

My greatest debt goes, however, to the doctoral students who have participated over the years in my 'thesis-writing workshops'. In a discipline in which I have never been trained but to which I have never despaired of contributing, they have been my best and most patient teachers.

I hope that such a protracted and idiosyncratic genesis goes some way toward explaining the opinionated nature of this piece of work. Now that this alternative social theory has been presented in an orderly fashion, readers can decide to put it to use, to distort it beyond recognition, or, most likely, to drop it altogether—but this time knowingly! As for me, I have finally discovered in writing this book the conditions under which I could be proud of being called a sociologist.

Introduction: How to Resume the Task of Tracing Associations*

The argument of this book can be stated very simply: when social scientists add the adjective 'social' to some phenomenon, they designate a stabilized state of affairs, a bundle of ties that, later, may be mobilized to account for some other phenomenon. There is nothing wrong with this use of the word as long as it designates what is *already* assembled together, without making any superfluous assumption about the *nature* of what is assembled. Problems arise, however, when 'social' begins to mean a type of material, as if the adjective was roughly comparable to other terms like 'wooden', 'steely', 'biological', 'economical', 'mental', 'organizational', or 'linguistic'. At that point, the meaning of the word breaks down since it now designates two entirely different things: first, a movement during a process of assembling; and second, a specific type of ingredient that is supposed to differ from other materials.

What I want to do in the present work is to show why the social cannot be construed as a kind of material or domain and to dispute the project of providing a 'social explanation' of some other state of affairs. Although this earlier project has been productive and probably necessary in the past, it has largely stopped being so thanks in part to the success of the social sciences. At the present stage of their development, it's no longer possible to inspect the precise ingredients that are entering into the composition of the social domain. What I want to do is to redefine the notion of social by going back to its original meaning and making it able to trace connections again. Then it will be possible to resume the traditional goal of the social sciences but

* A shortened reference format is used in the notes; the complete bibliography is at the end. This somewhat austere book can be read in parallel with the much lighter Bruno Latour and Emilie Hermant (1998), *Paris ville invisible*, which tries to cover much of the same ground through a succession of photographic essays. It's available online in English (*Paris the Invisible City*) at <http://bruno.latour.name>.

with tools better adjusted to the task. After having done extensive work on the 'assemblages' of nature, I believe it's necessary to scrutinize more thoroughly the exact content of what is 'assembled' under the umbrella of a society. This seems to me the only way to be faithful to the old duties of sociology, this 'science of the living together'.¹

Such a project entails, however, a redefinition of what is commonly understood by that discipline. Translated from both the Latin and Greek, 'socio-logy' means the 'science of the social'. The expression would be excellent except for two drawbacks, namely the word 'social' and the word 'science'. The virtues that we are prepared nowadays to grant the scientific and technical enterprises bear little relation with what the founders of the social sciences had in mind when they invented their disciplines. When modernizing was in full swing, science was a rather powerful urge to be prolonged indefinitely without any misgivings to slow its progress down. They had no idea that its extension could render it almost coextensive with the rest of social intercourse. What they meant by 'society' has undergone a transformation no less radical, which is thanks in large part to the very expansion of the products of science and technology. It is no longer clear whether there exists relations that are specific enough to be called 'social' and that could be grouped together in making up a special domain that could function as 'a society'. The social seems to be diluted everywhere and yet nowhere in particular. So, neither science nor society has remained stable enough to deliver the promises of a strong 'socio-logy'.

In spite of this double metamorphosis, few social scientists have drawn the extreme conclusion that the object as well as the methodology of the social sciences should be modified accordingly. After having been so often disappointed, they still hope to reach one day the promised land of a true science of a real social world. No scholars are more aware of this painful hesitation than those who, like me, have spent many years practicing this oxymoron: 'sociology of science'. Because of the many paradoxes triggered by this lively but more than slightly perverse subfield and the numerous changes in the meaning of 'science', I think time has come to modify what is meant by 'social'. I therefore wish to devise an alternative definition for

¹ This expression is explained in Laurent Thévenot (2004), 'A science of life together in the world'. This logical order—the assemblies of society after those of nature—is the exact opposite of how I came to think about it. The twin books—Bruno Latour (1999), *Pandora's Hope: Essays on the reality of science studies* and Bruno Latour (2004), *Politics of Nature: How to Bring the Sciences into Democracy*—were written long after my colleagues and I had developed an alternative social theory to deal with the new puzzles uncovered after carrying out our fieldwork in science and technology.

'sociology' while still retaining this useful label and remaining faithful, I hope, to its traditional calling.

What is a society? What does the word 'social' mean? Why are some activities said to have a 'social dimension'? How can one demonstrate the presence of 'social factors' at work? When is a study of society, or other social aggregates, a good study? How can the path of a society be altered? To answer these questions, two widely different approaches have been taken. Only one of them has become common sense—the other is the object of the present work.

The first solution has been to posit the existence of a specific sort of phenomenon variously called 'society', 'social order', 'social practice', 'social dimension', or 'social structure'. For the last century during which social theories have been elaborated, it has been important to distinguish this domain of reality from other domains such as economics, geography, biology, psychology, law, science, and politics. A given trait was said to be 'social' or to 'pertain to society' when it could be defined as possessing specific properties, some negative—it must not be 'purely' biological, linguistic, economical, natural—and some positive—it must achieve, reinforce, express, maintain, reproduce, or subvert the social order. Once this domain had been defined, no matter how vaguely, it could then be used to shed some light on specifically social phenomena—the social could explain the social—and to provide a certain type of explanation for what the other domains could not account for—an appeal to 'social factors' could explain the 'social aspects' of non-social phenomena.

For instance, although it is recognized that law has its own strength, some aspects of it would be better understood if a 'social dimension' were added to it; although economic forces unfold under their own logic, there also exists social elements which could explain the somewhat erratic behavior of calculative agents; although psychology develops according to its own inner drives, some of its more puzzling aspects can be said to pertain to 'social influence'; although science possesses its own impetus, some features of its quest are necessarily 'bound' by the 'social limitations' of scientists who are 'embedded in the social context of their time'; although art is largely 'autonomous', it is also 'influenced' by social and political 'considerations' which could account for some aspects of its most famous masterpieces; and although the science of management obeys its own rules, it might be advisable to also consider 'social, cultural, and political aspects' that could explain why some sound organizational principles are never applied in practice.

Many other examples can easily be found since this version of social theory has become the default position of our mental software that takes into consideration the following: there exists a social 'context' in

which non-social activities take place; it is a specific domain of reality; it can be used as a specific type of causality to account for the residual aspects that other domains (psychology, law, economics, etc.) cannot completely deal with; it is studied by specialized scholars called sociologists or socio-(x)—'x' being the placeholder for the various disciplines; since ordinary agents are always 'inside' a social world that encompasses them, they can at best be 'informants' about this world and, at worst, be blinded to its existence, whose full effect is only visible to the social scientist's more disciplined eyes; no matter how difficult it is to carry on those studies, it is possible for them to roughly imitate the successes of the natural sciences by being as objective as other scientists thanks to the use of quantitative tools; if this is impossible, then alternative methods should be devised that take into account the 'human', 'intentional', or 'hermeneutic' aspects of those domains without abandoning the ethos of science; and when social scientists are asked to give expert advice on social engineering or to accompany social change, some sort of political relevance might ensue from these studies, but only after sufficient knowledge has been accumulated.

This default position has become common sense not only for social scientists, but also for ordinary actors via newspapers, college education, party politics, bar conversations, love stories, fashion magazines, etc.² The social sciences have disseminated their definition of society as effectively as utility companies deliver electricity and telephone services. Offering comments about the inevitable 'social dimension' of what we and others are doing 'in society' has become as familiar to us as using a mobile phone, ordering a beer, or invoking the Oedipus complex—at least in the developed world.

The other approach does not take for granted the basic tenet of the first. It claims that there is nothing specific to social order; that there is no social dimension of any sort, no 'social context', no distinct domain of reality to which the label 'social' or 'society' could be attributed; that no 'social force' is available to 'explain' the residual features other domains cannot account for; that members know very well what they are doing even if they don't articulate it to the satisfaction of the observers; that actors are never embedded in a social context and so are always much more than 'mere informants'; that there is thus no meaning in adding some 'social factors' to other scientific specialties; that political relevance obtained through a 'science of society' is not necessarily desirable; and that 'society', far from being the context 'in which' everything is framed, should rather be construed as one of the

² The diffusion of the word 'actor' itself, which I will keep vague until later—see p. 46—, being one of the many markers of this influence.

many connecting elements circulating inside tiny conduits. With some provocation, this second school of thought could use as its slogan what Mrs Thatcher famously exclaimed (but for very different reasons!): 'There is no such a thing as a society.'

If they are so different, how could they both claim to be a science of the social and aspire to use the same label of 'sociology'? On the face of it, they should be simply incommensurable, since the second position takes as the major puzzle to be solved what the first takes as its solution, namely the existence of specific social ties revealing the hidden presence of some specific social forces. In the alternative view, 'social' is not some glue that could fix everything including what the other glues cannot fix; it is *what* is glued together by many *other* types of connectors. Whereas sociologists (or socio-economists, socio-linguists, social psychologists, etc.) take social aggregates as the given that could shed some light on residual aspects of economics, linguistics, psychology, management, and so on, these other scholars, on the contrary, consider social aggregates as what should be explained by the specific *associations* provided by economics, linguistics, psychology, law, management, etc.³

The resemblance between the two approaches appears much greater, however, provided one bears in mind the etymology of the word 'social'. Even though most social scientists would prefer to call 'social' a homogeneous thing, it's perfectly acceptable to designate by the same word a trail of *associations* between heterogeneous elements. Since in both cases the word retains the same origin—from the Latin root *socius*—it is possible to remain faithful to the original intuitions of the social sciences by redefining sociology not as the 'science of the social', but as the *tracing of associations*. In this meaning of the adjective, social does not designate a thing among other things, like a black sheep among other white sheep, but a *type of connection* between things that are not themselves social.

At first, this definition seems absurd since it risks diluting sociology to mean any type of aggregate from chemical bonds to legal ties, from atomic forces to corporate bodies, from physiological to political assemblies. But this is precisely the point that this alternative branch of social theory wishes to make as all those heterogeneous elements *might be* assembled anew in some given state of affairs. Far from being a mind-boggling hypothesis, this is on the contrary the most common experience we have in encountering the puzzling face of the

³ I will use the expression 'society or other social aggregates' to cover the range of solutions given to what I call below the 'first source of uncertainty' and that deals with the nature of social groups. I am not aiming especially here at the 'holist' definitions since, as we shall see, the 'individualist' or the 'biological' definitions are just as valid. See p. 27.

social. A new vaccine is being marketed, a new job description is offered, a new political movement is being created, a new planetary system is discovered, a new law is voted, a new catastrophe occurs. In each instance, we have to reshuffle our conceptions of what was associated together because the previous definition has been made somewhat irrelevant. We are no longer sure about what 'we' means; we seem to be bound by 'ties' that don't look like regular social ties.

The ever shrinking meaning of social

There is a clear etymological trend in the successive variations of the 'social' word family (Strum and Latour 1987). It goes from the most general to the most superficial. The etymology of the word 'social' is also instructive. The root is *seq-*, *sequi* and the first meaning is 'to follow'. The Latin *socius* denotes a companion, an associate. From the different languages, the historical genealogy of the word 'social' is construed first as following someone, then enrolling and allying, and, lastly, having something in common. The next meaning of social is to have a share in a commercial undertaking. 'Social' as in the social contract is Rousseau's invention.⁴ 'Social' as in social problems, the social question, is a nineteenth-century innovation. Parallel words like 'sociable' refer to skills enabling individuals to live politely in society. As one can see from the drifting of the word, the meaning of social shrinks as time passes. Starting with a definition which is *coextensive* with all associations, we now have, in common parlance, a usage that is limited to what is left *after* politics, biology, economics, law, psychology, management, technology, etc., have taken their own parts of the associations.

Because of this constant shrinking of meaning (social contract, social question, social workers), we tend to limit the social to humans and modern societies, forgetting that the domain of the social is much more extensive than that. De Candolle was the first person to create scientometrics—the use of statistics to measure the activity of science—and, like his father, a *plant* sociologist (Candolle 1873/1987). For him corals, baboons, trees, bees, ants, and whales are also social. This extended meaning of social has been well recognized by socio-biology (Wilson 1975). Unfortunately, this enterprise has only confirmed social scientists' worst fears about extending the meaning of social. It's perfectly possible, however, to retain the extension without believing much in the very restricted definition of agency given to organisms in many socio-biological panoramas.

Thus, the overall project of what we are supposed to do together is thrown into doubt. The sense of belonging has entered a crisis. But to register this feeling of crisis and to follow these new connections, another notion of social has to be devised. It has to be *much wider* than what is usually called by that name, yet *strictly limited* to the tracing of new associations and to the designing of their assemblages. This is the reason why I am going to define the social not as a special domain, a specific realm, or a particular sort of thing, but only as a very peculiar movement of re-association and reassembling.

In such a view, law, for instance, should not be seen as what should be explained by 'social structure' in addition to its inner logic; on the contrary, its inner logic may explain some features of what makes an association last longer and extend wider. Without the ability of legal precedents to draw connections between a case and a general rule, what would we know about putting some matter 'into a larger context'?⁴ Science does not have to be replaced by its 'social framework', which is 'shaped by social forces' as well as its own objectivity, because its objects are themselves dislocating any given context through the foreign elements research laboratories are associating together in unpredictable ways. Those quarantined because of the SARS virus painfully learned that they could no longer 'associate' with parents and partners in the same way because of the mutation of this little bug whose existence has been revealed by the vast institution of epidemiology and virology.⁵ Religion does not have to be 'accounted for' by social forces because in its very definition—indeed, in its very name—it links together entities which are not part of the social order. Since the days of Antigone, everyone knows what it means to be put into motion by orders from gods that are irreducible to politicians like Creon. Organizations do not have to be placed into a 'wider social frame' since they themselves give a very practical meaning to what it means to be nested into a 'wider' set of affairs. After all, which air traveler would know the gate to go to without looking anxiously and repeatedly at the number printed on her boarding pass and circled in red by an airline attendant? It might be vacuous to reveal behind the superficial chats of politicians the 'dark hidden forces of society' at work, since without those very speeches a large part of what we understand to be part of a group will be lost. Without the contradictory

⁴ Patricia Ewick and Susan S Silbey (1998), *The Common Place of Law* and Silbey's contribution to Bruno Latour and Peter Weibel (2005), *Making Things Public: Atmospheres of Democracy*.

⁵ Although the study of scientific practice has provided the main impetus for this alternative definition of the social, it will be tackled only later when the fourth uncertainty has been defined, see p. 87.

spiels of the warring parties in Iraq, who in the 'occupied' or 'liberated' Baghdad will know how to recognize friend from foe?

And the same is true for all other domains.⁶ Whereas, in the first approach, every activity—law, science, technology, religion, organization, politics, management, etc.—could be related to and explained by the same social aggregates *behind* all of them, in the second version of sociology there exists *nothing* behind those activities even though they might be linked in a way that does produce a society—or *doesn't* produce one. Such is the crucial point of departure between the two versions. To be social is no longer a safe and unproblematic property, it is a movement that may fail to trace any new connection and may fail to redesign any *well-formed* assemblage. As we are going to learn throughout this book, after having rendered many useful services in an earlier period, what is called 'social explanation' has become a counter-productive way to *interrupt* the movement of associations instead of resuming it.

According to the second approach, adherents of the first have simply confused what they should explain with the explanation. They begin with society or other social aggregates, whereas one should end with them. They believed the social to be made essentially of social ties, whereas associations are made of ties which are themselves non-social. They imagined that sociology is limited to a specific domain, whereas sociologists should travel wherever new heterogeneous associations are made. They believed the social to be always already there at their disposal, whereas the social is not a type of thing either visible or to be postulated. It is visible only by the traces it leaves (under trials) when a new association is being produced between elements which themselves are in no way 'social'. They insisted that we were already held by the force of some society when our political future resides in the task of deciding what binds us all together. In brief, the second school claims to *resume* the work of connection and collection that was abruptly interrupted by the first. It is to help the interested enquirers in *reassembling* the social that this book has been written.

In the course of the book we will learn to distinguish the standard sociology of the social from a more radical subfamily which I will call

⁶ We will see only in Part II, p. 238, how to reformulate this opposition in a more subtle way than an inversion of cause and effect.

⁷ For the distinction between critical sociology and sociology of critique, see Luc Boltanski and Laurent Thévenot (forthcoming) *On Justification*; Luc Boltanski and Laurent Thévenot (1999), 'The Sociology of Critical Capacity'; and especially Luc Boltanski (1990), *L'amour et la justice comme compétences*. If I find it necessary to establish some continuity with the sociology of the social, I will have to be more confrontational with critical sociology and its 'illusion of an illusion'.

critical sociology.⁷ This last branch will be defined by the following three traits: it doesn't only *limit* itself to the social but *replaces* the object to be studied by another matter made of social relations; it claims that this substitution is unbearable for the social actors who *need* to live under the illusion that there is something 'other' than social there; and it considers that the actors' objections to their social explanations offer the best *proof* that those explanations are right.

To clarify, I will call the first approach 'sociology of the social' and the second 'sociology of associations' (I wish I could use 'associology'). I know this is very unfair to the many nuances of the social sciences I have thus lumped together, but this is acceptable for an introduction which has to be very precise on the unfamiliar arguments it chooses to describe as it sketches the well-known terrain. I may be forgiven for this roughness because there exist many excellent introductions for the sociology of the social but none, to my knowledge, for this small subfield of social theory⁸ that has been called—by the way, what is it to be called? Alas, the historical name is 'actor-network-theory' a name that is so awkward, so confusing, so meaningless that it deserves to be kept. If the author, for instance, of a travel guide is free to propose new comments on the land he has chosen to present, he is certainly not free to change its most common name since the easiest signpost is the best—after all, the origin of the word 'America' is even more awkward. I was ready to drop this label for more elaborate ones like 'sociology of translation', 'actant-rhizome ontology', 'sociology of innovation', and so on, until someone pointed out to me that the acronym A.N.T. was perfectly fit for a blind, myopic, workaholic, trail-sniffing, and collective traveler. An ant writing for other ants, this fits my project very well!⁹ Ideally, the word *sociology* should work best, but it cannot be used before its two components—what is social and what is a science—have been somewhat revamped. As this book unfolds, I will use it more and more often though, reserving the expression 'sociology of the social' to designate the repertoire to which other social scientists, in my view, limit themselves too readily.

⁸ A recent guide is presented in John Law (2004) *After Method: Mess in Social Science Research*. Andrew Barry (2001), *Political Machines. Governing a Technological Society* and Anne-Marie Mol (2003), *The Body Multiple: Ontology in Medical Practice (Science and Cultural Theory)* may also be taken as a good introduction along with Bruno Latour (1996), *Aramis or the Love of Technology*.

⁹ I have to apologize for taking the exact opposite position here as the one taken in Bruno Latour (1999c), 'On Recalling ANT'. Whereas at the time I criticized all the elements of his horrendous expression, including the hyphen, I will now defend all of them, *including* the hyphen!

How to find one's way in the literature under the heading Actor-Network-Theory

Most of the relevant bibliography can be found on the excellent website 'the Actor Network Resource' maintained by John Law.¹⁰ The origin of this approach can be found in the need for a new social theory adjusted to science and technology studies (Callon and Latour 1981). But it started in earnest with three documents (Latour 1988b; Callon 1986; Law 1986b). It was at this point that non-humans—microbes, scallops, rocks, and ships—presented themselves to social theory in a new way. As I will explain on p. 87 when reviewing the fourth uncertainty, it was the first time for me that the objects of science and technology had become, so to speak, social-compatible. The philosophical foundation of this argument was presented in the second part of (Latour 1988a) although in a form that made it difficult to grasp.

Since then it has moved in many directions, being reviewed and criticized by many papers listed on Law's website. Although there is no clear litmus test for ANT membership, some ad hoc and make-shift ones may be devised. Needless to say, this interpretation of ANT represents only my view. This book does not aim at a more collective presentation, only at a more systematic one. Here are some of the tests that I have found most useful.

One of them is the precise role granted to non-humans. They have to be *actors* (see the definition on p. 64) and not simply the hapless bearers of symbolic projection. But this activity should not be the type of agency associated up to now with matters of fact or natural objects. So if an account employs either a symbolic or a naturalist type of causality, there is no reason to include it in the ANT corpus even though it might claim to be. Conversely, any study that gives non-humans a type of agency that is more open than the traditional natural causality—but more efficient than the symbolic one—can be part of our corpus, even though some of the authors would not wish to be associated in any way with this approach. For instance, a biological book (Kupiec and Sonigo 2000) could pertain to ANT because of the new active role given to the gene.

Another test is to check which direction the explanation is going in. Is the list of what is social in the end the same limited repertoire that has been used to explain (away) most of the elements? If the social remains stable and is used to explain a state of affairs, it's not ANT. For instance, no matter how enlightening it has been for all of us, the Social Shaping of Technology (Bijker 1995) would not be part

¹⁰ See <http://www.lancs.ac.uk/FSS/sociology/css/antres/antres.htm>.

of the corpus since the social is kept stable all along and accounts for the shape of technological change. But McNeill (1976), although he is in no way an ANT author, would qualify for inclusion, since what is to be associated is being modified by the inclusion of rats, viruses, and microbes into the definition of what is to be 'collected' in an empire. In this way, a book like Cronon's (1991) is certainly a masterpiece of ANT because no hidden social force is added to explain the progressive composition of the metropolis itself. The same would be true of the work done in distributed cognition (Hutchins 1995). This is also what has made much of the history of science and technology important for our program, and why sociology of art has been a continuous companion, especially through the influence of Hennion (1993).

A third and more difficult test would be to check whether a study aims at reassembling the social or still insists on dispersion and deconstruction. ANT has been confused with a postmodern emphasis on the critique of the 'Great narratives' and 'Eurocentric' or 'hegemonic' standpoint. This is, however, a very misleading view. Dispersion, destruction, and deconstruction are not the goals to be achieved but what needs to be overcome. It's much more important to check what are the new institutions, procedures, and concepts able to collect and to reconnect the social (Callon et al. 2001; Latour 2004b).

It's true that in most situations resorting to the sociology of the social is not only reasonable but also indispensable, since it offers convenient shorthand to designate all the ingredients already *accepted* in the collective realm. It would be silly as well as pedantic to abstain from using notions like 'IBM', 'France', 'Maori culture', 'upward mobility', 'totalitarianism', 'socialization', 'lower-middle class', 'political context', 'social capital', 'downsizing', 'social construction', 'individual agent', 'unconscious drives', 'peer pressure', etc. But in situations where innovations proliferate, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates, the sociology of the social is no longer able to trace actors' new associations. At this point, the last thing to do would be to limit in advance the shape, size, heterogeneity, and combination of associations. To the convenient shorthand of the social, one has to substitute the painful and costly longhand of its associations. The duties of the social scientist mutate accordingly: it is no longer enough to limit actors to the role of informers offering cases of some well-known types. You have to grant them back the ability to make up their own theories of what the social is made of. Your task is no longer to impose some order, to limit

the range of acceptable entities, to teach actors what they are, or to add some reflexivity to their blind practice. Using a slogan from ANT, you have 'to follow the actors themselves', that is try to catch up with their often wild innovations in order to learn from them what the collective existence has become in their hands, which methods they have elaborated to make it fit together, which accounts could best define the new associations that they have been forced to establish. If the sociology of the social works fine with what has been already assembled, it does not work so well to collect anew the participants in what is not—*not yet*—a sort of social realm.

A more extreme way of relating the two schools is to borrow a somewhat tricky parallel from the history of physics and to say that the sociology of the social remains 'pre-relativist', while our sociology has to be fully 'relativist'. In most ordinary cases, for instance situations that change slowly, the pre-relativist framework is perfectly fine and any fixed frame of reference can register action without too much deformation. But as soon as things accelerate, innovations proliferate, and entities are multiplied, one then has an absolutist framework generating data that becomes hopelessly messed up. This is when a relativistic solution has to be devised in order to remain able to move between frames of reference and to regain some sort of commensurability between traces coming from frames traveling at very different speeds and acceleration. Since relativity theory is a well-known example of a major shift in our mental apparatus triggered by very basic questions, it can be used as a nice parallel for the ways in which the sociology of associations reverses and generalizes the sociology of the social.

In what follows I am not interested in refutation—proving that the other social theories are wrong—but in proposition. How far can one go by suspending the common sense hypothesis that the existence of a social realm offers a legitimate frame of reference for the social sciences?¹¹ If physicists at the beginning of the previous century were able to do away with the common sense solution of an absolutely rigid and indefinitely plastic ether, can sociologists discover new traveling possibilities by abandoning the notion of a social substance as a 'superfluous hypothesis'? This position is so marginal, its chance of success so slim, that I see no reason to be fair and thorough with the perfectly reasonable alternatives that could, at any point, smash it into pieces. So, I will be opinionated and often partial in order to demon-

¹¹ If my treatment of the sociology of the social seems harsh and if I am truly obnoxious with critical sociology, this is only provisional. We will learn in due time how to retrieve what was correct in their original intuitions. If the key notion of standards (Part II, p. 221) allows us to pay full justice to the sociology of the social, critical sociology will have to wait, I am afraid, until the Conclusion when the question of political relevance will be tackled.

strate clearly the contrast between the two viewpoints. In exchange for this breach of fairness, I will try to be as coherent as possible in drawing the most extreme conclusions from the position I have chosen to experiment with. My test will be to see how many new questions can be brought to light by sticking firmly, even blindly, to all the obligations that this new departure point is forcing us to obey. The final test will be to check, at the end of this book, if the sociology of associations has been able to take up the relay of the sociology of the social by following different types of new and more active connections, and if it has been able to inherit all that was legitimate in the ambition of a science of the social. As usual, the result of whether this has been successful or not will be up to the reader.

For those who like to trace a discipline to some venerable ancestor, it is worth noting that this distinction between two contrasted ways of understanding the duties of social science is nothing new. It was already in place at the very beginning of the discipline (at least in France) in the early dispute between the elder Gabriel Tarde and Emile Durkheim, the winner.¹² Tarde always complained that Durkheim had abandoned the task of explaining society by confusing cause and effect, replacing the understanding of the social link with a political project aimed at social engineering. Against his younger challenger, he vigorously maintained that the social was not a special domain of reality but a principle of connections; that there was no reason to separate 'the social' from other associations like biological organisms or even atoms; that no break with philosophy, and especially metaphysics, was necessary in order to become a social science; that sociology was in effect a kind of inter-psychology;¹³ that the study of innovation, and especially science and technology, was the growth area of social theory; and that economics had to be remade from top to bottom instead of being used as a vague metaphor to describe the calculation of interests. Above all, he considered the social as a circulating fluid that should be followed by new methods and not a specific type of organism. We don't need to accept all of Tarde's idiosyncrasies—and there are many—but in the gallery of portraits of eminent predecessors he is one of the very few, along with Harold Garfinkel, who believed sociology could be a science accounting for how society is held together, instead of using society to explain something else or to help solve one of the political questions of the time. That Tarde was

¹² The only extensive introduction to Tarde in English is Gabriel Tarde and Terry C. Clark (1969), *On Communication and Social Influence*. For a more recent view see Bruno Latour (2002), 'Gabriel Tarde and the End of the Social'. An older translation is available online of Gabriel Tarde (1899/2000), *Social Laws: An Outline of Sociology*.

¹³ By opposition to *intra-psychology* on which he was almost completely silent, see Gabriel Tarde (1895/1999), *Monadologie et sociologie*.

the range of acceptable entities, to teach actors what they are, or to add some reflexivity to their blind practice. Using a slogan from ANT, you have 'to follow the actors themselves', that is try to catch up with their often wild innovations in order to learn from them what the collective existence has become in their hands, which methods they have elaborated to make it fit together, which accounts could best define the new associations that they have been forced to establish. If the sociology of the social works fine with what has been already assembled, it does not work so well to collect anew the participants in what is not—*not yet*—a sort of social realm.

A more extreme way of relating the two schools is to borrow a somewhat tricky parallel from the history of physics and to say that the sociology of the social remains 'pre-relativist', while our sociology has to be fully 'relativist'. In most ordinary cases, for instance situations that change slowly, the pre-relativist framework is perfectly fine and any fixed frame of reference can register action without too much deformation. But as soon as things accelerate, innovations proliferate, and entities are multiplied, one then has an absolutist framework generating data that becomes hopelessly messed up. This is when a relativistic solution has to be devised in order to remain able to move between frames of reference and to regain some sort of commensurability between traces coming from frames traveling at very different speeds and acceleration. Since relativity theory is a well-known example of a major shift in our mental apparatus triggered by very basic questions, it can be used as a nice parallel for the ways in which the sociology of associations reverses and generalizes the sociology of the social.

In what follows I am not interested in refutation—proving that the other social theories are wrong—but in proposition. How far can one go by suspending the common sense hypothesis that the existence of a social realm offers a legitimate frame of reference for the social sciences?¹¹ If physicists at the beginning of the previous century were able to do away with the common sense solution of an absolutely rigid and indefinitely plastic ether, can sociologists discover new traveling possibilities by abandoning the notion of a social substance as a 'superfluous hypothesis'? This position is so marginal, its chance of success so slim, that I see no reason to be fair and thorough with the perfectly reasonable alternatives that could, at any point, smash it into pieces. So, I will be opinionated and often partial in order to demon-

¹¹ If my treatment of the sociology of the social seems harsh and if I am truly obnoxious with critical sociology, this is only provisional. We will learn in due time how to retrieve what was correct in their original intuitions. If the key notion of standards (Part II, p. 221) allows us to pay full justice to the sociology of the social, critical sociology will have to wait, I am afraid, until the Conclusion when the question of political relevance will be tackled.

strate clearly the contrast between the two viewpoints. In exchange for this breach of fairness, I will try to be as coherent as possible in drawing the most extreme conclusions from the position I have chosen to experiment with. My test will be to see how many new questions can be brought to light by sticking firmly, even blindly, to all the obligations that this new departure point is forcing us to obey. The final test will be to check, at the end of this book, if the sociology of associations has been able to take up the relay of the sociology of the social by following different types of new and more active connections, and if it has been able to inherit all that was legitimate in the ambition of a science of the social. As usual, the result of whether this has been successful or not will be up to the reader.

For those who like to trace a discipline to some venerable ancestor, it is worth noting that this distinction between two contrasted ways of understanding the duties of social science is nothing new. It was already in place at the very beginning of the discipline (at least in France) in the early dispute between the elder Gabriel Tarde and Emile Durkheim, the winner.¹² Tarde always complained that Durkheim had abandoned the task of explaining society by confusing cause and effect, replacing the understanding of the social link with a political project aimed at social engineering. Against his younger challenger, he vigorously maintained that the social was not a special domain of reality but a principle of connections; that there was no reason to separate 'the social' from other associations like biological organisms or even atoms; that no break with philosophy, and especially metaphysics, was necessary in order to become a social science; that sociology was in effect a kind of inter-psychology;¹³ that the study of innovation, and especially science and technology, was the growth area of social theory; and that economics had to be remade from top to bottom instead of being used as a vague metaphor to describe the calculation of interests. Above all, he considered the social as a circulating fluid that should be followed by new methods and not a specific type of organism. We don't need to accept all of Tarde's idiosyncrasies—and there are many—but in the gallery of portraits of eminent predecessors he is one of the very few, along with Harold Garfinkel, who believed sociology could be a science accounting for how society is held together, instead of using society to explain something else or to help solve one of the political questions of the time. That Tarde was

¹² The only extensive introduction to Tarde in English is Gabriel Tarde and Terry C. Clark (1969), *On Communication and Social Influence*. For a more recent view see Bruno Latour (2002), 'Gabriel Tarde and the End of the Social'. An older translation is available online of Gabriel Tarde (1899/2000), *Social Laws: An Outline of Sociology*.

¹³ By opposition to *intra-psychology* on which he was almost completely silent, see Gabriel Tarde (1895/1999), *Monadologie et sociologie*.

utterly defeated by sociologists of the social to the point of being squeezed into a ghostly existence for a century does not prove that he was wrong. On the contrary, it simply makes this book even more necessary. I am convinced that if sociology had inherited more from Tarde (not to mention Comte, Spencer, Durkheim, and Weber), it could have been an even more relevant discipline. It still has the resources to become so as we will see at the end of this book. The two traditions can easily be reconciled, the second being simply the resumption of the task that the first believed was too quickly achieved. The factors gathered in the past under the label of a 'social domain' are simply some of the elements to be assembled in the future in what I will call not a society but a *collective*.

Gabriel Tarde An alternative precursor for an alternative social theory

Gabriel Tarde (1843–1904) was a judge and then a self-taught criminologist and became the predecessor of Bergson at the Collège de France.

A few quotes will give an idea of the strong contrast between the two lines of thought. Here is Tarde's definition of society:

'But this means that every thing is a society and that all things are societies. And it is quite remarkable that science, by a logical sequence of its earlier movements, tends to strangely generalize the notion of society. It speaks of cellular societies, why not of atomic societies? Not to mention societies of stars, solar systems. All of the sciences seem fated to become branches of sociology.' (Tarde 1999: 58)

Most interestingly, Tarde was head of a statistical institute for many years and always believed simultaneously in monographies and quantitative data, but he disagreed with Durkheim on the type of *quantum* sociology had to trace.

Generalizing Leibniz's monads, but without a God, Tarde's projects reverses the link between micro and macro:

'In a multitude of forms, though on a smaller scale, the same error always comes to light, namely, the error of believing that, in order to see a gradual dawn of regularity, order, and logic in social phenomena, we must go outside of the details, which are essentially irregular, and rise high enough to obtain a panoramic view of the general effect; that the source and foundation of every social coordination is some general fact from which it descends gradually to particular facts, though always diminishing in strength; in short, that man acts but a law of evolution guides him. I hold the contrary, in a certain sense.' (Tarde 1899/2000: 75)

This explains the radical opposition with Durkheim, a generation younger than Tarde:

'This conception is, in fact, almost the exact opposite of the unilinear evolutionists' notion and of M. Durkheim's. Instead of explaining everything by the supposed supremacy of a law of evolution, which compels collective phenomena to reproduce and repeat themselves indefinitely in a certain order rather than explaining lesser facts by greater, and the part by the whole—I explain collective resemblances of the whole by the massing together of minute elementary acts—the greater by the lesser and the whole by the part. This way of regarding phenomena is destined to produce a transformation in sociology similar to that brought about in mathematics by the introduction of infinitesimal calculus.' (Tarde 1899/2000: 35)

The reason why Tarde may pass for an early ancestor of ANT is that his best example of a social connection is always history and sociology of science:

'As regards the structure of science, probably the most imposing of human edifices, there is no possible question. It was built in the full light of history, and we can follow its development almost from the very outset down to our own day. . . . Everything here originates in the individual, not only the materials but the general design of the whole and the detail sketches as well. Everything, including what is now diffused among all cultured minds and taught even in the primary school, began as the secret of some single mind, whence a little flame, faint and flickering, sent forth its rays, at first only within a narrow compass, and even there encountering many obstructions, but, growing brighter as it spread further, it at length became a brilliant illumination. Now, if it seems plainly evident that science was thus constructed, it is no less true that the construction of every dogma, legal code, government, or economic régime was effected in the same manner; and if any doubt be possible with respect to language and ethics, because the obscurity of their origin and the slowness of their transformations remove them from observation through the greater part of their course, is it not highly probable that their evolution followed the same path?' (Tarde 1899/2000: 84–5)

The entities that Tarde is dealing with are not people but innovations, quanta of change that have a life of their own:

'This is why any social production having some marked characteristics, be it an industrial good, a verse, a formula, a political idea which has appeared one day somewhere in the corner of a brain, dreams like Alexander of conquering the world, tries to multiply itself by thousands and millions of copies in every place where there exists human beings and will never stop except if it is kept in check by some rival production as ambitious as itself.' (Tarde 1895/1999: 96)

What is most useful for ANT is that Tarde does not make the social science break away from philosophy or even metaphysics:

'To exist is to differ; difference, in one sense, is the substantial side of things, what they have most in common and what makes them most different. One has to start from this difference and to abstain from trying

to explain it, especially by starting with identity, as so many persons wrongly do. Because identity is a **minimum** and, hence, a type of difference, and a very rare type at that, in the same way as rest is a type of movement and the circle a type of ellipse. To begin with some primordial identity implies at the origin a prodigiously unlikely singularity, or else the obscure mystery of one simple being then dividing for no special reason.' (Tarde 1895/1999: 73)

This book on how to use ANT for reassembling social connections is organized in three parts corresponding to the three duties that the sociology of the social has conflated for reasons that are no longer justified:

How to *deploy* the many controversies about associations without restricting in advance the social to a specific domain?

How to render fully traceable the means allowing actors to *stabilize* those controversies?

Through which *procedures* is it possible to reassemble the social not in a society but in a collective?

In the first part, I will show why we should not limit in advance the sort of beings populating the social world. Social sciences have become much too timid in deploying the sheer complexity of the associations they have encountered.¹⁴ I will argue that it's possible to feed, so to speak, off controversies and learn how to become good relativists—surely an indispensable preparation before venturing into new territory. In the second part, I will show how it's possible to render social connections traceable by following the work done to stabilize the controversies followed in the first part. Borrowing a metaphor from cartography, I could say that ANT has tried to render the social world as *flat* as possible in order to ensure that the establishment of any new link is clearly visible. Finally, I will conclude by showing why the task of assembling the collective is worth pursuing, but only after the shortcut of society and 'social explanation' has been abandoned. If it's true that the views of society offered by the sociologists of the social were mainly a way of insuring civil peace when modernism was under way,¹⁵ what sort of collective life and what sort of knowledge is to be gathered by sociologists of associations once moderniz-

¹⁴ I have left aside in this book the question of quantitative sociology not because I believe more in qualitative data, but because the very definition of which *quantum* to tally is at stake in the different definitions of the social vector I am going to follow here.

¹⁵ The first instance of the words 'sociology' and 'social sciences' are found in the famous pamphlet *Qu'est-ce que le Tiers-Etat?* by Emmanuel Joseph Sieyès (1748–1836) to designate a fusion of all the 'cameral sciences' in an art of government, see Frédéric Audren (forthcoming), 'Les juristes et les sociologues'.

ing has been thrown into doubt while the task of finding the ways to cohabit remains more important than ever?

In some ways this book resembles a travel guide through a terrain that is at once completely banal—it's nothing but the social world we are used to—and completely exotic—we will have to learn how to slow down at each step. If earnest scholars do not find it dignifying to compare an introduction of a science to a travel guide, be they kindly reminded that 'where to travel' and 'what is worth seeing there' is nothing but a way of saying in plain English what is usually said under the pompous Greek name of 'method' or, even worse, 'methodology'. The advantage of a travel book approach over a 'discourse on method' is that it cannot be confused with the territory on which it simply overlays. A guide can be put to use as well as forgotten, placed in a backpack, stained with grease and coffee, scribbled all over, its pages torn apart to light a fire under a barbecue. In brief, it offers suggestions rather than imposing itself on the reader. That said, this is not a coffee table book offering glossy views of the landscape to the eyes of the visitor too lazy to travel. It is directed at practitioners as a how-to book, helping them to find their bearings *once* they are bogged down in the territory. For others, I am afraid it will remain totally opaque, since the social ties to be traced will never resemble those they have been trained to follow.