tries to show that firms are places where all orders of worth can be employed and therefore a multiplicity of critiques, justifications and compromises can be observed. To use a formulation of Laurent Thévenot, firms are 'compromising devices' (Thévenot, 2001: 410). Thus, there is an inverted relationship to place. For theoretical reasons, Boltanski prefers places where orders of worth and regimes of action overlap, in order to show that orders of worth are placeless.

Boltanski has conducted many empirical studies, but none of those involved fieldwork. Nonetheless, he conceived of his theory as a framework to facilitate ethnographic studies. For him, the reconstruction of orders of worth in their purest form as derived from canonical texts in political theory is not an end in itself (Boltanski and Thévenot, 2006, Part Two: 83–124). Rather, the pure form helps to empirically elucidate different relationships between orders of worth and places and objects.

Most instructive for this connection is *Amour et justice comme compétences* (Boltanski, 1990a: 110–24). Boltanski argues that different regimes of action and the ruptures between those regimes can best be understood if empirical research focuses on objects.

Objects can silently coordinate actions, as, for example, timetables do in the regime of standardized action (*justesse*). Actors can also contest the contribution of objects to the coordination of action. In this case, they switch to the regime of justification and engage in tests of worth. Whether silently accepted or contested, in both regimes, coordination is a matter of a common principle of equivalence established through testing. Alternatively, coordination can be reached by circumventing tests. Again, Boltanski suggests looking at the role of objects in order to identify a third and a fourth regime of action. While objects are absent from a regime called love, the regime of violence is based on the brute force of objects. The differentiation of these different kinds of regimes of action proves the central role of objects for Boltanski. As he himself acknowledges, this goes back to the work of Latour (Boltanski and Thévenot, 2006: 20).

Around the year 2000 Latour and others began to extend ANT to any and every situation. However, they did not remove the theoretical origins of ANT in the laboratory. Increasingly, Latour became aware of this problem, at least in part driven by his readings of Boltanski (Latour, 2005: 240 ff.; 2009). Latour begins to understand that objects cannot have the same role in the stabilization of society in every field. More specifically, he came to understand that longer networks with more actants do not necessarily decide on the outcome of a controversy.

This insight derives again from an ethnographic study of a specific place, namely the highest administrative court in France (Latour, 2002b). Files dominate the court routine; other objects remain in the background. In court cases those files are used to strengthen the prosecution or the plea, but they are referred to in very different ways compared with the reference to objects in laboratory science (Latour, 2002b: 207 ff.).

Latour infers that the law has its own logic, but he disputes that this logic is the logic of a field or functional system:

If law occurs in the court, this is not because it belongs to a system that is different from the rest of the world, but because it works in a different mode ... Law does not consist of law, just as little as a gas pipe consists of gas or science consists of science. On the contrary, the steel, the swath, the pipeline, the pressure valve, the meter, the surveyor and the control rooms allow the gas to flow uninterrupted through Europe. (Latour, 2002b: 283, our translation).

This quote is another rejection of a sociological model of explanation based on a metaphysical misconception. At the same time, Latour points to an alternative, without drawing on Boltanski (although he uses a similar terminology). He suggests distinguishing between regimes of enunciation (*régimes d'énonciation*) and different modes of existence (*modes d'existence*) (Latour, 1988b; 2005: 241).¹³ According to this perspective, objects are related to specific ways of handling that can be traced back to different places of their origin. For instance, the fabrication of a piece of art involves artistic activities and takes place in a studio, and the production of scientific truth engages laboratory devices.

To summarize, in the second encounter, Boltanski first takes inspiration from Latour and introduces objects as stabilizers of tests. But the objects do not have a strong relationship to place. This in turn leads Latour, after his fieldwork in the court, to reconsider

the relationship between objects and places and ultimately to introduce, partly inspired by Boltanski, the notion of a plurality of regimes of enunciation. The exchange is two-way, with both theories borrowing from and approaching each other.

Third encounter: re-thinking critique

A further encounter occurs with regard to the notion of critique and the way it is conceptualized by both authors. Once again, both Latour and Boltanski depart from a position assigned to Bourdieu. For both, Bourdieu represents a critical sociology that leaves the task of critique to sociologists who are equipped with some sort of superior knowledge. Both Latour and Boltanski try to escape from this model, according to which intellectuals engage in a top-down version of social critique. Instead, they look for a more modest position. Staying closer to their objects of inquiry, they seek to establish a form of lateral critique that is presented with attention to empirical detail.

Latour attacks Bourdieu's concept of critique as being limited to a critical gesture of denouncing power relations and for relying on a methodological artefact. He accuses critical sociology of cleaning up controversies. Once presented in a cleaned-up and impoverished fashion, devoid of their contents and objects, the resulting gaps are filled with pre-packaged assumptions about illegitimate uses of power, and depicted in negative terms (Latour, 1993: 5 ff.). Latour rejects this manoeuvre as an attempt to establish a monopoly of interpretation for sociologists. To proceed in this way is to ignore empirical data and to suggest that only sociologists are capable of capturing the social structures or social fields relevant to explain how controversies end.

The research programme developed by Latour claims to fully compensate for this failure. The empty space of critique is filled with the objects and contents of controversies left out by previous analyses. To explain society is to provide a description of actor-networks. The critical force of generalized constructivism resides in its capacity to reveal the social and material conditions of producing truth (Hacking, 1999). Extending ANT to other fields, Latour recommends applying the same procedure to the subject of law or politics. Following this suggestion is likely to have a critical impact, for to throw light on the conditions of validity of facts is to undermine speaking in the name of facts. ANT draws its critical potential from a relativistic approach by showing the contingent circumstances of production of what is considered to be true and taken for granted.

Boltanski calls his own research programme a 'sociology of critical capacity'. As indicated by the title, he intends to offer an alternative to sociology as critique of ideology. Boltanski has insisted that drawing this line does not imply he denounces critical sociology or the critique of ideology (Boltanski, 1990b: 129), but draws attention to its occurrence in everyday practice and takes it seriously as an object of inquiry. Contrasting Latour and Boltanski, there are two ways of rehabilitating critique. While the former has opted for radically flattening out critique, the latter maintains that critique requires an external point of view, which has to be determined by pragmatist analysis. Boltanski shows what stabilizes different forms of critique, justifications and compromises: these are objects as well as canonical works of philosophy, where the orders of worth are formulated in their purest form. From *The New Spirit of Capitalism* (Boltanski and Chiapello, 2005), it becomes clear that Boltanski does not consider critique to be a

marginal phenomenon. On the contrary, he argues that a specific form of critique ('artistic critique') has played an important role in the recent transformation of capitalism. In addition, he describes how another form of critique ('social critique'), which once contributed to the institutionalization of industrial relations, has been disarmed. According to Boltanski, its loss of influence deserves a proper explanation.

According to him, capitalism has proved to be more mobile than critique. In absorbing the artistic critique of alienation, capitalism has succeeded in renewing itself (Boltanski and Chiapello, 2005). Spontaneity and creativity, once defended by the critics of capitalism, have lost their critical connotation. Instead, they have become highly popular within the current capitalist formation. This argument is remarkable as it turns 'critique' into a macroscopic variable explaining transformations on a global scale. 'Tests of worth' were first established as a response to the critique of capitalism by social movements. They were then accused of 'over-institutionalization' by a later wave of critique that draws on the artistic critique of alienation and were sidestepped by activities of networking and displacement. To summarize, the second wave of (artistic) critique has come to threaten the achievements and the very foundation of an earlier wave of (social) critique.

Boltanski asserts that with this argument, the model of orders of worth (as presented in *On Justification*) has been endowed with a dynamic and historical understanding. He invites the social sciences to reflect on how they actively intervene in the process of de- and re-institutionalizing of tests.

With this empirical take on critique, Boltanski's programme is fundamentally different from the critical sociology of Pierre Bourdieu (Potthast, 2004). He discards two sociological varieties of critique: on the one hand, he discards a revival of former sociological critiques of capitalism, since it has lost touch with existing, new forms of capitalism. The new capitalism of networks has overridden earlier forms of critique. Already the question of how earlier forms of critique have been overridden disavows sociological studies that simply repeat these forms of critique.

On the other hand, ANT features among the components that have led to the de-institutionalization of established tests and to the renewal of capitalism (Boltanski and Chiapello, 2005: 103–63, especially 116, 145, 157, note 14). As Boltanski subsumes ANT as one among many anarchic and anti-bureaucratic impulses of artistic critique, he indicates that he does not share Latour's ideas of critique as description. It is part of the enigmatic relationship between the two research programmes that *The New Spirit of Capitalism* can be understood in another way as a critique of ANT: Boltanski maintains that Latour took an important step in analysing a new capitalist formation by consistently focusing on networks and heterogeneous assemblages. But, according to Boltanski, Latour failed to take the second step: the creation of networks that cannot be understood within the vocabulary of existing tests, will become categorized and institutionalized in due time. The second, missing step, the one he took together with Eve Chiapello in *The New Spirit of Capitalism*, thus consists in proving a new order of worth. This interpretation, however, only works if the new order of worth of the project complies with the rules formulated in *On Justification*.¹⁴

Also for *Latour*, the question of how critique loses its impact becomes important, though in a very different context. In an article entitled 'Why has critique run out of steam?', Latour (2004b) asserts that after twenty years, constructivism lacks critical

traction, because it can be used by political persuasions of all kinds. He uses as example the United States government disputing global warming by referring to the impossibility of a closure of scientific controversies. If the Bush administration uses constructivist arguments to dispute global warming, then constructivism as a mode of critique clearly fails. As Latour observes himself, his analysis is similar to Boltanski's analysis of the failure of artistic critique in *The New Spirit of Capitalism* (Latour, 2004b: 231). But Latour stops at the succinct commentary that capitalism always wins over all forms of critique. He fails to analyse the sociological contexts and historical parallels to the deadening of the artistic critique.

Thus he misses the opportunity to use Boltanski's template to analyse the demise of constructivism as part of a reordering of different forms of justification. Instead he proposes a new mission for sociology. The task of sociology should no longer consist in analysing the construction of facts. This, he asserts, would only amount to another instance of work *behind* the actors. Instead the goal should be to construct by way of description, 'matters of concern' as arenas to carry out public conflicts (Latour, 2004b: 232 ff.). Instead of discussing, following Boltanski, the conflicts and the historical effects of specific forms of critique, Latour sees a way out in understanding critique as a 're-assembling' of humans and non-humans (Latour, 2005). However, the rules of such a new sociology of re-assembling, apart from calling for ever more description, remain vague.

Conclusion: disciplinary politics

The common starting point of the two symmetrical programmes was the rejection of a critical sociology whose main goal consisted in ever more radical breaks of a supposed 'illuso'. Both symmetry programmes see such a critical sociology as a major obstacle to the further development of the discipline. Both programmes can be seen as helping sociology to find a new self-image in the concert of sciences. But it is here where the two programmes also most notably differ. As a conclusion, the different politics of discipline explain in part when the two authors take up or ignore each other's theoretical ideas:

Latour stages himself as a lost son of sociology. If one follows his self-portrayal in *Reassembling the Social* (which in French is entitled: 'Changing Society – Remaking of Sociology'), he had to leave sociology and circumvent it, to be finally able to remake it (Latour, 2005). To do so he spared no pains. He not only had to undo Bourdieu, he even had to undo the whole line of ancestors back to Lévi-Strauss and Durkheim to arrive at a new forefather, Durkheim's arch-enemy, Gabriel Tarde (Latour, 2002a).

Even if Latour exaggerates his break with tradition, he shares with Tarde the view that already separated the latter from his discipline, namely that sociology should not be content with dealing with the ignorance of other disciplines. The attempt of sociology to carve out a science of the social that deals with deviant phenomena that neighbouring disciplines such as economics, political science, the natural sciences or even everyday knowledge cannot explain, has set up the doubtful monopoly of sociology to criticize other disciplines as short-sighted. Latour cannot see any gain in explaining the social with the social and urges seeing the new role of sociology in describing the different ways of handling objects of different disciplines, professions and other actors to formulate new matters of concern.

Following the thesis of *We Have Never Been Modern* (Latour, 1993: 100f), sociology should do for modern society what anthropology always did for pre-modern societies, namely to describe the networks composed of social and natural elements. Latour goes back to a tradition where sociology and anthropology are united – a tradition that, unmentioned by Latour, also originates in Durkheim and Mauss. In contrast, he denounces those ‘social sociologies’ that depart from this tradition and conceptualize modernity as a great divide and thus permanently replicate the divide by insisting on the difference between modern and pre-modern, nature and culture, science, politics and other social fields.

However, the consistency of his programme suffers from permanent revisions whose implications for the theory are often ambiguous. Specifically, his adherence to networks that cut through social fields collides with his proposal of regimes of enunciation. It seems as if Latour does not realize that he developed networks exactly against such kinds of differentiations. With one hand he undermines modern distinctions, with the other, he is increasingly forced through his locally bounded research to re-establish theoretically less complex forms of differentiation. In *The Politics of Nature*, differentiation theory reappeared as a (poor) theory of professions, as he singled out different ‘professions’ such as the ‘scientists’, ‘economists’, ‘politicians’ and ‘moralists’ to debate in the parliament of things (Latour, 2004: 136 ff.). In his later works, he introduces the already mentioned regimes of enunciation that root differentiation in places of production. In both cases, he reintroduces through the backdoor analogies to separate and autonomous fields, which ultimately undermines his radically anti-sociological gesture.

The problem of Latour’s career as the lost son of sociology is not so much his apostasy, since in his work he was always consequentially propelling some of the most convincing critiques of and alternatives to sociology. His recent attempts to return to and to improve sociology, however, are tainted by an ignorance of previous differentiationist theories and his failure to offer better alternatives.

Boltanski was regarded intermittently as a true dissident of Bourdieu. In light of the Latourian programme, he could rather be called an heir in a genealogy without gaps. He consistently described even his most radical changes as minor reforms and revisions. His orientation is also, quite contrary to Latour, guided towards the centre of sociology, which can also be read from the places and formats of his publications. While Latour writes philosophical treatises, reportage, dialogues and essays for art catalogues, Boltanski consistently writes scholarly monographs.

If Boltanski refers to neighbouring disciplines, such as economics, he does so as a gesture of inclusion. In a talk to economists he maintains that with *On Justification* he succeeded in breaking out of the difference between necessity (the task of economics) and legitimation (the task of sociology) (Boltanski, 2002). With the construction of a market and an industrial regime of justification, he claims to have incorporated territories into sociology that are usually considered those of economics. Boltanski cuts the link between spheres of value and spheres of action. He demands that social theory should not assume such a link, but should create a theory that researches the intermingling of different spheres of value. This main feature is never questioned, but rather strengthened through revisions, particularly in elaborating his concept of test and its differentiation into test of worth and test of force.

We have traced three encounters of two research programmes with a similar starting point. They are both based on symmetry, but they both have different strategies. Latour is heading for the expansion of a small field, science studies, into general sociology. Boltanski is trying to find a general sociology of critical situations. These two strategies also highlight the complex relationship between science studies and general sociology and they point to two mirroring problems. The former strategy points to how much modern societies have become shaped by science. General sociology then has to include or even become a form of science studies. However, the problem with this approach, as we can see from the expansion of Actor-Network theory, is that it tends to imagine all fields of society according to science, thereby ignoring important differences. The other strategy, as can be seen from Boltanski, is to proceed by keeping symmetries between orders of worth intact at all costs. It focuses on critical situations that can occur everywhere. It is impartial to the kinds of context where these situations occur. Thus, it neglects the differences of places, such as laboratories, and has difficulties including the very contribution of science studies to social theory. At the moment, none of these approaches manages to include the other in a satisfactory way and it may need several further encounters to tackle the problem.

The relationship between Boltanski and Latour has gone unnoticed until recently. Latour has given a first, albeit cryptic account of this relationship in his dialogue. In our article we hope to have deepened the encounters between the two authors. Nevertheless both authors continue to present themselves solely with regard to their respective home disciplines, rendering the encounters invisible.

Acknowledgements

Many thanks to Antoine Hennion, Erhard Schüttpelz, Tristan Thielmann and two anonymous reviewers for their helpful comments and to Ann Kelly for improving the language tremendously.

Notes

1. For some contributions to the theoretical discussion of the sociology of critical capacities, see Bénatouïl (1999), Blic (2000), Dodier (1993, 2005), Jagd (2004), Nachi (2006), Potthast (2001), Silber (2003), Vandenberghe and Delanty (2006), and Wagner (1999). For ANT, the literature has already become immense, for a good start, see Law and Hassard (1999), for important critiques and interpretations, see Bloor (1999), Cohen (1999), Collins and Yearley (1992a, 1992b), Fuchs and Marshall (1998), Gingras (1995), Harman (2009), Lenoir (1994), McClellan (1996), and Nowotny (1990).
2. It is worth pointing out that both authors were not only inspired by Bourdieu, as highlighted in this article, but also strongly influenced by research stays in the US and notably by ethno-methodology. For some sociological contextualizations of the two research programmes, see François Dosse, who situates both programmes within an 'empire of meaning' (Dosse, 1998). An interpretation from the viewpoint of a sociology of science would have to include the specificities of the French university system, as has been pointed out by Gad Freudenthal (1990) for the context of ANT. Boltanski himself has recently contributed to an analysis of French sociology in the 1970s (Boltanski, 2008).

3. Obviously, there are many other influences for both programmes, such as Habermas's concept of critique for Boltanski or the semiotics of Greimas for Latour.
4. For better orientation in the text, we print an author's name in *italics*, whenever we switch from one research programme to the other.
5. For a critique of this methodological imperative from the viewpoint of field theory, see Gingras (1995).
6. Callon and Latour acknowledge Boltanski in the very first article in which they establish ANT as an anti-structuralist social theory and in which they criticize Bourdieu (Callon and Latour, 1981).
7. Cohen shows in his analysis of *We Have Never Been Modern*, how the fervent ideology critique of the 'behind' is susceptible to aporia itself (Cohen, 1999).
8. These six regimes are always written out and not shown as tables. Note how this differs from Latour who has a penchant for illustrating his arguments with diagrams. Certainly, Latour's diagrams do not aim at theoretical explanation, they are rather 'deconstructive' as Lynch calls them (Lynch, 1991: 16).
9. Latour and his translators use the term 'trial'; the translators of Boltanski use the term 'test'. However, in French, it is the same word, *épreuve*. We follow this tradition and use the term 'trial' in conjunction with Latour and the term 'test' in conjunction with Boltanski.
10. In retrospect, Boltanski claims that he was already influenced by the concept of test when writing *On Justification* (Boltanski, 2002: 284).
11. They start their acknowledgments with:

Stimulating in its audacity, the research done by Latour and Callon deserves much credit, both for showing the relationship between the weaving of social bonds and the fabrication of objects and for building a bridge between modern social science and political philosophy. We are thinking in particular of the way they use Hobbes's political theory to extend and rework certain contributions of ethnomethodology. (Boltanski and Thévenot, 2006: 20).

12. Apart from the project, Boltanski's co-author Laurent Thévenot also considered the environment (Thévenot et al., 2000) and information (Thévenot, 1997: 233) as candidates for a seventh order of worth.
13. Both terms are borrowed from *Les différents modes d'existence* by the French philosopher Etienne Souriau, published in 1943 (Latour, 2008: 7). Latour has written an extensive review article of this book (Latour, 2008), insisting on the performative nature of Souriau's argument: things of different modes of existence originate in and are shaped by distinct sets of activities.
14. This interpretation also necessitates being highly selective regarding Boltanski's research interests. We focused on *On Justification* and *The New Spirit of Capitalism*, because this allows us to portray the author as Boltanski *latourien*. We have omitted other research questions that have few overlaps with Latour, such as the demise of the domestic order. See the studies on the French cadres (Boltanski, 1982), the mediatization of suffering (Boltanski, 1999), and abortion (Boltanski, 2004).

References

- Bénatouïl T (1999) A tale of two sociologies: the critical and the pragmatic stance in contemporary French sociology. *European Journal of Social Theory* 1(2): 379–96.

- Blic D de (2000) La sociologie politique et morale de Luc Boltanski. *Raisons politiques* 3: 149–58.
- Bloor D (1976) *Knowledge and Social Imagery*. London: Routledge & Kegan Paul.
- Bloor D (1999) Anti-Latour. *Studies in the History and Philosophy of the Sciences* 30(1): 81–112.
- Boltanski L (1982) *Les cadres. La formation d'un groupe social*. Paris: Minit.
- Boltanski L (1990a) *L'amour et la justice comme compétences: trois essais de sociologie de l'action*. Paris: Métailie.
- Boltanski L (1990b) Sociologie critique et sociologie de la critique. *Politix* 10–11: 124–34.
- Boltanski L (1999) *Distant Suffering: Morality, Media, Politics*. Cambridge: Cambridge University Press.
- Boltanski L (2002) Nécessité et justification. *Revue économique* 53(2): 275–89.
- Boltanski L (2004) *La condition foetale. Une sociologie de l'avortement et de l'engendrement*. Paris: Gallimard.
- Boltanski L (2008) *Rendre la réalité inacceptable. A propos de la production de l'idéologie dominante*, Paris: Demopolis.
- Boltanski L and Chiapello E (2005) *The New Spirit of Capitalism*. London: Verso [First French edition: *Le nouvel esprit du capitalisme*. Paris, Gallimard 1999].
- Boltanski L, Darré Y and Schiltz M-A (1984) La Dénonciation. *Actes de la recherche en sciences sociales* 51: 3–40.
- Boltanski L and Thévenot L (2006) *On Justification: Economies of Worth*. Princeton, NJ: Princeton University Press [First French edition: *De la justification. Les Economies de la grandeur* Paris, Gallimard 1991].
- Bourdieu P (1975) The specificity of the scientific field and the social conditions of the progress of reason. *Social Science Information / Information sur les Sciences Sociales* 14: 19–47.
- Bourdieu P (1979) *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.
- Bourdieu P (1986) The forms of capital. In: Richardson J (ed.) *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood.
- Callon M (1998) *The Laws of the Markets*. Oxford: Blackwell.
- Callon M (1999) Ni intellectuel engagé, ni intellectuel dégaqué: la double stratégie de l'attachement et du détachement. *Sociologie du travail* 41(1): 65–78.
- Callon M and Latour B (1981) Unscrewing the big Leviathan: how actors macrostructure reality and how sociologists help them to do so. In: Knorr-Cetina, K and Cicourel A (eds) *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies*. New York: Routledge.
- Cohen S (1999) Reading science studies writing. In: Biagioli M (ed.) *The Science Studies Reader*. New York: Routledge.
- Collins H M and Yearley S (1992a) Epistemological chicken. In: Pickering A (ed.) *Science as Practice and Culture*. Chicago: University of Chicago Press.
- Collins H M and Yearley S (1992b) Journey into space. In: Pickering A (ed.) *Science as Practice and Culture*. Chicago: University of Chicago Press.
- Dodier N (1993) Action as a combination of 'common' worlds. *Sociological Review* 41(3): 556–71.
- Dodier N (2005) L'espace et le mouvement du sens critique. *Annales. Histoire et sciences sociales* 60: 7–31.
- Dosse F (1998) *Empire of Meaning: The Humanization of the Social Sciences*. Minneapolis: University of Minnesota Press.

- Freudenthal G (1990) Science studies in France: a sociological view. *Social Studies of Science* 20(2): 353–69.
- Fuchs S and Marshall D A (1998) Across the great (and small!) divides. *Soziale Systeme* 4: 6–31.
- Gingras Y (1995) Following scientists through society? Yes, but at arm's length! In: Buchwald J Z (ed.) *Scientific Practice: Theories and Stories of Doing Physics*. Chicago: University of Chicago Press.
- Gomart E (2002) Methadone: six effects in search of a substance. *Social Studies of Science* 32(1): 93–135.
- Hacking I (1999) *The Social Construction of What?* Cambridge, MA: Harvard University Press.
- Harman G (2009) *Prince of Networks: Bruno Latour and Metaphysics*. Seddon: re.press.
- Hennion A and Latour B (1993) Objet d'art, objet de science. Note sur les limites de l'anti-fé tichisme. *Sociologie de l'art* 6: 7–24.
- Jagd S (2004) Laurent Thévenot and the French Convention School: a short introduction. *Economic Sociology* 5(3): 2–9.
- Knorr-Cetina K D (1981) *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science*. Oxford: Pergamon.
- Latour B (1987) *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.
- Latour B (1988a) *The Pasteurization of France*. Cambridge, MA: Harvard University Press.
- Latour B (1988b) The politics of explanation: an alternative. In: Woolgar S (ed.) *Knowledge and Reflexivity: New Frontiers in the Sociology of Knowledge*. London: Sage.
- Latour B (1993) *We Have Never Been Modern*. Cambridge, MA: Harvard University Press.
- Latour, B (1999) *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge, MA: Harvard University Press.
- Latour B (2000) When things strike back: a possible contribution of science studies to the social sciences. *British Journal of Sociology* 51(1): 105–23.
- Latour B (2002a) Gabriel Tarde and the end of the social. In: Joyce P (ed.) *Social in Question: New Bearings in History and the Social Sciences*. London: Routledge.
- Latour B (2002b) *La fabrique du droit. Une ethnographie du conseil d'état*. Paris: La Découverte.
- Latour B (2004a) *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: Harvard University Press.
- Latour B (2004b) Why has critique run out of steam? From matters of fact to matters of concern. *Critical Inquiry* 2: 226–48.
- Latour, B (2005) *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.
- Latour B (2008) A propos d'un livre d'Etienne Souriau: les différents modes d'existence. Available at: <http://www.bruno-latour.fr/articles/2006.html>.
- Latour B (2009) Dialogue sur Deux Systèmes de Sociologie. In: Breviglieri M, Lafaye C and Trom D (eds) *Compétences critiques, sens de la justice*. Paris: Gallimard.
- Latour B and Woolgar S (1979) *Laboratory Life: The Social Construction of Scientific Facts*. London: Sage.
- Law J and Hassard J (eds) (1999) *Actor-Network Theory and After*. Oxford: Blackwell.
- Lenoir T (1994) Was the last turn the right turn? The semiotic turn and A. J. Greimas. *Configurations* 2: 119–36.

- Lynch M (1985) *Art and Artifact in Laboratory Science: A Study of Shop Work and Shop Talk in a Research Laboratory*. London: Routledge & Kegan Paul.
- Lynch M (1991) Pictures of nothing? Visual construals in social theory. *Sociological Theory* 9(1): 1–21.
- McClellan C (1996) The economic consequences of Bruno Latour. *Social Epistemology* 10(2): 193–209.
- Merton R K (1973) *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: University of Chicago Press.
- Nachi M (2006) *Introduction à la sociologie pragmatique*. Paris: Armand Colin.
- Nowotny H (1990) Actor-networks vs. science as self-organising system: a comparative view of two constructivist approaches. In: Krohn W et al. (eds) *Self-organization: Portrait of a Scientific Revolution*. Dordrecht: Kluwer.
- Potthast J (2001) Review essay: Der Kapitalismus ist kritisierbar. Le nouvel esprit du capitalisme und das Forschungsprogramm der Soziologie der Kritik. *Berliner Journal für Soziologie* 11(4): 551–62.
- Potthast J (2004) Soziologie und Kritik. Ein Theorievergleich zum Problem der Politisierung sozialer Ungleichheit. In: Ebrecht J and Hillebrandt F (eds) *Bourdieu's Theorie der Praxis. Erklärungskraft – Anwendungen – Perspektiven* (2nd rev. edn). Wiesbaden: VS.
- Shapin S and Schaffer S (1985) *Leviathan and the Air Pump*. Princeton, NJ: Princeton University Press.
- Silber I F (2003) Pragmatic sociology as cultural sociology: beyond repertoire theory? *European Journal of Social Theory* 6(4): 427–49.
- Thévenot L (1997) Un gouvernement par les normes. In: Conein B and Thévenot L (eds) *Cognition et information en société. Raisons pratiques*, vol. 8. Paris: EHESS.
- Thévenot L (2001) Organized complexity: conventions of coordination and the composition of economic arrangements. *European Journal of Social Theory* 4(4): 405–25.
- Thévenot L, Moody M and Lafaye C (2000) Forms of valuing nature: arguments and modes of justification in French and American environmental disputes. In: Lamont M and Thévenot L (eds) *Rethinking Comparative Cultural Sociology: Repertoires of Evaluation in France and the United States*. Cambridge: Cambridge University Press.
- Vandenberghe F and Delanty G (2006) The age of Epigones: post-Bourdieuian social theory in France. In: Delanty G (ed.) *Handbook of Contemporary European Social Theory*. London: Routledge.
- Wagner P (1999) After justification: Repertoires of evaluation and the sociology of modernity. *European Journal of Social Theory* 2(3): 341–57.

About the authors

Michael Guggenheim is a postdoctoral research fellow at the University of Zürich. His PhD, published as *Organized Environment*, analysed how environmental research firms move between science, politics and the economy. His current project is a theoretical, historical and ethnographical analysis of change of use of buildings. He recently co-edited *Re-shaping Cities: How Global Mobility Transforms Architecture and Urban Form* (London: Routledge). He is also the co-author of *Imagined Lay-People* (Weilerswist: Velbrück).

Jörg Potthast is a postdoctoral research fellow at Siegen University and a guest fellow at the Social Science Research Centre, Berlin. He holds a diploma and a PhD in Sociology from FU Berlin and TU Berlin and has conducted several research projects in the area of Science and Technology Studies. Recent publications include *Die Bodenhaftung der Netzwerkgesellschaft* (Bielefeld: transcript, 2007) and 'Ethnography of a Paper Strip' (*Science, Technology & Innovation Studies*, 2008). Focusing on technical infrastructures, his current project seeks to elaborate on a political sociology of access.