DRAFT VERSION
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Chapter 6: Witchcraft and Sorcery

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On June 3, 2005, the UK edition of the BBC news website ran a story with the title, "Exorcisms are part of our culture"[1]. In it the reporter records details of a "deliverance" service in a London Pentecostal church that is predominantly frequented by members of the local African community. A pastor at the church described how "people are used by the devil to bring a curse or bad luck to other people's lives, even to kill them". Every Sunday, he performs a procedure used to exorcise people of evil sprits. In this church, 'deliverance' takes place when the pastor and elders whisper into the victim's ears, bidding the spirits depart. In another incident, reported on the same website on the same day, a very different technique was used: the report tells how a child was "beaten, cut and had chilli peppers rubbed in her eyes by her guardians to 'beat the devil out of her'"[2]. The guilty carers were imprisoned and the child was placed in foster care. The incident shocked and appalled the authorities and the wider British and African communities.

In many such situations, involving apparently extreme and cruel actions by those who are deeply committed to religious beliefs or radical political causes, questions often arise for those who do not share such attitudes and beliefs. How can these acts be understood? Are the participants and perpetrators insane, or immoral, or both? What explains the attraction of such practices, such as the weekly fresh public demand for deliverance? Are the congregations brainwashed and deluded by the persuasive words and charismatic appeal of a group of charlatans? Are they blinded by a religious fanaticism?

The purpose of this chapter is to consider aspects of these incidents from a perspective informed by recent discoveries in the cognitive sciences. A cognitive approach to human behaviours attempts to account for aspects of cross-culturally widespread features of human thought and behaviour by identifying and describing the cognitive structures and processes that facilitate their transmission. Cognitive scientists work from the assumption that the information processing devices of the human mind evolved in response to selective pressures in our ancestral environment (e.g. Mithen 1996). These devices form part of our universal biological heritage and are used to process information about the world we live in. The information that our minds process from the environment now often differs from the information that the mechanisms were selected for. Nevertheless, the capacities of these devices and their evolutionary history explain, in part, why aspects

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[1] http://news.bbc.co.uk/1/hi/uk/4596127.stm (accessed 11/08/05)
[2] http://news.bbc.co.uk/1/hi/england/london/4607435.stm (accessed 11/08/05)

of human culture (e.g. religious ideas, social relations, moral proscriptions) across the world display fundamental continuities and are readily transmitted among and between generations.

This chapter contributes at least partial answers to the above common lines of questioning so often generated by situations in which other humans appear to be so different from oneself. It does so by considering the cognitive processes that underpin witchcraft beliefs and the apparently extreme reactions to them. Setting to one side personal moral objections to the cruel practices that may result from adherence to such beliefs, it seeks to understand the mind of the perpetrators, and to identify what mental structures are activated by such ideas and what makes the ideas compelling. This is not an interpretivist endeavour, however. It does not attempt to see and portray the situation from the Other's point of view, and thereby to draw attention to the moral innocence of these ideas and behaviours within the context of the Other's worldview. It simply attempts to portray a small part of what it is to be human in today's world, recognizing that our social cognition evolved in a context very different to the complex social world we now inhabit, and that this may sometimes predispose us to behave in certain ways. The final sentence on the moral acceptability of such beliefs and behaviours may be delivered without this knowledge. Nevertheless, by considering some of the mechanisms of the mind that are in part responsible for their cross-cultural prevalence, this account may be relevant to those seeking to identify fundamental causes for these behaviours and to influence their prevalence.

Typical reactions to witchcraft beliefs in the modern world echo scholarly reactions to early explorers' and missionaries' reports of religious practices in cultural contexts far from home. People were often defined by their exotic beliefs as irrational, if not insane, by turn-of-the-century 'armchair anthropologists'. One of the first British anthropologists to carry out long-term field research in Africa, however, was at pains to correct the assumptions that lay behind such reactions. "The Nuer", wrote E.E. Evans-Pritchard, "are undoubtedly a primitive people by usual standards of reckoning, but their religious thought is remarkably sensitive, refined and intelligent" (1956: 311). Elsewhere, he describes the reasons the Azande give for their behaviour as "intellectually coherent" (1976: 159). Beliefs in witchcraft, divination and magic, at least in Africa, could not be taken as indicative of illogical and irrational modes of thought.

Beliefs that specifically entertain the possibility of witchcraft activity are less common in the modern West than they were four centuries ago and in other parts of the world today. Nevertheless, the incidents reported on the BBC website are not isolated affairs. The vast ethnographic record of witchcraft, possession and exorcism practices worldwide strongly suggests that their presence is extremely widespread, if not universal (e.g. Bourguignon 1968; Cuneo 2001; Kapferer 1991; Luhrmann 1989). Michael Cuneo's (2001) ethnographic fieldwork and sociological analysis of exorcism in the United States of America show that the modern world has by no means discarded beliefs about possessing spirits. Indeed, their high incidence in some regions and regular recurrence across cultures and historical periods are suggestive of an underlying, perhaps universal, psychological predisposition to create and transmit such concepts.

The ethnographic facts demand an explanation that considers the pervasiveness of these beliefs cross-culturally. Questions that limit the scope of analysis to the behaviours of an apparent minority group within a cultural context that is unrepresentative of the incidence of organised witch and exorcism beliefs globally will ultimately fail to provide satisfactory answers. Parochial accounts must give way to, or at least be complemented by, accounts that can explain the recurrence of these beliefs across cultural contexts and throughout history. This chapter considers evidence that suggests that there are specialised cognitive structures that favour the spread of beliefs in witchcraft and witch spirits. These structures' outputs are not limited to the domain of "witch" concepts alone, however. They support mundane thinking, about other kinds of social categories, which is part of normal cognition and is fundamental to everyday perception and representation of the social world[3].

This kind of mundane thinking underlies intuitive explanations not only for others' behaviours, but also for personally significant events. The attribution of one's misfortune to the actions of another social agent, whether it is a spirit who is using the body of another person, or a non-agentive or unintentional force (e.g. as with notions about the 'evil eye'), or an enemy with an axe to grind, is intuitively compelling for several reasons. Common sense accounts, now supported by growing evidence from social psychology, tell us that people are quick to point the finger, slow to recognise their own flaws, or are simply "bad losers" when things go wrong. Such responses to misfortune are important for maintaining healthy levels of self-esteem (Blaine and Crocker 1993; Greenwald and Banaji 1995). Cognitive scientists of religion have added to the work of attribution theorists by identifying the likely mechanisms that underpin intuitions about causal associations between 'random' occurrences and the actions and intentions of other agents with special access to knowledge and special powers, e.g. gods, spirits, witches and sorcerers (Barrett 2004, Boyer 2001, Bering 2002). This chapter aims to develop this work, specifically by refining existing descriptions of the ways people represent the causal significance of different kinds of agency in explaining personally significant events.

The central claim of this chapter is that everyday reasoning processes underpinning pervasive concepts of race and gender are also activated in witch concepts. Notions about witches, race, gender, and other natural-like categories (e.g. ethnic categories) are characterised by "essentialist" reasoning (e.g. Hirschfeld 1996). Members of racial categories, for example, are perceived as such by virtue of possessing something inherent – the 'essence' – that defines category membership and that causes category-specific properties to emerge (e.g. features of appearance, behavioural characteristics) (Gelman

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[3] The approach adopted in this chapter thus diverges considerably from conventional anthropological treatments of witchcraft and sorcery in which these phenomena are described and accounted for primarily, or exclusively, in terms of local socio-historical processes (e.g. Stewart & Strathern 2004). I do not see these approaches as necessarily incommensurable. I do, however, attempt to offer an account that, although inevitably partial, explains certain cross-cultural and historical regularities among witchcraft and sorcery phenomena and between these phenomena and other similar widespread forms of thinking about the social world. These accounts may potentially inform one another in instructive ways, but at the very least can jointly provide necessarily more comprehensive theories of cultural transmission.

2004). As we shall observe, witch notions are often similarly 'essentialised' – witch essence separates those who are witches from those who are not. Furthermore, witch essence causes witchcraft to happen, sometimes without the volition or awareness of the witch.

The cognitive mechanisms engaged in attempts to account for events in terms of others' inherent essences (e.g. witchcraft) differ, therefore, from those that are operative in explaining one's misfortune in terms of the malicious intentions of others (e.g. sorcery). Both sets of mechanisms form part of ordinary cognitive equipment that is available to all human beings and that is crucial for inferring, acquiring and organising information about the social environment. Furthermore, because essences and intentions are hidden from view, it is often by means of ritual practices that the causes of unfortunate events are ascertained (e.g. oracular divination), and the situation resolved (e.g. counter sorcery, exorcism). This chapter seeks to describe fundamental aspects of cognition that undergird people's beliefs about witches, sorcerers, and that give rise to ritualized responses concerned with the revelation of these social threats. Without these universal features of cognition, such ritual practices would be meaningless, unnecessary and probably, therefore, absent from the cultural record.

Thinking about persons and things

Many events may potentially be explained in terms of both physical and social causes. If you wish to explain the event, 'Joan crashed her car'', you might appeal to the laws of physics, ultimately reducible, for example, to the mathematics of momentum, gravitational forces, and so on. In addition, you might consider Joan's probable intentional states at the time and attempt to ascertain what she may have been trying to do immediately before the crash, or even whether she had intended to crash the car. You may also understand Joan's behaviour not only as dictated by her specific intentional states preceding the event, but as the effect of enduring and stable traits, e.g. perhaps she is a generally clumsy, reckless, or easily distracted. Finally, Joan's behaviour may be perceived as the effect of her membership in a particular social category. Being female, for instance, may be perceived as having a causal association with poor driving skills. The causalities identified in the non-physical accounts (i.e. mental, trait and social) are not always independently generated, but may overlap. For instance, personality characteristics are often inferred from social category stereotypes (see Fiske 1995).

Research in cognitive and developmental psychology indicates that reasoning about social causes for events activates different cognitive processing mechanisms from reasoning about mechanical, physical causes. Evolutionary psychologists have argued that the mind is composed of a wide range of special-purpose processing devices, each of which is the evolved product of adaptation to specific challenges in the ancestral environment (see Hirschfeld and Gelman 1994). These devices are described as "providing the basis for competencies that children use to think about complex phenomena in a coherent manner using abstract causal principles" (Sperber and Hirschfeld 1999). Biological properties of living things (e.g. growth, reproduction, etc.), for example, are handled by our "naïve biology". 'Naïve psychology' represents a

different knowledge structure from 'naïve physics' (Clark 1987; Hayes 1985). Studies from the field of developmental psychology have demonstrated that, from a young age, children grasp the causal importance of actions on the environment and intentions to their instantiation in action, and distinguish this causal sequence from the mechanical causation which underpins the motion of non-agentive objects (e.g. Gopnik, Meltzoff and Kuhl 2001). The relevant literature for this distinction has been summarised and discussed widely in writings on causal cognition, (e.g. Sperber, Premack and Premack 1995). I will therefore limit the following brief synopsis to the most relevant findings for our purpose here.

The mechanisms that enable us to make inferences about other people's intentions are widely referred to by psychologists as 'Theory of Mind' (ToM) (see Barrett, and Guthrie, both this volume). Since people's thoughts cannot be directly observed, they are necessarily inferred from their behaviours. It is in this sense that intentional states may be understood as "hidden" or non-observable. This is an important feature that we shall return to later in the chapter. The occult nature of the intentions of other agents, particularly one's enemies, in part create the demand for certain kinds of divinatory techniques encountered across the globe.

Psychologists have identified a number of other domains of knowledge that may be organised by distinct cognitive devices. There is some evidence pointing to the presence of systems dedicated to dealing with number (Gelman and Brennan 1994; Gelman and Gallistel 1978; Gelman and Greeno 1989). Anthropologist Lawrence Hirschfeld has argued for the domain-specific processing of *social-category information* (e.g. Hirschfeld 1994, 1996). That we process information about others according to categorical distinctions and group membership is well established within the fields of social psychology and social cognition. The rules that define these processes of categorisation and that underpin the selection of category content have been the focus of a long debate. As we shall see, however, some of the ideas and findings that have emerged may be important for explaining the causal attribution of personally significant events to the *un*intentional actions of others.

Thinking about social groups

To begin considering how we parse and understand the social environment it may be helpful first to glance around the place in which you are reading this book and consider how you might describe the physical objects. You will find yourself readily using category labels to describe objects that are similar to each other, but not necessarily identical. There are a few other books, perhaps, and a number of chairs. Perhaps you can hear cars and other vehicles outside. Are there any other people around? How would you describe them? We can, of course, describe any object – person or thing – by its physical appearance, and use the same description for another object judged to be similar in that respect. Both people and batteries, for example, may be described as 'fat' or 'small'. In this way we use the same descriptive labels across many different kinds of objects. Similarly, we often categorise objects into discrete kinds on the basis of surface or functional similarities, e.g. chair, book, etc.

But why do we have a stable and widespread *chair* category, but rarely, if ever, a category that combines the concept of 'battery' and the concept of 'person'? Perhaps it is because they don't have much in common. Yet batteries and people are similar in a variety of ways – both are smaller than mountains, both exist on this planet, both are physical entities that can be seen and touched, etc (Murphy and Medin 1985). The list of similar attributes could be extended much further, but, as Douglas Medin observed (1989), attribute matching is not categorization. Categorization processes are driven by basic explanatory reasoning about the relationships between attributes (e.g. between having wings and feathers, and flying) within a particular structure (i.e. bird). Hence, categories are not merely generated according to the sum of independently represented features. As Medin suggests, "Inference and causal attributions drive the categorization process…Similarity may be a byproduct of conceptual coherence rather than a cause… concepts are organized around theories and theories provide conceptual coherence" (in Hamilton 2005:121-2). Thus, while similarity of properties is an important feature of category membership, these properties are not represented as independent but are held together by inter-property relations. Knowledge (intuitive or scientific) of how the particular properties within a structure affect each other drives the selection of relevant similar attributes and promotes the establishment of categories.

Consider the following experiment carried out by Medin and Shoben (1988), revealing how theories affect judgments of similarity. Participants judged the terms *white hair* and *grey hair* to be more similar than the terms *grey hair* and *black hair*. But they judged the terms *white clouds* and *grey clouds* to be less similar than *grey clouds* and *black clouds*. These results suggest that the judgments about white and grey hair are theory-driven (i.e. according to the principles of aging) in a way that white and grey clouds were not. It seems, then, that what we know about the world and how it works (e.g. intuitive physics, biology, psychology) drives concept and category formation. The principles that are perceived to underlie correlated attributes determine which correlations are salient. This may explain why we have the categories we have and why some are more stable and pervasive than others.[4]

We are still some way from explaining the relevance of theory-driven concept and category formation to notions about witches, but we can now consider what all this means for the everyday understanding of the social environment more generally. Social perception is governed by heuristic principles that help to simplify the complex social world we inhabit. Impressions, for example, are the building blocks of mini-theories about individuals. It is on the basis of impressions about character that we may interpret and predict others' behaviours (Gilbert 1998). Without this capacity to form and subsequently access impressions, there would be little continuity between separate social encounters with a particular individual – each meeting would require us to abstract a

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[4] The prediction here is that categories formed from intuitive knowledge about basic physical, biological and psychological cause-effect relationships are likely to be found in all cultures, and should display a high degree of organizational similarity, e.g. taxonomies of living kinds. Other categories and sub-categories may have only limited relevance within a specific set of circumstances affecting a particular population, e.g. categories of infectious disease.

character profile of the person from their actions. The ability to form and collate impressions rapidly on the basis of limited information provides us with well-organised, easily accessible person-schemas of individuals that we use to interpret and predict subsequent behaviour (Andersen et al 1995).

Stereotypes are schemas of social categories and as such constitute another set of guiding principles in social perception (e.g. Johnston & Miles 2003; Wittenbrink, et al 1997). They include the perceptions, beliefs and expectations that a person has for members of the target category and may have a strong influence on first impressions. A person will often assume that all members of the category share certain characteristics. Although this assumption is often false and produces biased inferences and errors of judgment, it reduces the cognitive effort that would be required for complex tasks of assessing others as individuals on the basis of their every action, thereby enhancing cognitive economy (but not necessarily empirically-determined accuracy). Stereotypes provide information about and shape attitudes toward target-category members without recourse to individuating information about any particular member. They may pick out correlations of believed/perceived/expected physical similarity, e.g. 'all Scandinavians have blond hair'. They may concern the correlation between a particular category of people (defined by intrinsic qualities) and occupation, e.g. 'male' and 'car dealer', or between a particular category of people (defined by extrinsic qualities) and character, e.g. 'second-hand car dealer' and 'untrustworthy'.

Why are social categories, defined by intrinsic or extrinsic qualities (e.g. by colour, occupation, gender), perceived as discrete, bounded entities? What holds them together? Consistent with the now widespread recognition that concepts are knowledge-based and embedded in theories about the world, a number of psychologists have seriously considered the possibility of such social categories arising, not out of the matching of perceived attributes, but out of theory-like principles. The term, 'psychological essentialism', coined by Medin and Ortony (1989) refers to people's belief that the social (and biological) domain may be parsed according to fixed, internal essences[5]. The essence is sortal (i.e. it serves to define categories) as well as causal (i.e. it has consequences for category structure) (Gelman 2004). Hirschfeld writes, "Essential properties are those properties in the absence of which something would not be a member of that category" (1998: 54). So the notion of essence as a defining property is accompanied by notions of essence as the property that caused the thing to be the sort of thing it is. Hence, the thing that makes a leopard a leopard, and that causes the leopard to develop its species' characteristic spots, is represented as a kind of 'leopard essence'.

Not all generalizations and stereotypes are derived from essentialist reasoning, however. That a car salesman is likely to be untrustworthy appears to be what Hirschfeld has called an "empirical summary" (1995: 319) – a prediction based on behavioural regularities that are not perceived to rest on an underlying causation. Also, adults may consider occupation (an extrinsic quality) to be less important for identity (that aspect of the

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[5] Some have argued that in addition to humans and animals, tools and objects also are construed in terms of essence. Gelman and Bloom suggest that children are 'naïve essentialists' – "they seek to understand the superficial properties of objects in terms of deeper, more essential aspects of their nature" (2000: 100).

person which remains constant throughout life) than corporeal features such as skin colour and body build. Skin colour and body build, in turn, are conceptualised as having rather different causal significance for behaviour and identity. These distinctions between causal significance for identity of different social properties (i.e. between physical appearance and occupation, and between different aspects of physical appearance, e.g. skin colour and clothing) appear to emerge early in childhood. When making judgments about identity, preschoolers distinguish between the importance of biological properties and occupational categories. For example, children appear to distinguish between corporeal features (e.g. skin colour) and non-corporeal features (e.g. uniforms) as properties that determine enduring identity (Hirschfeld 1995). This research indicates that young children between the ages of 3 and 7 perceive the inheritance of physical and behavioural properties between generations and the natural changes that occur across the lifespan as lawful and non-random and that they attribute these processes to an intrinsic quality or essence. Tests regarding their knowledge of non-human kinds demonstrate similar reasoning processes (Gelman and Wellman 1991). Similar developmental findings have been reported in cross-cultural studies (Atran et al 2001; Astuti 2001)

Hirschfeld interprets these results as pointing to an independent cognitive competence for essentialist thinking about natural-like categories in the social world (1996). Earlier models of the development of racial categories posited that, in the course of development, theory-like knowledge about biological species is transferred to the human social domain, thereby providing a theory (of essences) to explain observations of physical variation (Atran 1990, Boyer 1990, Rothbart and Taylor 1990). In other words, notions of essence and their contribution to growth processes and the inheritance of category-specific physical characteristics are put to the task of explaining observable differences of physically-defined social categories. The findings mentioned above by Hirschfeld and others suggest, however, that young children's thinking about race is essentialist from an early stage and not attributable to the observation of physical differences - children aged three weigh skin colour more heavily than body build when making judgments about a person's identity. Hirschfeld's most controversial claim, therefore, but one that empirical investigations so far appear to support, is that essentialist thinking about natural-like social categories[6] is underpinned by a domain-specific competence for the social domain.

If this is correct, our perception of others as members of natural categories develops early in childhood and delivers judgments that are theory-based, enduring and spontaneous. In a series of studies, Dunning and Sherman (1997) found that tacit inferences about natural-like and occupational categories creep into people's judgments and predictions of others' behaviours spontaneously and without prompting. In one study, results showed that participants inferred different information about a person's behaviour depending on whether the person was male or female. Those participants who scored low on a sexism scale made an equivalent number of gender-based inferences as those who scored more highly. Explicitly expressed commitment to gender egalitarianism, therefore, made little difference to the degree to which stereotype-driven tacit inferences were made.

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[6] Hirschfeld identifies four areas: age, gender, race or ethnicity, and kinship.

Thinking about witches, sorcerers, birth signs and spiritual kinship

How does our natural propensity to partition the social world according to a commonsense social ontology inform our understanding of the spread of religious and magical notions about witches and exorcism? Over the last decade, scholars working within the area of cognitive science of religion have offered novel cognitively-informed hypotheses concerning the spread of religious concepts (e.g. about knowing gods, vengeful spirits, crying statues, sacred artefacts, etc.). This work proposes that the form and spread of such concepts are constrained by tacit, intuitive ontological knowledge about the world, which begins to develop from very early childhood. Dan Sperber (e.g. 1996), Pascal Boyer (e,g, 2001) and others (e.g. Barrett 2004; Slone 2004) have argued that this kind of intuitive ontological knowledge provides much of the information contained within notions of spirits and gods and special objects. The most easily transmitted religious ideas diverge only slightly from this basic knowledge about how the world works. Spirits and ghosts, for example, are only minimally counterintuitive in that they are largely consistent with the category of 'person', but they lack the property of physicality. Hence they can be reasoned about in much the same way as normal persons, e.g. they think, have feelings, know, see, etc. and act on the basis of their beliefs and intentions. Spirit concepts may also demonstrate counter-intuitive biology. For example, in some places it is believed that spirits never die, or never age, and so on. The successful transmission of such ideas depends upon the activation of a wide range of intuitive assumptions that are attached to a particular domain concept, (e.g. persons, objects) *and* upon the violation of one or more of those assumptions (e.g. invisible person, seeing stone). Little novel information has to be learned and rehearsed in memory as the new concepts already largely fit with intuitive knowledge. Violations of that intuitive knowledge arrest our attention and increase the salience of these concepts in certain situations (e.g. the 'ghost' concept may become relevant when things go bump in the night).

Psychological essentialism for social groups or 'naïve sociology' (Hirschfeld 1999) leads us to assume that the social world may be parsed according to natural-like categories, which have an underlying, non-observable reality. In many cases this reality, or causal essence, is in fact not a true natural reality, e.g. intuitive representations of race have no corresponding biological reality. But there is a *perceived* causal correlation, for example, between perceived racial differences and enduring traits. The putative causal essence, in these cases, is hidden from view, but it is what defines the person as belonging to the particular category, and guides expectations about the person's behaviours. As we have seen, such notions develop early in childhood, at least for notions of race, and for biological categories. Within the social domain, essentialist reasoning is the term used to describe processes of perception, representation and interpretation that follow from the parsing of categories according to a perceived reality or nature that cannot be directly observed. The ways in which essentialist categorization is employed is similar across different categories – membership in a group may have significance for identity and interpretation of the behaviours of any one member. Hence, if I tell person A that person B is a Blah, and that a characteristic feature of a Blah is a hook nose, and that Blahs are more violent than non-Blahs, certain inferences might be made readily and intuitively

from this information without further explicit instruction. Person A, for example, may readily and intuitively assume that there is a causal (rather than accidental) connection between having a hook nose and being a Blah, and between the whatever-it-is that makes a Blah a Blah and Person B's violent behaviour, and that all Blahs look and behave in the same ways in these respects, and that Blah-ness is an enduring property without which a Blah would not be a Blah. Thus, on the basis of a partial description about the Blah category a host of assumptions about Blah essence may be mobilised. In this way the acquisition of ideas about essentialist categories requires only minimal novel input.

This may help us explain in part the pervasiveness of essentialist reasoning not only for gender, race and ethnic categories but also for traditional concepts about witches as natural-like categories, 'gods-of the-head' (see below) and even zodiacal categories. The following section considers pertinent anthropological research on such categories and their description and use within specific cultures. As will become clear, there are aspects of these descriptions that point to widespread similarities for reasoning about certain categories, whether in the UK or Africa or anywhere else in the world, that are underpinned by ordinary cognitive function.

Evans-Pritchard offers a description of witches among the Azande as people who can "injure others in virtue of an inherent quality" (1976:1). Witchcraft substance, believed to take physical form in the abdomen of the witch, is hereditary, passed from mother to daughter and from father to son. The only way conclusively to confirm the presence of the witchcraft essence is by examination, usually post-mortem, but divinatory methods are also employed. Thus, nobody can really be sure who is and who isn't a witch, except by consulting the poison oracle. The poison oracle often surprises the suspected witch – although Zande are quick to accuse others of having consciously performed witchcraft following the oracle's verdict, they appear to be genuinely surprised when they are among the accused. Nevertheless, no one can prove that he is not a witch simply through introspection. Anyone may possess witchcraft substance without awareness and although it may remain 'cool', or inoperative, it may cause him to do things of which he has no consciousness memory. Indeed, the witchcraft act normally occurs when the witch is sleeping. Therefore, despite any offence that might be taken from the accusation, one should humbly accept the charge and perform the reconciliatory ritual gesture of blowing on the wing of a chicken, presented by the victim. Evans-Pritchard sums up Azande ideas on the subject as follows: "A man cannot help being a witch; it is not his fault that he is born with witchcraft in his belly. He may be quite ignorant that he is a witch and quite ignorant of acts of witchcraft. In this state of innocence he might do someone an injury unwittingly, but when he has on several occasions been exposed by the poison oracle he is then conscious of his powers and begins to use them, with malice" (ibid, p.58).

Witchcraft essence is inherited and its intensity is variable according to the proximity of kin relations. Hence, all the sons of an identified witch may be suspected of possessing witch substance but their paternal cousins and distant kin may not. The substance is, according to this view, really an essence that defines members of a *witch* category. Although it may be expressed in terms of its physical instantiation in the abdomen, one does not inherit one's father's substance as one may inherit his belongings. Witchcraft in

this regard more closely resembles notions of kinship, as something 'in the blood', and constitutes a similarly natural-like category. It is a causal essence that produces observable effects ("one knows a witch by his red eyes" 1976: 2) and behaviours, but is ultimately only knowable through consultation with the oracles and post-mortem examination.

Similar beliefs about witches are held throughout many of the world's populations. Among the Akan of Ghana, witch essence is represented as a spirit that can be inherited at birth. It may also be passed on with belongings at death (sometimes impregnated in the belongings), breathed into another person, caught through contagion with objects onto which witches have transferred their witchcraft, and it may be intentionally bought or acquired (Debrunner 1961). The Zulu witch, according to Berglund, may infuse her child with "certain medicines pertaining to witchcraft" (1976: 274) through incisions around the anus. The witchcraft, or *ubuthakathi*, is then developed through training later in life. This *ubuthakathi* is represented as an "incarnate power in men which may be geared toward harm and destruction" (ibid, p.266). Witches are thought to remain witches always and thus the only way to remove the witchcraft is to kill the witch. There are also elaborate ideas about the activities and superhuman capacities of witches among the Bare-'e-speaking Toraja people of Indonesia (Downs 1956). Here "witchcraft was said to be "a gift from the Gods" (*pombai lamoa*), and in general one was either a witch by nature or became one by contagion... [I]n contrast to sorcery, witchcraft could not be learned, and ordinarily not cured" (ibid, p.41).

In medieval Europe, witches were often accused of wilfully entering into pacts with the devil. Writing in 1602, Henri Bouquet considered the importance of sexual intercourse that was believed to be a key characteristic of this relationship and developed the bond between witches and the devil: "the Devil uses them because he knows that women love carnal pleasures, and he means to bind them to his allegiance by such agreeable provocations… there is nothing which makes a woman more loyal to a man than that he should abuse her body" (in Levack 2004: 80). Part of the abuse took the form of the 'marke', which, according to Richard Bernard (1627), the devil leaves on the witch and may appear as a "little teate, sometimes but a blewish spot, sometimes red spots like a fleabiting". He added that although witches have them taken away, "they grow againe and come to their old forme" (in Sharpe 2001: 120), an idea that corresponds to essentialist notions of 'witch essence' as the entity that not only sorts witches from non-witches, but that causes witch-typical properties to emerge and be sustained (Gelman 2004:405).[7]

Viewing witch beliefs within a cognitive and cross-cultural context can help us to begin to appreciate the implicit reasoning processes underpinning them. And it may help us to understand more fully the thinking behind the violent exorcism of the unfortunate young

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[7] Widdowson (1973) lists other characteristics that formed part of the witch stereotype at the time and which appear in modern folklore; "Extreme ugliness, bodily deformity of all kinds, birthmarks, warts and similar features" (1973: 202). He continues, "They are usually old, wrinkled, bent, crippled and reclusive. They often dress in dark, dirty, ragged clothes. They may mutter to themselves or display other signs of abnormal or antisocial behaviour" (ibid.).

girl in London, described above. People may be witches without being aware of it and without culpability. They may be born as witches, or may catch a spirit or essence of witchcraft through no fault of their own. Once someone is identified as a witch, however, he/she is a potential danger. Often this revelation alone is sufficient for people to take measures to eliminate the person or, if possible, the witchcraft. Witchcraft, whether it is called *ubuthakathi* (Zulu), *mangu* (Azande) or *ndoki* (West Africa), defines a particular social category as a natural-like type and is the substance and power that causes other category-typical activities and features to emerge (e.g. 'bewitching', red eyes, etc.). In this respect, the concept of witchcraft is a natural, but not an inevitable, product of normal cognition employed in the categorisation of the social domain into natural-like types (e.g. by gender, race, etc.). Beliefs in witchcraft essence are not universal (i.e. not all people everywhere entertain the possibility of a "witch" category), but where they do exist, they are the product of normal cognitive resources for parsing the social domain. Because the category label, *witch*, is underpinned by normal cognitive functions, which readily deliver a vast array of assumptions and inferences based on perceived essence, there is reason to suppose that many other similar kinds of categories may be found across the ethnographic record. While basic notions about race and gender may be universal and develop early, other learned or perceived natural-like categories may harness exactly the same cognitive resources. Depending on their social surroundings, people may essentialise members of different caste groupings, religious traditions, accent and dialect groups and so on. Depending on the religious or cosmological beliefs they hold to, they may define themselves and others as members of a group by virtue of their zodiacal sign and the specific date and time they were born.

Similarly essentialist categories are found in Brazil, where I carried out eighteen months of fieldwork. Here people of the Afro-Brazilian traditions define themselves in terms of kinship with their *orixá* deities. As sons and daughters of particular *orixás*, they carry the essence of their *orixá* (called *orixá de cabeça*, or *orixá* of the head) and thus demonstrate predictable and typical character traits and physical features. Sons and daughters of Iemanjá, the *orixá* of the rivers and water, will thus have similar features of appearance and/or character and their behaviours may be attributable to their kinship identity with the *orixá*. I observed how people often perceived the influences of the *orixás* in the mundane features of personality and character, and predicted and interpreted people's actions as a direct effect of this identity. The *orixá* to which one belongs is normally identified through the divination techniques known as "the throw of the cowries", but this revelation is often preceded by much guesswork among community members as to the identity of the *orixá* that will be named for a given individual.

What is common to these modes of categorization (e.g. in terms of orixá kinship, star signs, and Azande and Zulu witch essence), is the assumption that there is something about membership of the category which is inherent and stable, which all members share, and which causes the emergence of other category-typical properties. It is the typicality of these properties that facilitates the prediction and interpretation of the behaviour of any one member without recourse to individuating information. These properties also facilitate the identification of members (e.g. being bisexual is not conclusive proof that one is the son of the *orixá*, Oxumaré, but it might be a good rule of thumb to work by and

is indeed used as such by adepts and in popular Afro-Brazilian magazines, e.g. *Orixás*). The essence itself is ultimately unknowable. Just as one cannot be entirely sure that a dark-skinned person is 'black', so one cannot confirm on the basis of outward appearances and activities and behaviour alone the presence of witch essence, the spiritual kinship of the Afro-Brazilian religionist, or which sign the sun was in when a person was born. Whatever this "something" is, and however it is described – as an essence, cosmological pre-determination, a physical substance, a biological association – it is perceived as a non-obvious, defining, determining, natural-like entity. It occurs without teaching or intention. You may be a witch and not know it until you go to live with the Azande, or be kin to an orixá and discover it only on reaching Brazil.

We can now begin to appreciate that there are potentially many ways in which to account for people's behaviours and for events in the world, e.g. through physical or mechanical causation, through intentional causation, and through the presence of causal essences in individual members of social categories. So far we have looked at only a few instances of social categories that are perceived as natural-like and at the ways in which membership in the category (and presence of the essence) may be implicated in unfortunate events (for themselves and for others. For a cognitive account of this, see Barrett 2004). Furthermore, only some aspects of these categories have been considered. It is worth emphasizing here that essentialism is not the only form of reasoning underpinning witchcraft notions, nor does it explain every aspect associated with belief in witchcraft. It is, however, a necessary part of conceptualising witches, as a generic category, and of organising knowledge about them and their activities. Reading further into the Azande and Zulu notions about witchcraft, it becomes apparent that there is much more going on than meets the essentialising eye in the identification of witches and the attribution of misfortune to their deeds. According to Evans-Pritchard, Azande are only interested in *particular* instances of witchcraft (who did what to whom) and not in the presence of witchcraft in general. Zulu train in the workings of witchcraft and learn how wilfully to use it against others. Azande often say that as one grows older, the witchcraft substance grows larger. Many witches are described in the local accounts as consciously and wilfully targeting their victims. There is clearly more at stake here than the presence of witch essence alone. Individuating information about skill, experience and intentionality in action is relevant and important for victims' decision making about how to resolve the situation, how to order their social relations, and how to avoid repeat incidents in the future.

Azande apply two models of causation simultaneously to witchcraft activity. Witchcraft exists by virtue of an essence that can work its effects through the unwitting behaviours of the witch. Yet these effects are also understood as being the outcome of intentional plotting by one's enemies. This latter aspect of witchcraft does not depend for its conceptual coherence upon essentialist forms of reasoning, but upon Theory of Mind. As noted above, reasoning about people's behaviours as the outcome of their intentional states requires a specific set of cognitive capacities that form part of normal cognition. These capacities handle the representation of other people's beliefs and desires. ToM identifies intentional states as the causal locus of people's observable actions and statements, and generates inferences about their specific character (see Barrett, and

Guthrie, both this volume). Without ToM abilities we would be unable to detect sarcasm, to read between the lines of what people are saying, or to see any event or behaviour as the outcome of belief-desire psychology. We would represent the social world not as full of social actors – people consciously engaging with one another – but comprised of mindless automata.

It is ToM that enables people readily to grasp the threat of the sorcerer. Indeed, sorcerers normally require no special innate powers in order to act, but only knowledge of the ritual procedures and spells to bring about their desired effects. According to Berglund, the Zulu distinguish between *ubuthakathi* and *abathakathi*, translated as 'witchcraft' and 'sorcery'. There are two key distinctions of relevance to explaining the causal source of their special powers: while witches harbour a substance (identified by diviners), which is the defining criterion for the witch category and which 'never comes out of them', the power of sorcery may be used by anyone as and when it is needed. The two categories diverge along lines of inherence[8] and immutability, elements that are characteristic of essentialised social categories. Berglund writes, "Medicines can be obtained from a herbalist by practically anybody and the outcome of sorcery depends neither on the sorcerer nor on the herbalist who knows how to manipulate the power of medicines. In sorcery the power is in the medicines…A manipulator can one day be the sorcerer who supplies medicines towards harmful ends and assists his client in the manipulation of the powers. But on the following day he is the herbalist who offers *imithi* to cure the harm of yesterday" (1976: 267). To put it crudely, a sorcerer may be defined by what he or she does (and knows), but a witch is fundamentally defined by what he or she is.

The clear-cut distinction between witchcraft and sorcery, as defined by the Zulu, is not a feature of all cultures where both kinds of activity may be found. Among the Azande, essentialist forms of reasoning and reasoning about people's intentions are combined in notions about witches' activities. That witchcraft activity is normally considered to be the result of both hereditary witch substance and malicious intent generates some degree of theoretical inconsistency in their accounts for specific instances. Evans-Pritchard observes, for example, how the positive identification of witchcraft substance in one's forbears is of little interest to the Azande. "It is generally not even known, for it has no significance either to their sons or to other people since no one is interested in the question whether a man is a witch or not. To a Zande this appears an entirely theoretical question and one about which he has not informed himself. What he wants to know is whether a certain man is injuring him in a particular situation at a particular time" (1976: 63). Therefore, although it is impossible for someone who is not a witch - by essentialist definition - to perform witchcraft, further conditions of the social context may determine whether or not any particular witch is to be feared. A witch with neither enemies nor cruel intentions is still a witch, just as a lion without teeth is still a lion. This may be readily represented in essentialist terms, but the relevance of the category to everyday causal attributions for behaviours and events may be determined by other factors, which take into account individuating information such as intentions, beliefs and desires.

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[8] The notion that there is an underlying reality that all members of a category share (Haslam et al. 2000:118)

Both forms of causal reasoning capitalise on different structures of normal cognitive function. One facilitates the representation of essences as properties that define social groups and underpin certain group-level similarities. The other facilitates the representation of intentional states as the causal underpinning of individual's behaviours. Crucially, neither beliefs/desires nor essences can be observed directly. They are delivered as inferences, drawn from selected pieces of information. However people classify the hallmarks of misfortune caused by sorcery and of that caused by witchcraft, however they distinguish witches from non-witches, and however they rate the relevance of individuating information to a particular situation, the final decision is still only a supposition - the outcome of a series of provisional inferences. What we tend to find in these situations, however, is that confirmation of one's hunches is often afforded exclusively via divinatory procedures. Divination facilitates access to knowledge about people and events that is not afforded by normal human perception.

Revelation and resolution

The techniques employed to obtain this knowledge often diverge in important ways from everyday methods of learning and discovery. By means of instruments (e.g. shells, astrological charts, etc), words (e.g. mediumistic messages) and behaviours (e.g. twitches), messages are believed to be conveyed that speak directly of specific events and situations. The procedure and the interpretation are not idiosyncratic, but follow established procedures and bodies of knowledge. For instance, in some Afro-Brazilian techniques of divination, cowry shells, thrown according to a prescribed method, become an instrument through which the divine will of the *orixá* deities can be ascertained and a person's *orixá*-of-the-head may be identified. The specific instruments and procedures followed in the divinatory technique are not wholly – perhaps not even partly – chosen for their technical relevance. Ask a diviner why shells and not stones are used, or vice-versa, and he or she will be unlikely to respond with reference to the technical functionality of the instrument. More often than not, the informant will be unsure, or may think the question rather silly, but may offer an account of their historical significance. In these respects such divinatory techniques may be considered to constitute forms of ritualised behaviour. Such behaviours are *inter alia* characterised by their irreducibility to technical motivations and goals, by repetition, by the strict adherence to procedural script, and by imprecision about when or by whom the procedure was originated (Boyer and Lienard *forthcoming*; Humphrey and Laidlaw 1994; Whitehouse 2004; Bloch 2004).

The perceived threat of witches (defined by essence) and sorcerers (defined by intentional action) arises from beliefs that both are dangerous by virtue of properties that cannot be ascertained through ordinary perception. There may be some tell-tale signs, but these are open to misinterpretation. One must confirm that these features are generated by the perceived, non-observable reality, or essence. In the case of witchcraft (and beliefs about *orixás* and the signs of the zodiac) there is no ordinary, tractable link between the essence and the effects that cause the perceived threat. In contrast with the diagnosis of bacterial pathologies, for example, it would not be possible even in principle to give a complete account of the causation entailed in witchcraft, whether it is said to be a physical substance in the belly or some other property. In the case of the sorcerer,

intentions and secret actions of the sorcerer are often beyond any sort of conclusive verification. Were this not the case, there would be little need for recourse to ritual techniques to consult the gods and oracles. Ultimately, without the conceptual tools and cognitive mechanisms for representing the non-observable intentions of others and the essences of natural-like social categories, and for perceiving their effects upon the social world, there would be no demand for such revelatory knowledge.

Similarly, the procedures employed to resolve any situation that has negatively affected members of the society, (e.g. to eliminate the witchcraft, or reverse the sorcery) demand techniques that, although modelled on technical action, are fundamentally divergent from it. For example, if one believes that there is such a thing as witchcraft essence or spirits, and that witches are around, identifiable, and threatening, how should one protect oneself? How should one eliminate the essence? Shake it out? Ask it to leave? Get rid of the witch? All such courses of action may make perfect intuitive sense within the context of witch-infested societies.

In the perception of certain (groups of) members of the wider global community, each of these options may be morally objectionable to greater or lesser degrees. The moral implications of the ensuing actions fall outside the scope of this chapter and the cognitive mechanisms discussed here. Nevertheless, a pertinent observation from C. S. Lewis perhaps serves to bring some philosophical perspective on the matter. Drawing attention to a tendency for people to fail to distinguish "differences of morality and differences of belief about facts", he asserts, "It may be a great advance in knowledge not to believe in witches; there is no moral advance in not executing them when you do not think they are there" (2002: 15). Despite the intuitive appeal of essentialised social categories, the prevalence of the witch category is widely variable among individuals and communities, and throughout time. The apparent absence of witchcraft beliefs may be less a reflection of any such "advancement" of knowledge, however, and more an outcome of certain conditions in the environment in which we live that do not promote, or that directly inhibit, the generation of such beliefs. Indeed, psychological studies show that the acquisition of new or complex knowledge does not always influence real-time judgments delivered spontaneously by cognitive mechanisms. As we negotiate the social world around us, our cognitive systems deliver inferences about others faster that we can consciously monitor (see Gilovich, Griffin and Kahneman 2002). As noted at the beginning of this chapter, these outputs may in themselves be widely judged to be morally objectionable (e.g. racist thought). Nevertheless, the account here explains part of what sort of psychology lies behind concepts that give rise to the kinds of actions described at the beginning of this chapter. It argues that, contrary to possible initial interpretations of the evidence, the notions underlying these disturbing events are an evolutionary by-product of normal human cognitive function for the processing of social information.

Of course, it may be, as has been widely claimed, that the secular and ecclesiastical courts responsible for trials in the European witch-craze were really seeking out scapegoats for economic decline (Oster 2004), and that the diviners in the Africa, Asia and the Americas abuse their power in order to structure social relations as they wish. It

may be that the 'belief' in witches was a powerful persuasion technique in the discourse of these perpetrators. Nevertheless, such accounts do not explain why specifically witch concepts are so readily and widely accepted and therefore become so persuasive in the first place.

Conclusion

In this chapter, we have considered some of the cognitive capacities that facilitate the spread of certain kinds of ideas about the causal source of humans' identities and behaviours. Psychological essentialism for social groups is an early-emerging cognitive bias that constitutes one of several kinds of tools for negotiating a complex social environment. I have argued that aspects of beliefs about the witch category, namely its discreteness, naturalness, stability, inherence and inductive potential (i.e. the capacity to infer from category membership that a witch is, for example, threatening and to predict any particular witch's likely activities), are supported by cognitive capacities that are dedicated to processing social category information and that give rise to essentialist forms of reasoning. Some aspects of witchcraft and of sorcery are underpinned by a different set of cognitive mechanisms, referred to as Theory of Mind. Both sets of capacities form part of our evolved biological heritage and as such are part of normal, universal cognitive functioning. Therefore, ideas about witches, star signs, and *orixás* of the head are delivered by normal, human cognition, as are ideas about sorcerers, divine retribution, and mischievous ghosts.

Anthropologists, social historians and sociologists have widely discussed putative causes for the rise and fall of witchcraft beliefs, witch hunts, and sorcery accusations. Few have attempted to render their hypotheses testable and to build upon scientific work developing in neighbouring disciplines. Few have endeavoured to identify the possible properties of human cognition that constrain the form and promote the transmission of such ideas, and that influence social perception. Few have considered in any scientifically tractable form how the natural, intuitive outputs of our cognitive predispositions and biases may be influenced by the cultural environment, and what specific aspects of the environment may be responsible for inhibiting or promoting such outputs.[9] This chapter is a tentative effort to return to explanation, and to take an initial step towards achieving these scientific objectives.

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[9] See Whitehouse (2004, Chapter 3) for a worthy attempt to consider the importance of certain ecological conditions for the propagation of different kinds of religious concepts.

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