Delusions and Other Beliefs

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Abstract The difficulty of distinguishing between delusions and non-pathological beliefs has taxed some of the greatest minds in psychiatry. This chapter argues that this question cannot be resolved without first having an understanding of what is involved in holding an ordinary belief. Although we should not assume that ordinary-language words such as 'belief' will correspond with a specific psychological mechanism or process, sufficient evidence is available from diverse areas of psychology to reach some conclusions about what happens when someone 'believes' something. Beliefs are propositions about the world that are generated dynamically, often during interactions with other people, and therefore depend on the human capacity for language. Although many beliefs are mundane, it is possible to identify a class of master interpretive systems that includes political ideologies and religious belief systems, which are highly resistant to challenge and capable of generating considerable emotion. These systems seem to depend not only on the ability to generate propositions about the world but also on implicit cognitive processes that are related to fundamental biological and social needs, for example the need to avoid contagion, the need to form close intimate relationships or

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the need to avoid out-groups. Delusions share many of the properties of master interpretive systems but differ because they are idiosyncratic. They may arise when individuals are very isolated or if they lack the cognitive tools to function effectively in groups. Further progress in understanding delusions is likely to be made if research is informed by findings from political psychology and the psychology of religion.

3.1   INTRODUCTION

Delusions, described in the latest edition of the American Psychiatric Association's (2013) diagnostic manual as, "fixed beliefs that are not amenable to change in light of conflicting evidence", are a commonly recorded symptom of severe mental illness, observed in patients with a wide range of diagnoses including schizophrenia, schizoaffective disorder, bipolar disorder and major depression. In recent years, paranoid (persecutory) beliefs in particular have been the subject of extensive psychological investigation, leading to well-developed psychological models and a rich experimental literature (Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001; Freeman, 2016). However, both standard psychiatric accounts and psychological approaches have treated delusions as *sui generis*. At the same time, within the philosophical literature, there has been a vigorous debate about the doxastic nature of delusions – whether they can be said to be beliefs at all (Bortolotti, 2018).

   Arguably, these developments reflect lack of clarity about the concept of belief. It is difficult to overstate how widely this concept is employed in clinical psychology (e.g. in cognitive models of depression; Beck, 1987), social psychology (e.g. models of social reasoning such as attribution theory; Weiner, 2008), and cognitive science (e.g. models of semantic knowledge; Martin, 2009). Within the social sciences such as sociology, political science, anthropology and history, the concept is so ubiquitous that documenting its usage would be a near-impossible task. Indeed, some philosophers have attempted to draw a distinction between the human and natural sciences on the grounds that human behaviour is rule-governed, determined by reasons and hence (implicitly at least) belief-driven (Winch, 1958).

In this essay, I will argue that, despite the absence of an over-arching theory of what is involved when someone believes something, sufficient evidence can be gleaned from diverse areas of psychology to reach some important conclusions and, furthermore, that these conclusions illuminate both similarities and differences between the delusions of psychiatric patients and the beliefs of ordinary people. The spirit behind this analysis, which is contrary to the standard psychiatric approach, involves starting with the assumption that delusional and non-delusional beliefs are similar phenomena until proven otherwise.

3.2   Delusions

Throughout the history of psychiatry the assumption that delusions and ordinary beliefs and attitudes are different has been coupled with the recognition that it is difficult to state exactly where the difference lies. This difficulty has practical implications, particularly for psychiatric diagnosticians and in legal contexts when efforts are made to determine the culpability of people who commit serious crimes. The cases of Ron and Dan Lafferty in the United States (Krakauer, 2003) and Anders Breivik in Norway (Melle, 2013) illustrate this problem. The Lafferty brothers, devout Mormon fundamentalists, were convicted of murdering their sister in law and her infant daughter in 1983, apparently at the instigation of messages received from Jesus Christ; one of the brothers later proclaimed himself to be the prophet Elijah. Breivik committed a bombing and a mass shooting in Norway in 2011, killing seventy-seven mostly young people, apparently believing himself to be a member of a mysterious group, the Knight Templars, defending Europe against Islamist influences. In both cases, there was extensive debate amongst mental health professionals about whether the beliefs motivating the crimes could be said to be delusional and therefore evidence of mental illness. Although, in both cases, juries ultimately decided that the perpetrators were culpable for their crimes, it was striking that mental health professionals continued to be divided on the issue even after convictions had been obtained.

Phenomenological data has often been appealed to when attempting to distinguish between delusional and non-delusional beliefs and, indeed, the failure of mental health professionals to reach a definitive position on the Breivik case has been attributed to the failure to attend to this kind of evidence (Parnas, 2013). In his celebrated analysis of the problem, Karl Jaspers (1913/1963) noted that delusional beliefs seemed bizarre to

others, are firmly held and are resistant to counter argument. However, he held that true delusions are distinguishable from 'delusional-like ideas' because they often occur suddenly and are "ununderstandable" in the sense that they cannot be understood in terms of the individual's background experiences and personality. Later phenomenologists, such as Conrad, argued that delusions are the consequence of subtle changes in the way that the individual experiences the self and the world, and can therefore be identified by the emotional and perceptual changes that often preceded the development of the belief (Bovet & Parnas, 1993), a position which is said to be supported by detailed analysis of patients' experiences (Parnas, Handest, Jansson, & Sæbye, 2005). A further observation that is said to call the doxastic nature of delusions into question is 'double book keeping' – the failure of patients to act in ways that are consistent with their delusional statements (Sass, 2014), a phenomenon that is said to show lack of normal commitment to beliefs, and which appears to place the patient in a position akin to solipsism (Sass, 1994). Notice that, in these analyses, a common sense concept of 'belief' is typically unanalysed and taken for granted.

It is possible to question the project to phenomenologically deconstruct delusions on philosophical grounds. The phenomenological approach places great emphasis on patient's ability to describe private experiences and yet, as the later Wittgenstein, (1953) and sophisticated 'radical' behaviourists have pointed out (Skinner, 1945), reporting private events is a quite different type of activity to the reporting of public experiences. This is because, during ontogeny, the acquisition of words to describe events requires that both the perceiver and others have access to the events in question (I can be taught by someone else to accurately name a "table" or corrected if I mistake it for a "chair"), a condition which is absent when talking about the inner world available to only one observer. Indeed, when examining historically important examples of delusional self-reports, notably the celebrated case of Daniel Schreber (1903/1955), the struggle to describe such experiences is palpable.

Empirical studies provide further grounds for questioning the criteria for delusions represented in both classification manuals and the phenomenological literature. First, delusions may be held less rigidly than often supposed, and conviction in them may be no greater than for other idiosyncratic or religious beliefs and attitudes (Brett-Jones, Garety, & Hemsley, 1987; Colbert, Peters, & Garety, 2010). Conversely, other kinds of beliefs, notoriously political beliefs, are often held very rigidly (Taber & Lodge,

2013), or shift in ways that seem to have very little to do with the rational appraisal of evidence (Achen & Bartels, 2016). Second, psychometric studies show that, in the case of paranoid beliefs in particular, the delusions of psychiatric patients exist on a continuum with less severe analogues experienced in everyday life (Bebbington et al., 2013; Elahi, Perez Algorta, Varese, McIntyre, & Bentall, 2017). Third, research with psychiatric patients and epidemiological samples has shown that abnormal beliefs are often preceded by life events that can be meaningfully linked to the beliefs. For example, paranoid beliefs are often preceded by severe disruptions of early attachment relationships (Bentall, Wickham, Shevlin, & Varese, 2012; Sitko, Bentall, Shevlin, O'Sullivan, & Sellwood, 2014) and/ or experiences of victimization (Janssen et al., 2003). It has also been pointed out that the phenomenon of double book-keeping may be much less ubiquitous in the lives of psychiatric patients than has sometimes been thought (so far as I am aware, no commentator on the Breivik case disputed his delusional status on the grounds that he actually killed people) and can possibly be accounted for by supposing that the deluded person lacks the motivation to act on their beliefs (Bortolotti & Broome, 2012). Finally, anomalous perceptual experiences are often reported before the onset of at least one kind of belief that is widely accepted to be nondelusional, namely religious belief (Hardy, 1979).

Of course, none of these observations rule out the possibility that some of the beliefs expressed by psychiatric patients are qualitatively different from those of ordinary people. However, to see whether this is the case, we surely need to have some conception of what is involved when ordinary people express a belief.

3.3   WHAT ARE BELIEFS? THE INNER LIST IDEA

If the concept of delusion is slippery, the same is undoubtedly true of the concept of belief. A modern attempt to define the concept can be found in the *Stanford Encyclopedia of Philosophy* (Schwitzgebel, 2015):

> Contemporary analytic philosophers of mind generally use the term 'belief' to refer to the attitude we have, roughly, whenever we take something to be the case or regard it as true. To believe something, in this sense, need not involve actively reflecting on it: Of the vast number of things ordinary adults believe, only a few can be at the fore of the mind at any single time…. Many of the things we believe, in the relevant sense, are quite mundane: that we

have heads, that it's the 21st century, that a coffee mug is on the desk. Forming beliefs is thus one of the most basic and important features of the mind.

When attempting to make sense of beliefs from a psychological perspective, it is important to acknowledge that everyday language may provide a poor taxonomy of human mental processes. Indeed, the English language provides many other concepts that appear to overlap with the concept of 'belief' to some degree, for example 'attitude' (the cognitive component of which can be thought of as, roughly, a belief about the value of something), and 'prediction' (roughly, a belief about what will happen in the future).

Some radical critics of folk psychology (the kind of psychological concepts we employ in everyday life), for example eliminative philosophers such as Churchland (1986) and Stich (1996), have argued that we have no warrant to believe that folk psychological concepts such as belief will correspond with discoverable psychological or neural processes at all, and that they therefore should be dispensed with in any scientific account of human behaviour. However, the fact that I have felt compelled to use the word 'belief' to describe their position illustrates, I think, its fatal flaw.

I will therefore take the more pragmatic approach of identifying those mechanisms that seem to be involved when people behave in ways that we would describe as 'believing'. (Much of what I will say will also apply to what human beings do when they are said to have an attitude towards something, or to predict something.) Before proceeding, however, it will first be useful to dispense with a common misconception about beliefs which, I think, lies behind the objections made by eliminativists (who, on looking in the brain see nothing that seems to correspond to the concept of 'belief') and certain types of methodological behaviourists (for example, Watson, 1924) who object to talking about private psychological phenomena on the grounds that they are unobservable.

The earliest references to belief in the English language all occur within a theological context. For example, the Oxford English Dictionary attributes the first recorded use of the mental conviction form of 'belief' as the Middle English "Đesne laf we æteð þonne we mid bileafan gað to halige husle ure hælendes lichame" ("This bread we eat when we with faith go to the holy Eucharist of Our Lord's body"), which appears in Ælfric's Homily on Nativity of Christ, written in about 1175. Of course, it is entirely possible that this early association between belief and religion simply reflects

the fact that nearly all of the earliest English-language texts were written by monks, but it is more likely because the creation of theological doctrine implies the need for a list-like approach in which beliefs can be codified and decisions can be made about who is a true believer and who is not. Indeed, in the face of competition between different Christian cults in the first millennium, the necessity arose to make people accountable for their beliefs, and so the early Church devoted considerable energy towards the development of checklists of beliefs, known as *creeds* (MacCulloch, 2009).

Speculating somewhat, the invention of creeds was perhaps the cultural origin a pervasive conception of beliefs as a kind of inner list that can be read out when an individual is interrogated (and which the individual may decide not to report accurately, in which case he or she is said to lie). It is not difficult to see why the inner list conception is problematic. We are capable of believing some things completely de novo (I believe that there are no convenience stores on the far side of Jupiter but I have never had this thought before today). Just as importantly, during everyday conversations, especially arguments and debates, what we assert to be the case (what we believe) may evolve as a conversation progresses; indeed, in many cases the establishment of what is factually the case occurs socially, through interactions with other people (Edwards & Potter, 1992). This kind of online elaboration, in which claims about what is the case are constructed and defended using various rhetorical strategies, so that what is true might be said to be negotiated, is not only observed during political debates and family arguments but also when psychiatric patients are challenged (Georgaca, 2000) and has a number of important implications.

The most important theoretical implication is that we should think of believing as a kind of activity or behaviour that evolves over time. Believing is something that we do, and therefore more like a performance than a script. Because believing is a dynamic process, there can be no final account of what we believe. To borrow a metaphor from Dennett (1991) our beliefs therefore appear as an endless series of multiple drafts, each one to be replaced by a further draft. Rather than thinking about beliefs (noun) we would better think about believing (verb).

A practical implication is that we should recognise that the way that believing is performed will vary according to circumstances, and that the spontaneous statement of a belief may involve very different processes to those involved in assenting to a belief presented by someone else. For this reason, simple questionnaire measures of beliefs have important limitations. As a researcher who has used measures of this kind in numerous

studies, I hesitate to say that they have no value – clearly they do – but, when a person fills in a questionnaire, what they are really doing is stating how much they would be likely to agree with the beliefs of the questionnaire designer, which is quite a different thing to actually generating a belief. (Recent – at the time of writing in early 2018 – research on the British public's attitude towards leaving the European Union illustrates this point quite well. Whereas polling data seems to suggest that those who voted to leave have hardly changed their minds, focus groups in which people are encouraged to freely express their thoughts have revealed a substantial group of 'leavers' who, despite stating that they would probably vote to leave the EU again in the event of a second referendum, have serious doubts about the wisdom of doing so; Gaston, 2018).

3.4   Do Dogs Believe?

With the above caveats in mind, we can now move on to consider what kind of psychological mechanisms are involved when a person is said to believe something. A helpful starting point is to consider whether animals believe. It is self-evidently true that the reader's dog is unlikely to become a jihadi, but he will come downstairs at the appropriate time, stand in front of the cupboard containing his food and wag his tail hopefully. Can the dog be said to believe that the food is in the cabinet?

A rich tradition of empirical research, beginning in the behaviourist era but extending to the present day, has explored the intellectual capabilities of animals by investigating their ability to learn in various experimental situations. Much of this research has focused on either Pavlovian conditioning in which the animal learns associations between previously unrelated stimuli (for example, that a bell signals the arrival of food) or operant conditioning in which the animal learns that certain responses are associated with rewarding or unrewarding consequences (for example, that pressing a lever is followed by the delivery of food). Interestingly, when nonhuman vertebrate species are tested appropriately, it is difficult to discern substantial differences between them – goldfish can be trained to perform tricks of surprising complexity if rewarded; it is just difficult to find ways of rewarding goldfish (McPhail, 1982).

There has been a decades long debate about whether the full complexity of non-human mammalian behaviour can be accounted for by associative mechanisms (Pearce, 2008). It is important to note that these mechanisms are capable of not only associating but also evaluating (when

a neutral stimulus is paired with a valued stimulus, the neutral stimulus acquires value) and anticipating (animals can use learned relationships between stimuli to predict future events). This latter property reveals that the associative system is much more sophisticated than was thought during the early days of behaviourism. In a celebrated series of studies, Wagner and Rescorla (1972) showed that mere contiguity between stimuli is insufficient for conditioning to occur; stimuli are only attended to by animals if they carry information about other important events in their environment. Hence, associative learning is a process that allows animals to predict the occurrence of evolutionarily salient events such as food or predators, and to select actions that either increase or decrease the likelihood of encountering those events. If this ability were considered sufficient to make an attribution of belief, then it would be reasonable to say that the dog believes that food is in the cupboard.

The ability that unambiguously separates human beings from other animal species is, of course, language. Many design features distinguish language from naturally-occurring animal communication systems (Hockett, 1959), but two particularly important ones are worth noting. First, the use of arbitrary symbols – words – allows human beings to talk about events that are not actually present ("black holes") and with a high level of abstraction ("democracy"). Second, the structure of language allows these words to be combined according to syntactic rules, facilitating the construction of propositions that incorporate complex conditional relations (for example, if-then rules as in, "If I don't complete this chapter soon, Lisa will be very unhappy"). This latter feature is hard to account for in terms of associative processes. Four decades-worth of attempts to teach symbol manipulation and language-related skills to non-human animals have produced largely negative or at best inconclusive results (Lyn, 2012; Pepperberg, 2017). In particular, syntax appears to be denied to non-human species (Terrace, Petitto, Sanders, & Bever, 1979; Yang, 2013). Certainly, outside the confines of narrow experimental procedures conducted within the animal laboratory, human being are the only species that spontaneously communicates with propositions, leading some to suggest that we occupy a kingdom of our own within the taxonomic structure of the natural world (Wolfe, 2016).

Although the human ability to construct verbal propositions has clearly played a crucial role in facilitating the development of science and culture, language is not merely a vehicle for transmitting complex ideas between individuals and across generations. When we communicate with ourselves,

propositions provide a powerful tool for thinking. This idea was first developed by Pavlov (1941), who distinguished between what he termed the first signalling system (neural representation of the world) and the second signalling system ("speech … being the signal of the first signals"). In a passage that seems to have prescient relevance for the present discussion, he cautioned that:

> On the one hand, numerous speech stimulations have removed us from reality, and we must always remember this in order not to distort our attitude to reality…. on the other hand, it is precisely speech which has made us human.

This idea was later turned into a developmental model by the Russian psychologist Lev Vygotsky (1962) whose seminal work, conducted in the 1930s, only became known in the English-speaking world decades after his death. Vygotsky argued that, during early child development, social speech is acquired first, and noted a stage between about two and four years of age when children speak out loud even if no one appears to be listening, a phenomenon he termed private speech. Piaget (1926) had labelled the same phenomenon egocentric speech because he believed it was the consequence of the child's failure to appreciate the absence of other people. Vygotsky's view, which is now widely accepted by child psychologists, was that private speech has a self-regulatory function and is addressed to the self. Private speech disappears later in development because it becomes internalized and silent, a phenomenon Vygotsky termed inner speech. There is not sufficient space here to detail more recent research on the role of language in thinking; suffice it to say that the ability to speak can fairly be described as a cognitive turbocharger that transforms human reasoning capacities and places us in a separate class to other species (see Fernyhough, 2016).

There has been some debate in the human experimental psychology literature about whether humans retain the associative system that governs animal behaviour. Although it seems unlikely that evolution would abandon a set of mechanisms that have proved so adaptive over millions of years, some experimental psychologists have argued that it is near impossible to demonstrate animal-like conditioning in human adults and, therefore, that human reasoning is entirely propositional (Brewer, 1974; Mitchell, de Houwer, & Lovibond, 2009). A problem faced when attempting conditioning studies with human adults is that it is very difficult to contrive experiments in which the participants cannot readily

construct accurate propositional descriptions of the experimental setup. Hence, the research findings probably demonstrate the dominance of the propositional over the associative system when the relationships between stimuli are obvious. In other kinds of experiments (for example, when people attempt to learn complex rules about the permissible order of stimuli) associative learning appears to be more efficient (Reber, 1989).

In fact, over the past two decades a large volume of evidence from many strands of psychological research have suggested that human adults possess two learning mechanisms – one fast, intuitive, associative and shared with animals, the other slow, deliberative and propositional – leading to numerous proposals for two process accounts of human cognition (e.g. Evans, 2008; Gawronski & Bodenhausen, 2006; Kahneman, 2012). When the associative system is dominant, we react in ways that seem automatic and 'from the gut', in which case our responses are said to be implicit. As we will see shortly, implicit processes appear to play an important role in some kinds of human belief systems.

An important feature of propositions is that they can be assigned truth-values. The *Stanford Encyclopedia of Philosophy* definition of belief given earlier implies that this is also a key feature of human beliefs – if we believe X we not only state X but also have the attitude that X is true. In fact, the English language (and I am sure all other languages) allows us to calibrate the likely accuracy of our assertions with a considerable degree of sophistication ("I think that", "I expect that," "I hope that", "I am sure that", etc.). The psychological processes that allow us to calibrate our certainty when making statements about the world are not fully understood and well beyond the scope of this chapter, but obviously depend on a second order ability to reflect on the statements that we make. This ability falls within the general category of meta-representation, a process that appears to be restricted to the human species and which is undoubtedly closely linked to language, although the exact relationship continues to be a subject of lively debate (Sperber, 2000).

Crucially, the capacity for metarepresentation allows us not only to calibrate the certainty of our statements but also to designate beliefs as *our* beliefs – propositions that we take ownership of. Later, we will see that this concept of ownership probably helps to explain our resistance to changing our beliefs in the face of evidence that contradicts them. It also creates the opportunity for people to make judgments about what kinds of beliefs they should have, and to actively seek to cultivate particular beliefs. For example, an anthropological study of fundamentalist Christians in the

southern states of America found that converts often did not describe themselves as believers but as people who were seeking to believe, so that the acquisition of true religious belief was seen as the culmination of a long period of effort and learning (Luhrmann, 2012).

However well established the association between the cupboard door and food may be, it seems doubtful to me that a dog, as it waits to be fed, can be said to be asserting the truth of the statement that the food is in the cupboard. The dog certainly cannot express nuanced judgments about the likelihood of the cupboard-food association being true, nor assert a claim of ownership over the expectation that the food is in the cupboard. For this reason, I think it is reasonable to say that a dog cannot believe, at least in the full sense that a human being can believe.

3.5   MASTER INTERPRETIVE SYSTEMS

The Stanford Encyclopedia definition quoted earlier notes that many beliefs are quite mundane (the examples given are that "it is the 21st century" or that "there is a coffee cup on my desk"). However, it is equally obvious that some of the things we believe are far from mundane and are in fact loaded with significance. When understanding whether there is anything unique about the delusions of psychiatric patients, the appropriate comparison may be these more emotionally salient beliefs, and in particular a class of belief phenomena that I will term master interpretive systems: *systems* because they involve not just one proposition but an organized system of generating propositions; *interpretive* because they reflect particular stances when interpreting the world; *master* because they tend to dominate all other ways in which human beings interpret the social world.

This type of belief system, which includes religious and political beliefs, is not limited to particular propositions although it includes them ("God created the world in seven days"; "Everywhere workers are exploited by the ruling class"). Rather, master interpretive systems should be thought of as clusters or networks of inter-related propositions that address multiple facets of human life and the dilemmas that arise within them. The propositions follow particular themes, for example, in the case of religion, that natural events are under the control of unseen intentional agents (Barrett & Keil, 1996; Bering, 2011) to whom we may be accountable to in an afterlife (Solomon, Greenberg, & Pyszczynski, 2015) or, in the case of political ideologies, about the just ordering of economic relations and the extent to which the interests of kin should be prioritised over those of

other groups (Haidt, 2013). Hence, the propositions within each network seem to orbit within the gravitational pull of more generalised dispositions towards the world that are rarely articulated and, therefore difficult to describe. Because these dispositions generate a repertoire of responses that can be called upon in almost any aspect of life, master interpretive systems are powerful organizational tools that can guide our actions in numerous situations and in the face of many different kinds of dilemmas, but at the cost of limiting human flexibility in exactly the way that Pavlov anticipated when describing the role of the second signalling system.

Religious belief systems, for example, provide models of the world and prescriptions for action (morality), coupled to a wide range of social practices which maintain these beliefs and which also have important social benefits (Geertz, 1966). The same is clearly true of political ideologies (Jost, Federico, & Napier, 2009); indeed, for much of human history, religious and political belief systems have been entwined to the point of being almost indistinguishable, only diverging in Europe following the French Revolution, a process which some social scientists think is now going into reverse (Micklethwait & Wooldridge, 2009). Conspiracy theories, which have often played a role in both religious and political discourse (Hofstadter, 1952), arguably also fall within this general class of master interpretive systems. Indeed, because individuals who believe in one conspiracy theory tend also to believe in others (even if they are contradictory; Wood, Douglas, & Sutton, 2012), psychological researchers have argued that conspiracist thinking cannot be to understood in terms of beliefs about specific conspiracies and should, instead, be considered a style of interpreting events in which nothing is assumed to be as it appears and world events are determined by secret, powerful institutions (Brotherton, 2015). The social element is perhaps less obvious than in the case of religious and political ideologies, although substantial social networks have arisen around some conspiracy theories (e.g. about the assassination of John F. Kennedy) and the recent proliferation of these beliefs via social media has created on-line echo chambers populated by networks of individuals who share similar convictions (Del Vicario et al., 2016).

Human beings typically define ourselves in terms of the groups to which we belong, a process known as social identification (Tajfel, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). People are capable of having multiple identities simultaneously; for example, I define myself as a father, a clinical psychologist, a university professor, British and also European. As a consequence of the human ability to assert ownership of

beliefs, master interpretive systems are often co-opted for the purpose of identity-formation, so that we define ourselves as Marxists, Conservatives, Christians, Atheists and so on. Identifying with positively valued groups can enhance self-esteem and promote physical and mental health, an effect that is most evident when people identify with not one group but many (Haslam, Jetten, Postmes, & Haslam, 2009). However, identification can also lead to negative attitudes, sometimes extending to outright hostility directed towards competing out-groups, an effect that is most likely to occur if we embrace just one type of identity very strongly. This process appears to be one reason why religious and political fundamentalisms are sometimes associated with extreme violence (Herriot, 2007).

A curious feature of master interpretive systems, most clearly illustrated by political beliefs, is that the individual propositions that are their most visible manifestation may have little logical relation with each other. For example, the distinction between left and right ideologies (so described because, in the French National Assembly at the time of the Revolution, those who defended the Ancient Régime sat on the right whereas those who supported change sat on the left) seems to be universal (Jost et al., 2009) – conservatives on the right typically (although of course not always) endorse certain economic propositions (that the free market is the most just and effective way of organizing the economy) but also certain social values (support for the family, wariness or even hostility towards assigning equal rights for sexual minorities) and certain attitudes towards national defence (typically wanting high levels of funding for the armed forces). Leftists (again not invariably) support state interventions to redistribute wealth, equal rights for sexual minorities and advocate multilateral efforts to reduce the risk of military conflict. Bearing in mind my earlier point about the limitations of questionnaires, perhaps we could say that people on the right and the left tend to generate propositions reflecting these viewpoints but, of course, the precise nature of the propositions (the draft we take to be the 'true belief') will vary between individuals (conservatives may vary in their attitudes towards specific economic policies while agreeing about the broad benefits of a free market) and circumstances (someone on the left might advocate increased spending on the armed forces in support of peace enforcement missions).

Notice that there is no obvious reason why someone who advocates the free market should also be wary about gay rights or want to increase funding for the armed forces. What binds the relevant propositions must therefore be less visible, which is why we can be confident that master

interpretive systems are organized around more generalised dispositions towards the world. Characterising these dispositions is, however, extremely difficult.

The Role of Implicit Processes in Master Interpretive Systems

Social psychologists, in particular, have made a number of attempts to classify the implicit processes underlying political and religious beliefs, for example arguing that they are related to a number of evolutionarily salient concerns such as the fear of death (Solomon et al., 2015), avoidance of uncertainty (Jost et al., 2009), or moral preferences relating to the care of others, fairness, loyalty, sanctity and the avoidance of contagion (Haidt, 2013). For each of these proposals, there is evidence that agreement with particular ideological and moral stances is associated with scores on relevant questionnaire measures (for example, that conservativism correlates with endorsement of statements about the importance of loyalty and indicative of extreme sensitivity to disgusting stimuli). In some cases, there is also evidence that 'priming' (prompting people to think about the relevant issues) produces shifts in the willingness to agree with particular viewpoints (for example, asking people to think about death tends make people endorse more extreme political views).

The problems with these accounts, it seems to me, is that they endeavour to capture within a verbal framework, processes that are largely non-verbal (indeed, this is precisely why they are said to be implicit). We therefore have a long way to go before we can characterise these processes accurately. At this stage of our understanding, it seems likely (as acknowledged by most existing accounts) that these processes have evolved to address fundamental biological and social needs common to at least all primate species, and that (as less often acknowledged) they are implemented by the associative system. To understand this idea, we can look briefly at the subtle role of disgust sensitivity in political beliefs.

Recall that one property of the associative system is that it allows organisms to assign positive or negative values to stimuli. It has long been known that mammalian species are evolutionarily prepared to learn disgust responses to noxious stimuli very quickly (a single pairing of a particular taste with a nausea-evoking stimulus can be sufficient to cause a life long aversion to whatever produced the taste; Garcia & Koelling, 1966). As already noted, numerous studies have shown that individuals who are more sensitive to disgust-related stimuli are more likely to be conservative

and hostile to out-groups (Terrizzi, Shook, & McDaniel, 2013). One possible explanation for this association is that, in our evolutionary past, the disgust response has kept us apart from strangers who might be carriers of infection. Disgust also seems to be involved in concerns about 'purity' and the rejection of sexual minorities (whose preferences may be described as "filthy", "dirty" or, indeed, "disgusting") (Haidt, 2013). Indeed, when conservatives talk about their opposition to gay rights, a visceral disgust response is often all too obvious. Hence disgust sensitivity appears to be one factor that binds conservative attitudes together.

Speculating somewhat, I think it likely that specific implicit preferences, sustained by the associative system, play a role in all master interpretive systems. Indeed, as I will explain below, this is true not only of common master interpretive systems such as religious and political beliefs but also of delusional beliefs.

3.6   RESISTANCE TO CHANGE

One of the most renown characteristics of delusions is their apparent resistance to change. As I noted earlier, this resistance may not be as remarkable as is often supposed (Brett-Jones et al., 1987; Colbert et al., 2010). Indeed, the cognitive behaviour therapy interventions that are now widely used to help patients with psychosis are specifically designed to reduce delusional conviction and are modestly effective in doing so (Turner, van der Gaag, Karyotaki, & Cuipers, 2014; Wykes, Steel, Everitt, & Tarrier, 2008). Hence, as I argued earlier, a mistaken impression of excessive delusional rigidity may have arisen as a consequence of comparing the beliefs of psychiatric patients with mundane beliefs; political and religious belief systems, which I have argued are a better comparison, are notoriously inflexible – it is rare that a political argument ends with one protagonist thumping their forehead and saying, "Doh! How could I have been so stupid?"

There are broadly two ways of explaining this kind of inflexibility, although they are not mutually exclusive. The first type of explanation appeals to the structure of master interpretive systems. As discussed earlier, their most important feature is that they do not consist of isolated propositions but, instead, should be thought of as groups of continually updated and interconnected propositions held together by the gravitational pull of implicit dispositions. Refuting any one proposition within a system of this kind will, in all likelihood, leave the remaining propositions untouched.

Even if this is not the case, it may be less cognitively effortful and more adaptive to shore up a propositional system with additional propositions if that system has served the individual well in the past. For this reason, true believers may decide that, "God moves in mysterious ways" or that the absence of evidence of a conspiracy is evidence of a conspiracy so profound that it leaves no evidence. (An interesting and historically significant real world example of the latter kind of reasoning occurred during the Reagan era, in 1976, when a CIA assessment of Russian nuclear capability concluded that they lacked an effective anti-ballistic missile system and, hence, that the Soviet government would not be able to survive a nuclear exchange. In response to the CIA's assessment, hawks within the Pentagon – who wished to justify increasing the US's nuclear arsenal – issued their own 'Team B' report, which concluded that the evidence presented by the CIA was so overwhelming and consistent that it could only be based on misinformation planted by Soviet agents (Rhodes, 2008)).

The second broad approach to explaining the rigidity of master interpretive systems appeals to emotional processes. As already noted, these systems are notorious for their ability to elicit strong emotional responses. Experimental studies confirm the everyday observation that, when people are presented with evidence that conflicts with their political convictions, they typically experience strong negative affect (Nisbett, Cooper, & Garrett, 2015), and expend considerable cognitive resources to finding reasons for rejecting or reinterpreting the evidence (Taber & Lodge, 2013; Westen, Blagov, Harenski, Hamann, & Kilts, 2006). The negative emotional consequences of encountering evidence that conflicts with preexisting beliefs also helps to explain why, when seeking information about political issues (for example, when using online resources), people spend most of their time sampling information that is consistent with their beliefs while avoiding conflicting information (Knobloch-Westerwick & Meng, 2011).

The question of why evidence that is contrary to existing beliefs is experienced as emotionally toxic has not been sufficiently addressed by psychologists. However, it is probably a consequence of our tendency to claim ownership of our beliefs, and the investment we make in constructing them. Indeed, a recent experimental study found that establishing ownership of a theory in the most minimal way (by asking people to imagine that they had personally proposed it) was sufficient to increase confidence that the theory was correct (Gregg, Mahadevan, & Sedikides, 2017).

The more we claim ownership of a belief system, and the more we view our beliefs as badges of identity that bind us to others who share similar beliefs, the more likely it is that evidence contrary to our beliefs will be experienced as painful. When defending our beliefs, we are therefore, in some sense, defending ourselves.

3.7   Delusions as Master Interpretive Systems

Throughout this account I have pointed to various ways in which delusions resemble master interpretive systems. Like master interpretive systems, delusions generally follow particular themes which almost invariably reflect universal existential challenges (Musalek, Berner, & Katschnig, 1989) or concerns about the individual's position relative to others in the social world (Bentall, 1994), for example about the trustworthiness of others (paranoia), social status (grandiosity) or worthiness of the love (erotomania). By far the most common of these delusional systems is the paranoid system, in which the individual believes him or herself to be the victim of persecution by others (Bentall et al., 2001; Freeman, 2016). Of course, like other master interpretive systems, delusions are resistant (although not completely resistant) to counter-argument, and direct challenges to them often provoke strong negative affect.

Because paranoid delusions are so common, they have been subjected to more extensive research than any other types of delusional belief. Although there is insufficient space to review this research in detail here, a consistent finding in the literature is that these kinds of beliefs are associated with strong negative ideas about the self (Bentall et al., 2001; Freeman, 2016). However, by far the majority of studies of paranoia have focused on explicit cognitive processes such as self-esteem, and very little research has considered implicit processes. Here, I would like to suggest that, as seems to be the case for other master interpretive systems, implicit processes are also likely to be important. At this point it would be useful to consider some of my own most recent studies, which have examined the role of attachment processes in paranoia.

Since the work of John Bowlby (1969) it has been known that the intimate relationships that young children (and the infants of other mammalian species) form with their parents (or caregivers) provide a template for future adult relationships. Hence, depending on the quality of the relationships they experienced with caregivers during childhood, human adults have 'attachment styles' that may be secure (the assumption is that intimate relationships will be mutually supportive and beneficial) or, in various ways, insecure (the individual expects rejection or that other people will be

untrustworthy). It is thought that specific attachment styles are associated with particular schemas or default beliefs about the self and others, so that secure attachment is associated with positive beliefs about the self and others and the insecure styles are associated with negative beliefs about the self, others, or both. Importantly, although developmental researchers have neglected the role of implicit, associative processes in attachment formation, they undoubtedly play a central role. In adults, attachments are often experienced as 'gut feelings'. Moreover, human infants form attachments very early – before they become fully verbal human beings – and non-verbal mammalian species are also capable of forming strong attachment relationships. Indeed, although dogs will never become jihadis, they form remarkably strong attachments to their human owners that mirror the attachments that human infants form towards their parents (Topál, Miklósi, Csányi, & Dóka, 1998). Hence, it is clear that language skills are not necessary in order for attachment relationships to be established.

For practical reasons, attachment styles are typically assessed in adult humans by means of questionnaires, and it is important to bear in mind the limitations of these kinds of measures discussed earlier earlier; in particular, although we may hope that these measures correlate with implicit processes they are not direct measures of those processes. These limitations notwithstanding, in my research I have found that insecure styles are strongly associated with paranoid beliefs in student samples (Pickering, Simpson, & Bentall, 2008), representative population samples (Sitko et al., 2014) and samples of psychiatric patients suffering from psychosis (Wickham, Sitko, & Bentall, 2015). Moreover, in epidemiological samples, attachment disrupting early life events, for example being neglected by parents or raised in a children's home, strongly predict the development of paranoid symptoms in later life (Bentall et al., 2012; Shevlin, McAnee, Bentall, & Murphy, 2015). Hence, there seems to be strong evidence that the disruption of attachment processes plays a causal role in paranoid delusions and, most likely, the relevant psychological mechanisms are at the implicit level.

Why Delusions Are Different: The Role of the Social[1]

Despite the important role of implicit dispositions in both widely held master interpretive systems and delusional beliefs, it is important to acknowledge that social factors are also important in shaping the precise

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[1] I am grateful to Professor Tim Bayne for discussions that helped shape the ideas outlined in this section.

expression of these belief systems, particularly in the case of the former. For example, if we take the case of religious belief systems, it is obvious that children are not born Hindu, Christian, Muslim and so on. Developmental studies have shown that, although young children typically attribute intentionality to natural phenomena, they do not spontaneously assume the existence of a hidden creator (Banerjee & Bloom, 2013). Indeed, given the historical evidence that multiple deities preceded monotheistic systems in the evolution of religions (Wright, 2009), if children did spontaneously generate religious beliefs those beliefs would surely not be monotheistic.

Similarly, although studies of the developmental antecedents of ideology show that anxious children raised by authoritarian parents are especially likely to develop conservative attitudes in adulthood (Fraley, Griffin, Belsky, & Roisman, 2012), it is implausible that children are born with an innate wish to vote for a particular political party. The social environment, conversations with relatives and peers, and exposure to information in the media all play an important role. Our implicit dispositions constrain the kinds of interpretations of the world we find most congenial or, to repeat a metaphor I used earlier, act as a kind of centre of gravity around which beliefs plucked from a rich social market place of ideas can orbit and coalesce.

The recognition that the social world must be important in shaping master interpretive systems alerts us to a potentially important feature of delusional beliefs that is not obvious from the phenomenological data, and which is sometimes thought of as trivial. Delusions, in contrast to political and religious beliefs, are idiosyncratic. Indeed, some definitions of delusion, such as that in the earlier fourth edition of the American Psychiatric Association's diagnostic manual (APA, 1994), specifically exclude beliefs that "are ordinarily accepted by other members of the person's culture or subculture". Even when patients appear to have the same delusions (as in the famous case of the three patients who believed that they were Christ and who lived on the same ward at Ypsilati Hospital in the United States; Rokeach, 1964) the delusion is not really shared (each of the Ypsilati patients thought that the other two were deluded).

Usually, the idiosyncrasy of delusions is thought to be a consequence of their bizarreness – they seem so strange that no one but the deluded patient is convinced by them – but an intriguing possibility is that their asocial nature is both their defining feature and an important part of the causal pathway that leads to them. After all, in everyday life, we calibrate

our beliefs according to the beliefs and reactions of those around us. As discussed earlier, what we believe to be factually the case is negotiated through interactions with other people, within discussions, and across multiple conversations conducted over extended periods of time (Edwards & Potter, 1992).

In the case of extreme political and religious beliefs – for example, Islamist extremism – this account is widely accepted, and lies behind attempts by intelligence services and governments to disrupt radical social networks, both in the actual and virtual worlds. Political radicalisation, just like religious radicalisation, is particularly likely to occur when the only social network that an individual encounters, and the only conversations that are heard, are all of a particular persuasion. Indeed, social psychological research confirms that people are more likely to develop extreme views when embedded in groups of like-minded people (Borum, 2011; Sunstein, 2009). The role of social identity in consolidating extremist beliefs, discussed earlier, adds to the danger that they will be translated into violent action (Herriot, 2007).

What I am suggesting here is that delusional beliefs may be different from radical beliefs, and perceived to be idiosyncratic by others, precisely because they are developed in isolation from any kind of conversation, or any kind of group to which the individual can refer to. In the absence of these kinds of conversations, there is no opportunity for consensus building or for beliefs to be challenged or modified by contrary views. Speculating further, it seems likely that this kind of isolation can occur for one or both of two separate reasons.

First, the person who develops beliefs that are later judged to be delusional may lack the cognitive and behavioural resources required to benefit from dialogue with other people. There are likely to be many psychological processes that contribute to the process of building a shared view of the world but one that is worth highlighting here is the capacity to understand the beliefs of other people, misleadingly described as having a 'theory of mind' after a celebrated article by Premack & Woodruff (1978). Numerous studies have reported impaired theory of mind skills in people with psychosis (Bora, Yucei, & Pantelis, 2009) with some evidence that this kind of impairment particularly contributes to paranoid delusions (Bentall et al., 2009).

Second, the individual may actually be isolated. There has been curiously little research into the quality and quantity of relationships experienced by people with psychosis, and that which has been carried out has

often been conducted on the assumption that mental illness leads to social isolation. However, it is known that patients with positive symptoms of psychosis have impoverished social networks (Angell & Test, 2002) and that the same is true of people who are suffering the prodromal symptoms (sometimes called an at-risk-mental-state) that precede the onset of illness (Robustelli, Newberry, Whisman, & Mittal, 2017). Isolation also seems to be associated with psychotic symptoms in the general population (Butter, Murphy, Shevlin, & Houston, 2017) and, in a longitudinal study of Swedish army recruits, impoverished interpersonal relationships was found to predict future psychotic illness (Malmberg, Lewis, David, & Allebeck, 1998).

One important implication of these findings is that much more research needs to be conducted into the potential role of social isolation as a risk factor for psychosis and especially delusional beliefs.

3.8   Conclusion

In this chapter, I have attempted to create an account of what is involved when human beings have beliefs, and then explored the implications of this account for understanding delusions. It is worth restating that we have no warrant for assuming that the English language word 'belief' must pick out a specific type of psychological mechanism. Instead, I have tried to take what we know about human cognitive mechanisms to highlight those that provide the closest fit with our ordinary language use of the word 'belief'. This has led me to several conclusions.

First, there is no ultimate version or draft of what we believe that can be written down to make some kind of list. Instead, believing is something that we do online, in concert with other believers, a process that is constantly shaped by our interactions with others in our social world.

Second, the term belief should be restricted to propositions or verbal statements; although there is a lot that is belief-like going on in household pets, it would be wrong to say that animals believe.

Third, this claim notwithstanding, implicit or associative processes that we share with animals play an important role in constraining and shaping our beliefs. These implicit processes play a particularly important role in a class of belief phenomena that I have called master interpretive systems, which includes religious and political beliefs. These consist not of single propositions but of multiple propositions tied together by particular implicit dispositions that are related to fundamental human needs. I have suggested

that the delusional beliefs of psychiatric patients are best compared to these master interpretive systems but differ from them in one important way: they occur in isolation and are not tested against the beliefs of other people.

Because delusions and master interpretive systems share many properties – particularly in respect to the underlying psychological processes and their resistance to change – it is reasonable to question the extent to which the two types of beliefs can be distinguished. Perhaps we should not be surprised by the troubles encountered when forensic practitioners attempt to make decisions about the culpability of apparently deluded offenders such as the Laffertys and Breivik. This is not to suggest that no differences can be discerned, of course, but that the distinction should not be thought of as binary.

More generally, I would like to suggest that psychopathologists might learn a lot by treating political and religious beliefs as analogues of the phenomena that they observe in the psychiatric clinic. It is striking that, to my knowledge, very little effort has been made by psychiatrists or clinical psychologists to consider the burgeoning literature in the psychology of religion or political psychology. It is even more remarkable that (despite the widespread use of the concept) there is no widely accepted psychological model of believing of the kind that I have tried to sketch out in this chapter.

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