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BELIEFS*

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INTRODUCTION

SOCIETY consists of people doing things, and in order to understand how social reality works we have to explain social action. This is true not only for understanding micro-sociological issues, but also complex macro-sociological phenomena such as capitalism and globalization, which ultimately consist of people doing things in certain ways. Action, as it is understood in this chapter, is what people do *intentionally*, in contrast to behavior, which is what they do *unintentionally* (see Hedström 2005: 38). In order to explain action, which by definition is to provide an intentional explanation, we need to specify the future state the action was intended to bring about (Elster 1983*a*). In order to do this we have to take people's desires and beliefs into account.

Of particular interest for the explanation of action are beliefs about the causal relationship between goals and the means of reaching these goals (cf. Elster 1983*a*). If an actor desires *y*, we may assume that s/he will act in a way that s/he believes will lead to *y*, for instance by doing *x*, in particular if *x* is seen as satisfyingly effective in reaching *y* compared to other action alternatives s/he can think of, and in particular if the actor believes that *x* is not interfering with fundamental values shared within his or her social surround. Hence, we may assume that—given their desires and beliefs—people act intentionally and with reason, if by reason we mean the 'human

process of seeking, processing, and drawing inferences' (Lupia et al. 2000: 1–2; cf. Hedström 2005: 61).[1]

However, as Elster emphasized (1983a: 70), since people's 'beliefs and desires are themselves in need of explanation … intentional explanation is far from a rock-bottom analysis'. With this in mind, the aim of this chapter is to contribute to a better understanding of belief formation.

If beliefs—which can be defined as propositions about the world in which a person is at least minimally confident (see Kruglanski 1989; Hedström 2005: 39)[2]—could always be inferred from people's situations in a perfect way, that is if beliefs were always congruent with reality, belief-formation processes would be transparent and of little interest to explanatory sociology. On the other hand, if beliefs were always incorrect and flawed in a uniquely idiosyncratic way, beliefs would be of little interest to analytical sociology because what needs to be explained is not the concrete actions of single individuals but rather the typical actions of typical individuals or why certain groups or categories of people act in certain ways. As will be demonstrated below, beliefs are sometimes biased and flawed, but these biases are not always random and unpredictable. This fact points to the need to identify patterns in belief-formation processes and, by doing this, to stake out a middle ground between the universalistic ambitions of much rational-choice theory, which may be analytically useful but sometimes too unrealistic to be sociologically meaningful, and subjectivist approaches, which are of scant analytical value. Because of the patterned character of belief biases, it is also unlikely that deviations from well-founded beliefs (derived from a strong assumption about rationality and perfect knowledge) are like random terms that cancel in the aggregate, as has often been proposed from Stinchcombe (1968) and onwards.

Consequently, this chapter will focus on common, relatively universal mechanisms of belief formation. We may analytically distinguish between six principal, albeit slightly overlapping, ways in which beliefs are formed: (1) by observation; (2) by relying on information received from others (including school teachers and the mass media, etc.), and here we also include socialization; (3) by inferences that go beyond direct observation, in using inductive strategies; (4) by deduction from other beliefs; (5) by adapting beliefs to fit desires (e.g. wishful thinking); and (6) by dissonance-reducing mechanisms, such as when beliefs are modified or rationalized to bring them into line with one's action or other beliefs (see Fishbein and Ajzen 1975; Holland et al 1986: 22; Elster 1979, 1983b; Bar-Tal 1990; Festinger 1957). Often, however, beliefs are formed by combinations of these mechanisms. In the following sections I will further discuss most of these different types of belief formation.

Much of the following discussion will be set in a socio-cognitive framework. This framework is based on the assumption that individuals are motivated by an 'effort after meaning' (Bartlett 1995: 44); they are 'meaning-seeking' beings in the sense that they strive to obtain cognitive closure. Not being able to understand what is happening in one's surroud—or what is likely to happen in the near future—results in negative emotions such as stress and frustration, something that most people try

to avoid. As a consequence of this inherent effort after meaning, people inevitably, and usually unconsciously, form beliefs in order to obtain cognitive closure.

It should moreover be emphasized that individuals are socially situated, and that the conceptual schemes, knowledge, and information that shape people's views of the world are socially mediated. Only by specifying the situations in which people are embedded may we fully assess the reasons for their beliefs and understand group-specific uniformities in belief formation.

In addition, it should be noted that although beliefs are a fundamental component of intentional explanations of action, beliefs are themselves usually the result of unintentional—and often even unconscious—processes (see Hedström 2005: 43). Within the socio-cognitive framework in which this chapter is largely set, it is assumed that people are not only meaning seekers but also 'cognitive misers'; that is, motivated by a drive to save time and cognitive energy. This often leads them to use cognitive strategies that are vital for belief formation—and to rely on ready-made beliefs—without much reflection. In fact, people often do not become conscious of the beliefs they hold until they come to perceive doubt about their correctness and/or desirability. From a person's own perspective, all beliefs can be placed on a continuum ranging from absolute certainty to profound doubt (cf. Boudon 1989: 104), and the more certain people are about a belief's correctness the less likely they are to change the belief, or to even reflect on that belief and on possible alternative beliefs. Hence, doubt is one of the principal driving forces of belief change (cf. Peirce 1957a); unless doubt is triggered, few people will change beliefs. This chapter, therefore, will try to answer the question why people sometimes tend not to doubt dubious or false beliefs.

The remainder of this chapter will be structured in the following way. In Section 4.1 I will discuss the role of categorization in belief formation, something that is important for understanding how beliefs are formed both by observations and as a result of inferences. In the following two sections I will discuss two other fundamental mechanisms of belief formation by inferences: inductive reasoning and analogism. In Section 4.4 I will discuss the conditions under which people's beliefs are particularly likely to be influenced by others, and Section 4.5 will discuss the mechanism of dissonance reduction.

4.1. THE ROLE OF CATEGORIZATION IN BELIEF FORMATION

As noted above, observations are one of the ways in which beliefs are formed. Observations are also an important reason for group-specific uniformities in belief

formation. People who share observations—who have similar experiences—are more likely to share beliefs (see Rydgren 2008). However, it is important to emphasize that observations are often the result of a complex process, not merely mimetic transcripts of reality. Within the socio-cognitive framework of this chapter, it is assumed that there are no 'pure' observations; in order to make sense of the 'blooming, buzzing confusion' of raw experience (James 1890) people have to use the universal mechanism of categorization. Hence, the basic assumption is that reality is usually too complex to be perceived and apprehended without the help of categories. Categorization is a linguistic tool—we categorize by labelling—and we are largely unconscious of using categorization schemes that are not of our own choosing, but are by-products of joining, or being born into, a particular language or linguistic culture or subculture. This implies that our perceptions of the world are to some extent dependent on a priori knowledge structures, and that perceptions are always to some extent simplifications of a more complex reality. In a given situation, for example, few of us see two hundred individual flying objects; we just see birds—or maybe starlings, sparrows, and crows, if we are moderately interested in birds. Granted, there are different levels of categorization, where some are very broad and crude and some allow for subtle distinctions, but, because of our limited cognitive capacity, none of us uses fine-grained categorization levels for all domains and in all situations, although we may assume that there is considerable individual variation (see Brown 1958; Holland et al. 1986: 184; McGarty 1999).

However, it is not always evident how complex reality should be categorized. Sometimes a given object can be fitted into different categories. In the duck-rabbit figure, to take a well-known example, some people immediately see a duck where other people immediately see a rabbit. It usually takes more effort, though, to see it as a duck *and* a rabbit (see Jastrow 1900; cf. Wittgenstein 1997). Being cognitive misers, people often fail to perceive the complexity of particular observations, and risk ending up with a one-sided understanding around which beliefs are formed. It also means that two people witnessing the same thing may form very different beliefs around their observations. For reasons discussed below, this is in particular likely for observations of social reality. Let us assume a situation where, in the South Bronx, two young African American men rob an old lady. Whether this event is categorized as a 'race problem', a 'youth problem', an 'urban problem', a 'problem of masculinity', or a 'class problem'—that is, a problem of socioeconomic marginality—is likely to play a large role in how beliefs are formed around the (direct or mediated) observation of this event. In each of these categorizations some particular features of the situation are highlighted, whereas others are de-emphasized. Which categories people choose is partly determined by the context and partly by the disposition of the categorizer. In the former case, some categorizations may be more salient and/or legitimate than others because they are more widely shared by significant others and/or promoted by 'epistemic authorities' (the concept is from Kruglanski 1989 and will be defined below) who 'frame'

the event in certain ways (cf. Chong and Druckman 2007). Framing effects are likely to result from situations of ambiguous categorization; that is, beliefs are strongly influenced by the way the problem is presented by others.[3] In the latter case, the beliefs held a priori by the observer are likely to play a large role, as does 'priming'. If an event 'has occurred very recently which is evocative of a particular categorization then it is likely that subsequent events or situations will also be interpreted in terms of that same category system' (Brown 1995: 66–7; cf. McGarty 1999; ch. 4). Hence, once a particular category has been mobilized in meeting an object, event, situation, or person, further perception and under-standing of the object will partly be dictated by the characteristics of the category (Kahneman and Tversky 1982).

As implied in the discussion above, categorization is not only fundamental for observations, but is also a basic mechanism for inferences. By categorizing object a (of which we know relatively little) as an instance of category A (of which we know relatively much) we very often generalize from the wider class to the instance. Hence, if objects belonging to category A usually share characteristics p, q, and r, we tend to infer that object a also has characteristics p, q, and r. As will be further discussed below, this kind of thinking constitutes the basis for induction and analogisms. Moreover, as argued by Holland et al. (1986: 89), generalizations from categorizations constitute an important type of *abduction*; that is, the tendency when encountering problematic reality to formulate an explanatory hypothesis that explains the problem inductively or deductively (see Peirce 1957b).[4]

How sound the inferences generated by inferential categorization are depends on how accurate our knowledge is of category A, the certitude with which object a is categorized as an instance of category A, how specific and fine-grained category A is, and, relatedly, how heterogeneous it is—that is, if objects belonging to category A share many or only a few characteristics. At best, this way of making inferences through categorization is a parsimonious cognitive mechanism for predicting, rel-atively accurately, unknown characteristics of specific objects (or persons, events, situations, etc.). At worst, however, it restrains people from using more sophisti-cated tools to make inferences, and makes them prone to stereotypical beliefs. There are good reasons to assume that this risk is particularly pronounced with regard to inferences involving social categorizations. In the physical world, according to Nis-bett and Ross (1980: 38–9), it is an approximate truth to say that 'if you've seen one oak tree, you've seen them all'. Here we only need a limited number of properties to define objects as belonging to one category rather than another, and once we have correctly placed an object in the category of oak trees, we can with extremely high probability predict that 'the tree will provide shade and acorns, [and] that it's wood will be hard and burn slowly' (Ibid.). In the social world, however, this is rarely the case. Here the observed properties of an object are less diagnostic and not so sharply delineated. As noted above, there are usually many possible categories into which the object may be placed, and once the categorization has taken place, further

predictions of properties of the categorized object are likely to fail. Hence, in the social world, categorizations should be no more than 'tentative guides for perception and behavior. When they are relied on heavily, there are bound to be inferential errors and misguided actions' (Nisbett and Ross 1980: 8–9; cf. McGarty 1999).

4.2. The role of inductive reasoning in belief formation

When making inferences that go beyond direct observation, people often rely on various inductive strategies. While induction is problematic from a philosophical point of view, human thinking could not do without it (see Boudon 1994: 64). In everyday thinking, inductive strategies very often lead to reasonably satisfying results (seen from a person's own perspective). However, as will be discussed below, sometimes these strategies go awry and lead to incorrect inferences. Yet when people use such well-tried strategies they tend to rely on the results without much reflection, something that may help explain why people sometimes fail to doubt dubious or even false beliefs.

First, even for logically valid reasoning such as *modus ponens* and *modus tollens* the validity of the inferences depends on how well the process of categorization works. And, as discussed above, categorization may sometimes be problematic, in particular concerning objects in the social world. One important problem, identified by Holland et al. (1986: 231), is the tendency to take for granted that 'a property observed in an object is a constant, stable one'. When making inferences about swans being white or not, for instance, it is usually expected that 'a particular swan, once observed to be white, will continue to be white'. However, in particular for social entities and phenomena, such as persons or behavior, it is far from generally the case that properties stay constant—something that may lead to erroneous inferences. Second, people sometimes employ logically invalid inductive strategies. Such strategies often help them make inferences that are 'good enough', or at least better than what would have otherwise been arrived at. However, because they are similar in form to logically valid inductive strategies, people tend to be overconfident about beliefs that result from such inferences. Arguably, the two most common, and important, forms of such logically invalid inductive strategies are the 'affirmation-of-the-consequent induction'; that is,

1. If p, then always q
2. q
   _____
3. Therefore, p

and the 'denying-the-antecedent induction', that is

1. If p, then always q
2. *Not-p*

3. Therefore, *not-q* (Holland et al. 1986: 267).

Whether such logically invalid inductive modes of reasoning turn out to useful or not largely depends on the conditional probability of p|q. Everything else being equal, a high probability of p|q will lead to less erroneous inferences than will be the case with a low probability of p|q. Since the probability of p|q is much higher in Example A than in Example B (below), the conclusion drawn from the line of reasoning in Example A seems more plausible than the inference drawn in Example B:

A:

1. If it is cold (p), people wear a lot of clothes (q).
2. People wear a lot of clothes (q).

3. Therefore, it is cold (p).

B:

1. Pneumonia (p) causes fever (q).
2. I have a fever (q).

3. Therefore, I have pneumonia (p). (See Rydgren 2004.)

Although we cannot be sure that our inferences lead to correct beliefs in the first example (people could, for instance, wear a lot of clothes because it is fashionable), it is a useful guiding principle to look out of the window to see what people are wearing in order to determine whether it is cold out or not. (If fashion dictated a lot of clothes, people would probably have noted it earlier.) Stated differently: based on earlier experiences most people 'know' that the conditional probability of p|q is high. The second example, however, is considerably less certain as a guiding principle because my fever could have been caused by a multitude of other ills. However, since most people have had the opportunity to experience that this is the case, they 'know' that the conditional probability of p|q is low. This is probably why few people draw the conclusion drawn in Example B.

In Examples A and B it is relatively easy to assess the probability of p|q because they involve events and properties that are repetitive. People have a good chance to assess probability over time, and to modify initial misconceptions. As Ayer (1963: 202) has argued, 'in order to estimate the probability that a particular individual possesses a given property, we are to choose as our class of reference, among those to which the individuals belongs, the narrowest class in which the property occurs with an extrapolable frequency'. However, as discussed above, categories

and classes of references—in particular in the social world—are often arbitrary and not so sharply delineated. A given object (or person, event, situation, etc.) can often be placed in a range of different categories, and there are occasionally several 'narrowest reference categories' to choose between. As a result, in many cases people do not know whether the conditional probability of p|q is high or low, in particular in cases where we cannot easily choose between different, equally narrow reference classes, or when the event in question is unique. In such cases people may come to rely on flawed estimations of the conditional probability of p|q, which leads to erroneous inferences and makes them ascribe too much certainty to beliefs that result from such thought processes. Under certain circumstances people may even come to believe inferences similar to the one in Example B (above).

This may be exemplified by the many daycare sex-abuse scandals in the USA in the 1980s and early 1990s (Oberschall 2000). These all began when parents of one or two children suspected that a daycare provider had 'touched' their child; gradually, this developed into accusations of 'dozens of adults victimizing many children in hundreds of acts of oral and anal sex, ritual torture of animals and babies…and killing unspecified babies with knives and guns' (Oberschall 2000: 297–8). There were no eyewitnesses to the abuse, and in addition no physical evidence from medical examinations. Still, not only the parents, but members of the juries, too, believed that the abuse had really taken place. One important reason for this, I would argue, was the lack of prior experience and relevant information, which made it difficult to estimate the conditional probability of p|q. The only 'authorized' information came from the therapists and child-protection workers who were in charge of the interrogation of the children, and who therefore greatly influenced the belief-formation process. The therapists and the child-protection workers presented 'a huge list of "symptoms"' indicating abuse. Everything 'from bed wetting and nightmares to fears and aggressive play, excessive interest in sex, being uncooperative and uncommunicative, spending too much time on the toilet' were all viewed as signs of sexual abuse (Oberschall 2000: 303). To put this into the logical form presented above:

1. If children have been sexually abused (p), they wet their beds (q) *or* have nightmares (r) *or* play aggressively (s), etc.
2. Since my child wets his/her bed (q) *or* has nightmares (r) *or* plays aggressively (s),

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3. s/he has been sexually abused (p).

Since all these symptoms can be caused by a multitude of other things, the fact that the inference drawn from this line of reasoning became significant in the determination of guilt is unacceptable from a logical perspective. Yet this is what happened.

However, in order to fully understand this case we have to take into account the dilemma of choosing between possible Type 1 errors (that is, to believe something is incorrect while it is actually correct) and Type 2 errors (that is, to believe something is correct while it is actually incorrect) (see Rydgren 2004). This dilemma was succinctly formulated by Pascal (1995: 121–5) in his famous passage on 'the wager'. In deciding whether or not to believe in the existence of God, it is according to Pascal a better bet to choose to believe than to disbelieve. If your belief in God's existence turns out to be incorrect, you lose nothing at all, whereas you gain eternal bliss if it turns out to be correct; and if your disbelief in God's existence turns out to be correct you gain nothing at all, whereas you lose everything, by being subjected to eternal damnation, if you erroneously believe that God does not exist. In decision-theoretical terms, therefore, to believe in God is superdominant over disbelieving. This argument has rightly been criticized on many grounds (see Hájek 2004 for a review), but it formulates an important mechanism for how everyday thinking in situations of uncertainty often works (cf. Mackie's discussion (1996) on the 'belief trap', which is essentially the same mechanism). In the example above, which admittedly is trickier than Pascal's wager since it lacks an evident superdominant strategy, the risk of committing a Type 1 error (that is, disbelieving in sexual assaults that actually took place, which might lead to more abuses in the future) might for the people involved—in particular for the parents—have consequences that override the risk of committing a Type 2 error (that is, incorrectly believing that sexual assaults had been committed, and risking condemning an innocent person). Granted, beliefs are only occasionally formed consciously as implied by these examples; most of the time we do not decide to believe what we believe. However, this mechanism may also work unconsciously, sometimes together with the drive to make one's beliefs fit with one's desires, such as in wishful thinking.

4.3. ANALOGISM

Another common and, in fact, indispensable way of making inferences that goes beyond direct observations is to rely on analogical reasoning. Like the 'affirmation-of-the consequent induction' and the 'denying-the-antecedent induction', as discussed above, analogism is invalid from a logical point of view. Yet it is potentially very useful and it often helps people reach better conclusions—around which beliefs are formed—than would otherwise have been arrived at (see Holyoak and Thagard 1999: 7).

We have an analogism when we draw the conclusion from

1. the fact that object A has properties p and q
2. and the observation that object B has the property p

3. that object B also has property q.

Hence, analogism is fundamentally an inference based on categorizations and it may be a relatively parsimonious way for people in ambiguous situations to make sense of what is going on and what to expect in the near future. Analogism may thus be an important mechanism in belief formation. In order to be effective, analogies must follow two criteria. They must concern *significant* and *pertinent* properties that are common to the objects (or persons, situations, events, etc.), and they must not ignore significant or pertinent dissimilarities between the objects (see e.g. Pratkanis and Aronson 2002: 90). The problem, of course, is that it is sometimes difficult to determine which properties are pertinent—in particular with regard to categories in the social world.

Analogism is particularly useful for employing 'knowledge' about the past to understand the present or predict the future (see Rydgren 2007). Such 'knowledge' may consist of beliefs based on one's own earlier observations, or on beliefs received from others. Nevertheless, in situations of uncertainty it is often tempting to rely on 'the lessons of the past' (see Boudon 1989: 105). This is true both of mundane, commonplace decisions and decisions of vital importance. If one does not know much about wine, for instance, and is going to have some friends over for dinner, it is likely that one will follow the line of reasoning that

1. since the bottle I bought last time (A) was a Bordeaux (p) and tasted good (q),
2. there are good reasons to believe that, among all the possible alternatives in the store, bottle B which also is a Bordeaux (p),

3. will taste good as well (q).

Although this analogism is error prone, the likelihood of making sound predictions will probably be higher than would have been the case without any guiding principle. In this case categorization (i.e. that A and B in fact share p) does not cause much of a problem, and it is relatively easy, through practical experience or theoretical learning, to identify additional pertinent properties of wine that will increase the chances of making sound predictions by enabling us to use a narrower reference category (see Rydgren 2004). However, as discussed above, categorization may sometimes cause greater problems, and it is not always obvious which properties are pertinent or not. In such cases, the likelihood of making sound predictions when using the analogism is much lower, and there is often little consensus over which of several possible 'lessons of the past' one should rely on.

After the Iraqi occupation of Kuwait in 1990, for instance, both leading advocates for and against sending American troops to the Gulf based their understanding of the situation—and their predictions about the future—on analogisms. However, whereas those who advocated sending troops relied on the World War II analogism, comparing Saddam Hussein to Hitler and warning of a politics of appeasement (i.e. 'if Chamberlain and others had taken a tough stance against German aggression earlier, the war would not have needed to become as widespread and protracted'), those who were against sending troops to the Gulf relied on the Vietnam War analogy (Schuman and Reiger 1992). As shown by Khong (1992), analogisms of this kind are often used when making decisions of vital importance, even in war situations, although it is not at all evident that they involve all (or even most) pertinent aspects—and pertinent aspects only.

In addition to the problem of categorization, there are a variety of fallacies associated with analogism, of which two will be discussed here (see Rydgren 2007 for further discussion and additional biases). First, there is the problem of overreliance. Because analogisms are often applied to nonrepetitive events, which makes it difficult for people to falsify them within the realms of everyday epistemology, people often rely on analogisms more uncritically than they should. Similarly, although analogical inferences are at best probabilistic, people often make the erroneous inference 'from the fact that A and B are similar in some respect to the false conclusion that they are the same in all respects' (Fischer 1970: 247).

Second, there is the problem of selection bias. For the first step of the analogism—that is, past events with which to compare the present—people tend to select events that are easily available to memory (cf. Khong 1992: 35). In other words, people tend to rely on the *availability heuristic* (Tversky and Kahneman 1982). The availability heuristic is often useful, because people tend to remember significant events better than insignificant ones. However, there are several factors affecting availability that may lead to bias. One important example is the risk of an 'egocentric bias'; that is, the tendency to be insensitive to one's limited knowledge of the world that lies outside one's experiences. Because of their location in the social structure and their lifestyles and personal preferences, people encounter specific but limited slices of the social world—something which 'may funnel unrepresentative evidence or information to them in a thousand different domains' (Nisbett and Ross 1980: 262–3). Another important bias is that vivid information tends to be better remembered and is more accessible than pallid information. Information that is likely to attract and hold our attention because it is emotionally interesting, concrete, and imagery-provoking, and/or proximate in a sensory, temporal, or spatial way may be deemed vivid (Nisbett and Ross 1980: 44–5). This implies that common routine events—which although dull are often highly representative—are forgotten, whereas spectacular, unique, and unexpected events—which are often highly unrepresentative—are easily accessible to memory. A particular type of pallid information that people tend to overlook is null information, about potential events

that did not occur. This not only leads to availability-heuristic biases; more generally it also leads to flawed inferences about causation. To assess the probability that A causes B we should not only take positive cases into account (i.e. those instances in which A is followed by B) but also negative cases (i.e. those instances in which A is not followed by B). Numerous experiments have shown that people often fail to do this in their everyday thinking. (See Boudon 1994: 68–9 for a discussion of this literature.)

4.4. THE ROLE OF SOCIAL INFLUENCE ON BELIEF FORMATION

As implied above, people often get their beliefs from others. From early childhood on, others try to impose their beliefs on us. This is as true of parents, friends, and teachers as it is of state institutions or the media, to mention just a few examples.[5] Hence, as Peirce (1957a: 16) emphasized, to the extent that people are not hermits they will necessarily influence each other's beliefs. Belief formation through social influence takes place more or less constantly, and is usually unconscious from an actor's perspective. Yet I will argue that two situations in particular are likely to make people receptive to social influence: (1) so-called black-box situations, that is situations of uncertainty (Boudon 1989) when people face new situations that their standard cognitive strategies fail to handle; and (2) when a person's beliefs deviate from those held by most others in his or her social surround.

Let us start with the former. Because of our limited cognitive resources as well as time limitations none of us has deep knowledge of all domains. We may know a lot about French literature or car motors, for instance, but little or nothing about quantum physics or international law. If that is the case, the latter two areas are black boxes for us. As has been argued by Boudon (1989: 84), it is often a reasonable strategy—and sometimes even rational—for people in such situations to avoid examining what is inside these black boxes, 'but rather to rely on authoritative arguments and judgements'. Most of the time, we may assume, people's navigation through black-box situations is not haphazard. Whom one relies on in a black-box situation largely depends on whom one trusts and whom one views as authoritative—and people tend to view certain actors and sources as more authoritative than others. For instance, people tend to be more confident in information coming from *epistemic authorities* (Kruglanski 1989), and more likely to adopt beliefs espoused by such actors, whose authority often derives from their social role, often associated with a position of power. Elite actors such as political, intellectual, and religious leaders are typical examples of epistemic authorities (see

Bar-Tal 1990: 71), as are experts more generally. Moreover, people are more likely to view somebody belonging to the same social group or social category as themselves as an epistemic authority (Raviv et al. 1993: 132).

However, people not only rely on epistemic authorities in black-box situations, but also on each other, particularly in situations in which no expert or other epistemic authority is readily available. There are numerous examples of this in mundane everyday action, as when one glances at other diners for information about which fork to use for the first course, or when the choice of restaurant is based on the number of other people already eating there (Granovetter 1978; Hedström 1998). Similarly, invoking the same mechanism of *social proof*, studies of consumption behavior have often observed that people are more likely to buy a product if they believe it is popular. As Neill (2005: 192) noted, this is why McDonald's 'advertises "billions and billions" of hamburgers sold'. In all these cases people base their beliefs on the assumption that what most others do is likely to be correct and that these people have good reasons for acting as they do. However, one risk associated with the strategy of imitation is that everyone may imitate the others, and that everyone may think that they alone are uncertain and confused or feel doubt. Sometimes, however, as in Merton's discussion (1968) of the self-fulfilling prophesy, an initially false belief may become true as enough people act upon it. A rumor about a bank's insolvency is likely to activate the Type 1/Type 2 dilemma (as discussed above), and many people will find it a better strategy to believe in the rumor and possibly be wrong than to incorrectly disbelieve it (because there are greater personal costs associated with the latter alternative). As a result, people will start to withdraw their savings from the bank, which will on the one hand reduce the bank's solvency and on the other hand be likely to influence other people to withdraw their money—and so on, until the bank actually goes bankrupt. We may assume that the likelihood of such an outcome will increase if the initial rumor originates from an epistemic authority, or if a trusted high-status person acts on the rumor.

However, sometimes—as in Hans Christian Andersen's story, 'The Emperor's New Clothes' (2001)—people in black-box situations may even come to follow a majority that actually does not exist; they may all come to believe that everyone else has understood something important of which they themselves are ignorant, and refrain from questioning the consensus out of fear of ridicule or ostracism. I will come back to this phenomenon—which is known as *pluralistic ignorance* (Allport 1924)—below.

Hence, it is not only in black-box situations that people are particularly receptive to social influence, but also in situations in which they discover that the beliefs they hold deviate from those of most others in their social surround. In fact, as implied above, we may assume that beliefs are particularly likely to be influenced by the social surround in situations in which these two conditions combine. As noted by Festinger(1950, 1954), in situations of subjective uncertainty in which

people lack objective reference points for their beliefs, they tend to compare their beliefs to those of significant others.[6] The more their beliefs harmonize with those of significant others, the more valid the beliefs are judged to be. When people discover that their beliefs harmonize with those held by most others in the group, they tend to become confident in their rightness and seldom change their opinion. Situations in which people's beliefs harmonize poorly with those held by significant others, on the other hand, tend to exacerbate the feeling of subjective uncertainty. To remedy this situation, people may change the group they belong to, and thus their significant others (which, however, often is difficult to do), or either try to change the beliefs held by the others in the group, or change their own beliefs to better reflect those of the group, which is often far easier.

However, the pressure to increase consistency between oneself and others is likely to vary between different structural situations. In particular, it is important to take 'loci of activity' into account (Feld 1981, 2008). Such loci (e.g. workplaces or neighborhoods) are important, as they bring people together in repeated interaction and thus organize people's social relations. We may assume that people will feel less pressure to increase consistency between oneself and others when interacting with people with whom they share only one or two loci, as compared to people with whom they share many loci. In the first case, more inconsistencies may be allowed for.

Nevertheless, this kind of conformity process was demonstrated by Asch (1956) in a series of highly influential experiments. Individuals were asked to match the length of a line with other lines of different length. All but one of the individuals in the group was instructed to make a match that was obviously wrong. When the last uninformed individual in each group was asked to make a match, one third of them yielded to the obviously erroneous judgment of the majority. Among the conforming subjects, a majority said they conformed because they lacked confidence in their own judgment and concluded that they must have been mistaken and the majority correct. The second most common reason was to persist in the belief that the majority was wrong, but to suppress this knowledge because of an unwillingness to deviate from the group. Asch showed that a majority of three persons was sufficient to have this effect. However, it is of crucial importance that the majority be unanimous, otherwise conformity decreases dramatically: conformity decreased from about a third to only five percent when a single individual deviated from the group by giving the correct answer (Allen 1975; cf. Bond 2005).

As shown by Asch's experiments, it is important to distinguish between belief conformity, on the one hand, and conformity in action, on the other. In order to escape negative sanctions, or to be rewarded economically or socially, people may change their action in order to conform to the group (see e.g. Deutsch and Gerard 1955), without giving up deviant beliefs held privately. Festinger (1953) emphasized this distinction by distinguishing between *internalization*—that is, both belief conformity and conformity in action—and *compliance*—that is, conformity in action

but not in beliefs (see also Brown 2006). According to Festinger, compliance is more likely if a person is restricted from leaving a group or society and when there is a threat of social, economic, or physical punishment for noncompliance. The likelihood for internalization, on the other hand, increases if the person is attracted to the group and wishes to remain a member.

It is important to emphasize that people who suppress their true beliefs in order to conform to the majority view, or what they perceive to be the majority view (something that Kuran 1995 has called *preference falsification*) are likely to have an influence on other people's beliefs in the manner discussed above. This fact is of great importance for understanding diffusion processes. One poignant example is how conflicts escalate. As demonstrated by Kuran (1998), the pressure on people to conform to the 'in-group' increases in polarized situations in which the cost of remaining a deviant or even a passive bystander increases—because of both the risk of being branded a traitor by the in-group and the risk of being left unprotected from assaults from the 'out-group'. As a result, moderates may suppress their true beliefs, which gives radical or fanatical elements disproportionate influence. At the same time, because of the people who comply, others may get the impression that the majority is bigger than it actually is, which will increase the likelihood that they will comply as well—or that they will actually change beliefs. And so on.

Above I briefly introduced this kind of phenomenon as *pluralistic ignorance*. In situations of pluralistic ignorance people comply with the majority action while suppressing their true beliefs; at the same time, however, they believe that other people's actions reflect *their* true beliefs. There are numerous examples of pluralistic ignorance in all spheres of social life. As argued by Miller and McFarland (1991: 305), for instance, racial segregation in the USA may have persisted 'long after the majority opposed it because those who held anti-segregationist positions mistakenly believed they were in the minority' (see O'Gorman 1975 for a well-known study showing this). Even today, as shown by Shelton and Richeson (2005), racial segregation is partly upheld by pluralistic ignorance. Even though 'members of different racial groups would like to have more contact with members of other groups, they are often inhibited from doing so because they think out-group members do not want to have contact with them'. Pluralistic ignorance may also explain why totalitarian regimes may stay in power despite weak popular support and without having to use much direct violence. In states such as the Soviet Union, where there was little open communication among citizens (i.e. where public meetings were forbidden and where people feared informers), people 'lacked reliable information on how many of the fellow citizens favored radical political change—to say nothing of knowing others' readiness to react' (Kuran 1995: 125; see also Coser 1990). Because few people wanted to act against the regime if not enough other people were prepared to do the same, this impeded collective action (see Granovetter 1978).

As implied by the last example, the principal way out of pluralistic ignorance is communication. However—and this lies at the heart of the problem of pluralistic

ignorance—people commonly refrain from communicating their true beliefs to others whom they do not fully trust, out of fear of negative sanctions. Hence, only under certain circumstances is communication likely to lead to 'common beliefs' (Bar-Tal 1990) or 'common knowledge' (Chwe 1999, 2001)—that is, to a situation in which people believe that their beliefs are shared by others with a high degree of certitude, and also believe that other people 'know' that they believe that is the case. Communication is more likely to lead to common beliefs among people in close contact with one another, and especially among cliques of people constituting so-called interlocked triads (that is, situations in which A knows B and C, and B and C also know one another). Strong ties are thus more likely to foster common beliefs than are weak ties; however, the problem is that such beliefs are likely to spread much more slowly through strong ties than through weak ones since weak ties are more likely to bridge different clusters (Chwe 1999; cf. Granovetter 1973). Common beliefs among a mass of people are more likely to emerge through various mass events, such as demonstrations or mass-media reports, that are shared by many people simultaneously. To understand the fall of Communism in the Soviet Union and the Eastern Bloc, one should not underestimate the fact that demonstrations organized by 'true believers', in Leipzig for instance, were not violently repressed, something that attracted more people to subsequent demonstrations, which in turn created common beliefs about the fact that a considerable number of people were prepared to act against the regime (cf. Kuran 1995; Beissinger 2002).

4.5. DISSONANCE AND CONSISTENCY-SEEKING

As discussed above, people sometimes experience dissonance when they compare their beliefs with those held by significant others. However, even comparison with one's own other beliefs or with the ways in which one acts may create dissonance (Festinger 1957). The assumption of this theory is that humans are *consistency seekers*; dissonance is assumed to lead to negative emotions from which people are relieved once they have restored consistency between action and beliefs and/or between different beliefs by unconsciously changing one or more of their beliefs (Festinger 1957; Harmon-Jones and Mills 1999).

We find this mechanism in many classic explanations. For instance, the gist of Hannah Arendt's argument (1958) about how racism emerged as an ideology was that it was a way of reducing the dissonance between merciless exploitation due to imperialist expansion and the belief in humanity as the measure of everything. By dehumanizing the exploited group, imperialist expansion came to be seen as relatively natural and unproblematic. More generally, we often see this mechanism

at work in processes of 'blaming the victim'. When treating another person badly, we commonly seek a way of justifying the action such as by adopting the belief that the person in question 'is stupid or careless or evil…and therefore deserved our maltreatment' (Pratkanis and Aronson 2002: 229; see Davis and Jones 1960 for a sociopsychological experiment showing this process).

However, the obvious objection to the theory of cognitive dissonance is that 'people do in fact tolerate a fair amount of inconsistency' (Fiske and Taylor 1991: 11). It is not uncommon for people to hold contradictory beliefs, apparently without experiencing any serious dissonance. And people sometimes do blame themselves after mistreating another person. As a result, we should be cautious not to exaggerate the motivational force provided by the search for consistency. This is not to say that consistency-seeking and dissonance reduction is not an important mechanism in many situations, only that it is far from universal and that we must understand why some inconsistencies rather than others activate the mechanism of dissonance reduction (cf. Kuran 1995: 183). In order to approach this important question, I would argue that we need to distinguish between beliefs according to their *centrality* and *tightness*.

Beliefs are often interconnected in various belief systems in which different beliefs imply each other (see e.g. Borhek and Curtis 1983). Such belief systems may concern politics or religion, for instance, and for some people politics and religion are different belief systems (that is, one's religious beliefs do not imply one's political beliefs) and for some people politics and religion are the same belief system. Beliefs that are subjectively deemed to belong to different belief systems and therefore do not imply one another possess no or only low tightness, whereas beliefs deemed to belong to the same belief system possess higher tightness (Martin 2002). As emphasized by Martin (ibid. 872), epistemic authorities play an important role in creating such belief tightness in authorizing certain webs of implications between beliefs and precluding others. I would argue that the mechanism of dissonance reduction needs belief tightness to be activated. We may assume that people without much reflection tolerate inconsistency between beliefs belonging to different belief systems, whereas cognitive dissonance is considerably more likely to result from inconsistency between beliefs belonging to the same belief system.

Moreover, beliefs are of different degrees of centrality within belief systems (Rokeach 1973). While a change in central beliefs has implications for many other beliefs, a change in more peripheral beliefs does not seriously affect other beliefs (Bar-Tal 1990: 16). With Rokeach (1973), we may assume that the more central a belief is, that is the more connected it is with other beliefs, the more resistant it is likely to be to change. This implies two important things. First, when dissonance occurs as a result of inconsistency between a central belief and one or more peripheral beliefs, people are more likely to change the latter than the former in order to reduce the dissonance. Second, people may leave central beliefs unchanged even if they cause inconsistencies and dissonance, because to change them would cause

greater emotional distress than that caused by the dissonance. Moreover, similar to the logic of Kuhn's argument about paradigm shifts (1962), we may assume that people do not change beliefs, and in particular not central beliefs, unless there are available alternative beliefs that are perceived to be better.

Conclusion

The focus of this chapter has been on common, relatively universal mechanisms of belief formation, and it should be clear from the discussion above that beliefs cannot be inferred from strong assumptions about rationality—that is, that actors have perfect knowledge about the world and about optimal courses of action in given situations. Beliefs are not transparent, but should be taken seriously in the explanation of action. People tend to rely on beliefs that work, beliefs that are subjectively deemed to be good enough (see Simon 1979), even if these beliefs are biased and flawed. Priming, framing effects, and processes of social influence affect people's beliefs, and these need to be considered when assessing the beliefs groups of people hold in specific situations. This fact also points to the need to be cautious with making assumptions about Bayesian updating processes (see e.g. Breen 1999) unless empirical evidence justifying the assumption can be presented. In some situations it may be a realistic assumption; in many others it is not.

Notes

1. So the line of argument taken in this chapter is that people act the way they do *because* of their beliefs (and desires); however, an alternative line of argument—proposed by Pareto (1935)—is that people act the way they do because of sentiments and self-interests, and that beliefs are mere rationalizations—that is, explanations constructed a posteriori in order to make their behavior seem reasonable (see also Fonesca 1991: 198; cf. Margolis 1987: 22). Although I agree with Pareto that action is not always—or even mostly—preceded by conscious calculations of possible action alternatives, it is difficult for me to conceive of action that does not involve a priori beliefs.

2. It is useful to distinguish between *descriptive beliefs* or *factual beliefs*, which imply truth or falsity, and *evaluative beliefs*, which have to do with believing something is good or bad (see e.g. Bar-Tal 1990). Both descriptive beliefs and evaluative beliefs can be about objects as well as relations between objects.

3. In such a way, for instance, about 20 percent of Americans believed that too little was spent on welfare, whereas 65 percent believed too few public resources were spent on 'assistance to the poor' (Chong and Druckman 2007: 104).

4. For instance, when pondering on the reason why my boss all of a sudden seems irritable towards me, I hypothesize that he is overworked—because that would explain his change in behavior.

5. One should not underestimate the role of the mass media—and in particular television—in this context. Writing in the early 1990s, Iyengar (1991: 1) observed that television 'takes up more of the typical American waking hours than interpersonal interaction'.

6. As argued by Goethals et al. (1991: 153), such social comparisons are often forced: whether we want it or not, most of us compare with other people 'who are salient or available, or with whom we interact'.

REFERENCES

ALLEN, V. L. (1975), 'Social Support for Nonconformity', in L. Berkowitz (ed.), *Experimental Social Psychology Advances* (New York: Academic).

ALLPORT, F. H. (1924), *Social Psychology* (New York: Houghton Mifflin).

ANDERSEN, H. C. (2001), *Fairy Tales from Andersen* (Oxford: Oxford University Press).

ARENDT, H. (1958), *The Origin of Totalitarianism* (New York: Harcourt Brace).

ASCH, S. E. (1956), 'Studies of Independence and Conformity: A Minority of One Against a Unanimous Majority. *Psychological Monographs*, 70.

AYER, A. J. (1963), 'Two Notes on Probability', in Ayer (ed.), *The Concept of a Person and Other Essays* (London: Macmillan).

BAR-TAL, D. (1990), *Group Beliefs: A Conception for Analyzing Group Structure, Processes, and Behavior* (New York: Springer).

BARTLETT, F. C. (1995), *Remembering: A Study in Experimental Social Psychology* (Cambridge: Cambridge University Press).

BEISSINGER, M. R. (2002), *Nationalist Mobilization and the Collapse of the Soviet State* (Cambridge: Cambridge University Press).

BOND, R. (2005), 'Group Size and Conformity', *Group Processes and Intergroup Relations*, 8 (4): 331–54.

BORHEK, J. T., and CURTIS, R. F. (1983), *A Sociology of Belief* (Malabar, Fla.: Krieger).

Boudon, R. (1989), *The Analysis of Ideology* (Oxford: Polity).

——(1994), *The Art of Self-Persuasion: The Social Explanation of False Beliefs* (Oxford: Polity).

BREEN, R. (1999), 'Beliefs, Rational Choice and Bayesian Learning', *Rationality and Society*, 11 (4): 463–79.

BROWN, R. (1958), 'How Should a Thing Be Called?', *Psychological Review*, 65: 14–21.

——(1995), *Prejudice: Its Social Psychology* (Oxford: Blackwell).

——(2006), *Group Processes: Dynamics Within and Between Groups* (Oxford: Blackwell).

CHONG, D., and DRUCKMAN, J. N. (2007), 'Framing Theory', *Annual Review of Political Science*, 10: 103–26.

CHWE, M. S. (1999), 'Structure and Strategy in Collective Action', *American Journal of Sociology*, 105: 128–56.

—— (2001), *Rational Ritual: Culture, Coordination, and Common Knowledge* (Princeton, NJ: Princeton University Press).

Coser, L. A. (1990), 'The Intellectuals in Soviet Reform: On 'Pluralistic Ignorance' and Mass Communications', *Dissent*, 37: 181–3.

Davies, K., and Jones, E. E. (1960), 'Changes in Interpersonal Perception as a Means of Reducing Dissonance', *Journal of Abnormal and Social Psychology*, 61: 402–10.

Deutsch, M., and Gerard, H. B. (1955), 'A Study of Normative and Informational Social Influence upon Individual Judgement', *Journal of Abnormal and Social Psychology*, 51: 629–36.

Elster, J. (1979), *Ulysses and the Sirens: Studies in Rationality and Irrationality* (Cambridge: Cambridge University Press).

—— (1983a), *Explaining Technical Change: A Case Study in the Philosophy of Science* (Cambridge: Cambridge University Press).

—— (1983b), *Sour Grapes: Studies in the Subversion of Rationality* (Cambridge: Cambridge University Press).

Feld, S. (1981), 'The Focused Organization of Social Ties', *American Journal of Sociology*, 86 (5): 1015–35.

—— and Grofman, B., (2009), 'Homophily and the Focused Organization of Ties', in P. Bearman and P. Hedström (eds.), *The Oxford Handbook of Analytical Sociology* (Oxford: Oxford University Press).

Festinger, L. (1950), 'Informal Social Communication', *Psychological Review*, 57: 271–82.

—— (1953), 'An Analysis of Compliant Behaviour', in M. Sherif and M. O. Wilson (eds.), *Group Relations at the Crossroads* (New York: Harper).

—— (1954), 'A Theory of Social Comparison Processes', *Human Relations*, 7: 117–40.

—— (1957), *A Theory of Cognitive Dissonance* (Stanford, Calif.: Stanford University Press).

Fischer, D. H. (1970), *Historians' Fallacies: Toward a Logic of Historical Thought* (New York: HarperPerennial).

Fishbein, M., and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior* (Reading, Mass.: Addison-Wesley).

Fiske, S. T., and Taylor, S. E. (1991), *Social Cognition* (New York: McGraw-Hill).

Fonesca, E. G. (1991), *Beliefs in Action: Economic Philosophy and Social Change* (Cambridge: Cambridge University Press).

Goethals, G. R., Messick, D. W., and Allison, S. T. (1991), 'The Uniqueness Bias: Studies of Constructive Social Comparison', in J. Suls and T. A. Wills (eds.), *Social Comparison: Contemporary Theory and Research* (Hillsdale, NJ: Erlbaum).

Granovetter, M. S. (1973), 'The Strength of Weak Ties', *American Journal of Sociology*, 78 (6): 1360–80.

—— (1978), 'Threshold Models of Collective Behavior', *American Journal of Sociology*, 83: 1420–43.

Hájek, A. (2004), 'Pascal's wager', in *Stanford Encyclopedia of Philosophy*, at <http://plato.stanford.edu/entries/pascal-wager/>, accessed 2008.

Harmon-Jones, E., and Mills, J. (1999) (eds.), *Cognitive Dissonance: Progress on a Pivotal Theory in Social Psychology* (Washington DC: American Psychological Association).

Hedström, P. (1998), 'Rational Imitation', in P. Hedström and R. Swedberg (eds.), *Social Mechanisms: An Analytical Approach to Social Theory* (Cambridge: Cambridge University Press).

HEDSTRÖM, P. (2005), *Dissecting the Social: On the Principles of Analytical Sociology* (Cambridge: Cambridge University Press).

HOLLAND, J. H., et al. (1986), *Induction: Processes of Inference, Learning, and Discovery* (Cambridge, Mass.: MIT Press).

HOLYOAK, K. J., and THAGARD, P. (1999), *Mental Leaps: Analogy in Creative Thought* (Cambridge, Mass.: MIT Press).

IYENGAR, S. (1991), *Is Anyone Responsible? How Television Frames Political Issues* (Chicago, Ill.: University of Chicago Press).

JAMES, W. (1890), *The Principles of Psychology* (New York: Holt, Rinehart & Winston).

JASTROW, J. (1900), *Fact and Fable in Psychology* (Boston, Mass.: Houghton Mifflin).

KAHNEMAN, D., and TVERSKY, A. (1982), 'Subjective Probability: A Judgment of Representativeness', in D. Kahneman, P. Slovic, and A. Tversky (eds.), *Judgment under Uncertainty: Heuristics and Biases*, (Cambridge: Cambridge University Press).

KHONG, Y. F. (1992), *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965* (Princeton, NJ: Princeton University Press).

KRUGLANSKI, A. W. (1989), *Lay Epistemics and Human Knowledge: Cognitive and Motivational Bases* (New York: Plenum).

KUHN, T. S. (1962), *The Structure of Scientific Revolutions* (Chicago, Ill.: University of Chicago Press).

KURAN, T. (1995), *Private Truths, Public Lies: The Social Consequences of Preference Falsification* (Cambridge, Mass.: Harvard University Press).

—— (1998), 'Ethnic Dissimilation and Its International Diffusion', in D. A. Lake and D. Rothchild (eds.), *The International Spread of Ethnic Conflict* (Princeton, NJ: Princeton University Press).

LUPIA, A., McCUBBINS, M. D., and POPKIN, S. L. (2000), 'Beyond Rationality: Reason and the Study of Politics', in Lupia, McCubbins, and Popkin (eds.), *Elements of Reason: Cognition, Choice, and the Bounds of Rationality* (Cambridge: Cambridge University Press).

McGARTY, C. (1999), *Categorization in Social Psychology* (London: Sage).

MACKIE, G. (1996), 'Ending Footbinding and Infibulation: A Convention Account', *American Sociological Review*, 61 (6): 999–1017.

MARGOLIS, H. (1987), *Patterns, Thinking, and Cognition* (Chicago, Ill.: University of Chicago Press).

MARTIN, J. L. (2002), 'Power, Authority, and the Constraint of Belief Systems', *American Journal of Sociology*, 107(4): 861–904.

MERTON, R. K. (1968), *Social Theory and Social Structure* (New York: Free Press).

MILLER, D., and McFARLAND, C. (1991), 'When Social Comparison Goes Awry: The Case of Pluralistic Ignorance', in J. Suls and T. A. Wills (eds.), *Social Comparison: Contemporary Theory and Research* (Hillsdale, NJ: Erlbaum).

NEILL, D. B. (2005), 'Cascade Effects in Heterogeneous Populations', *Rationality and Society*, 17 (2): 191–241.

NISBETT, R., and ROSS, L. (1980), *Human Inference: Strategies and Shortcomings of Social Judgment* (Englewood Cliffs NJ: Prentice-Hall).

OBERSCHALL, A. (2000), 'Why False Beliefs Prevail: The Little Rascals Child Sex Abuse Prosecutions', in J. Baechler and F. Chazel (eds.), *L'Acteur et ses raisons: mélanges en l'honneur de Raymond Boudon* (Paris: Presses Universitaires de France).

O'GORMAN, H. J. (1975), 'Pluralistic Ignorance and White Estimates of White Support for Racial Segregation', *Public Opinion Quarterly*, 39: 313–30.

Pareto, V. (1935), *The Mind and Society, iii. Theory of Derivation* (New York: Harcourt, Brace).

Pascal, B. (1995), *Pensées* (London: Penguin).

Peirce, C. S. (1957a), 'The Fixation of Belief', in Pierce, *Essays in the Philosophy of Science* (New York: Bobbs-Merrill).

—— (1957b), 'The Logic of Abduction', in Pierce, *Essays in the Philosophy of Science* (New York: Bobbs-Merrill).

Pratkanis, A., and Aronson, E. (2002), *Age of Propaganda: The Everyday Use and Abuse of Persuasion* (New York: Owl).

Raviv, A., Bar-Tal, D. and Albin, R. (1993), 'Measuring Epistemic Authority: Studies of Politicians and Professors', *European Journal of Personality*, 7: 119–38.

Rokeach, M. (1973), *The Nature of Human Values* (New York: Free Press).

Rydgren, J. (2004), 'The Logic of Xenophobia', *Rationality and Society*, 16 (2): 123–48.

—— (2007), 'The Power of the Past: A Contribution to a Cognitive Sociology of Ethnic Conflict', *Sociological Theory*, 25 (3): 225–44.

—— (2008), 'Shared Beliefs About the Past: A Cognitive Sociology of Intersubjective Memory', in P. Hedström and B. Wittrock (eds.), *The Frontiers of Sociology* (Amsterdam: Brill).

Schuman, H., and Rieger, C. (1992), 'Historical Analogies, Generational Effects, and Attitudes toward War', *American Sociological Review*, 57 (3): 315–26.

Shelton, J. N., and Richeson, J. A. (2005), 'Intergroup Contact and Pluralistic Ignorance', *Journal of Personality and Social Psychology*, 88 (1): 91–107.

Simon, H. A. (1979), *Models of Thought* (New Haven, Conn.: Yale University Press).

Stinchcombe, A. L. (1968), *Constructing Social Theories* (New York: Harcourt, Brace & World).

Tversky, A., and Kahneman, D. (1982), 'Judgment Under Uncertainty: Heuristics and Biases', in D. Kahneman, P. Slovic, and A. Tversky, *Judgment Under Uncertainty: Heuristics and Biases*, (Cambridge: Cambridge University Press).

Wittgenstein, L. (1997), *Philosophical Investigations* (Cambridge, Mass.: Blackwell).