Why we blame victims, accuse witches, invent taboos, and invoke spirits: a model of strategic responses to misfortune

PASCAL BOYER *Washington University in St Louis*

Explanations of misfortune are the object of much cultural discourse in most human societies. Recurrent themes include the intervention of superhuman agents (gods, ancestors, etc.), witchcraft, karma, and the violation of specific rules or 'taboos'. In modern large-scale societies, people often respond by blaming the victims of, for example, accidents and assault. These responses may seem both disparate and puzzling, in the sense that the proposed accounts of untoward events provide no valuable information about their causes or the best way to prevent them. However, these responses make sense if we see them in an evolutionary context, where accidents, assault, and illness were common occurrences, the only palliative being social support to victims. This would create a context in which all members of a group might be (a) required to offer support, (b) willing to offer such support to maintain a reputation as co-operators, and (c) desirous to limit that support because of its cost. In this context, recurrent explanations of misfortune would constitute strategic attempts to create and broadcast a specific description of the situation that concentrates responsibility and potential costs on a few individuals. This strategic model accounts for otherwise perplexing features of explanations based on mystical harm (ancestors, witchcraft, etc.), as well as the tendency to denigrate victims, and offers new predictions about those cultural phenomena.

Why would people blame the victims of misfortune? Why would they think that gods or spirits or witches are involved in making people sick? Here I propose a general model for culturally widespread interpretations and explanations of misfortune: for example, accidents, illness, failures, and so forth. People often see such events as the work of gods, spirits, witches, as the consequence of religious violations, or, generally without much evidence, try to claim that victims 'had it coming' and somehow provoked their own problems. I argue that these responses, while they do not help humans avoid or palliate misfortune, do make sense in an evolutionary perspective as parts of various strategies to enhance fitness through social interaction.

Misfortune: a puzzle and a programme
Common responses to misfortune
Consider the following culturally widespread responses to misfortune:

Spirits and gods are involved. People attribute misfortune to imagined agents, such as gods, ancestors, spirits, ghosts, demons, and so forth, which often implies that some propitiation is required.

Witches are responsible.[1] The machinations of particular individuals (usually members of the group) explain illness, accidents, failures, and so forth. Witchcraft beliefs are common the world over in small-scale or agrarian communities.

Karma explains why bad things happen. Here untoward events are the consequence of past deeds from the victim's soul, in a previous incarnation.

The victim must have breached a prohibition or 'taboo'.[2] People assume, for instance, that committing incest would cause the earth to shake or rivers to flow backwards. In many places, they readily interpret actual misfortune as the consequence of some violation of social norms.

The victim is the person to blame. We know from experience that people often blame the victims of various kinds of misfortune: for example, assault or accident. They state, for instance, that the victim somehow 'had it coming', to use a common phrase, because they were reckless, did not take sufficient precautions, provoked someone to attack them, and so forth. A widespread reaction to the AIDS epidemic was to blame victims, homosexuals in particular (Crandall, Glor & Britt 1997). More dramatically, many people in Europe considered (and still consider) Jews at least partly to blame for the Holocaust: for example, because their behaviour before or during the war somehow forced the Nazis into persecuting them (C.J. Dean 2017; Weiss-Wendt 2008).

Note that such cultural assumptions do not always cover all cases of negative events. People produce such accounts for events that seem to require some specific explanations. Although many anthropologists have noticed that fact, few have elaborated on what makes some events stand out as special. Favret-Saada (1980), for instance, notes that only recurrent, serious problems are seen as special. By contrast, in other places, any illness or accident triggers a search for mystical explanations (Fortune 1932). Also, in many places, other people's success counts as one's own misfortune, and therefore requires a special explanation.

These explanations of misfortune are common in different cultures – some are common in most cultures. And all of these are, from the standpoint of evolutionary psychology, deeply puzzling.

Why common responses are puzzling

The puzzle starts from the assumption that human cognition consists of a set of adaptations – that is, capacities and dispositions – that, on average, contributed to fitness gains over evolutionary times (Tooby & Cosmides 1992). As humans are bound to experience illness, accidents, assaults, and so forth, we would expect an adapted mind to focus on aspects of the world that are pertinent to reducing the occurrence or consequences of such misfortune. That is the case in many respects, as dedicated neurocognitive systems govern our reactions to direct and potential threats.[3] But the widespread notions we describe here are clearly irrelevant to countering or avoiding threats, in the sense of representing and reacting to invariances across situations. Claiming that sickness is caused by witches does not provide useable information about illness.

Even more puzzling, many interpretations of misfortune focus on aspects of the situation that seem of little value for avoiding or palliating such events. Evans-Pritchard famously documented this focus in his ethnographic study of the Zande people of Sudan. In one episode he described, people explain that a granary collapsed, hurting those who were sitting in its shade, because it was infested by termites. But they also want an answer to the question why it collapsed precisely when particular people were

sitting underneath (Evans-Pritchard 1937: 69). More generally, a common reaction to misfortune is to ask, 'Why me? Why now?' But answers to these questions do not by themselves result in better predictions of subsequent occurrence or the means to remedy them.

Proposal for a strategic model
The challenge, then, is to account for particular forms of response to misfortune. Naturally, human beings respond to negative events in many diverse ways, depending on personal circumstances and motivations. What is of interest here are those explanations that become 'cultural': that is, are represented in roughly similar ways in individual minds within a particular social group or community. For instance, explanations of illness may take many forms, but in some groups one assumes that some individual's jealousy or sorcery counts among the plausible explanations – and our task is to explain why such expectations would seem plausible, and why people would be motivated to propagate them within their social environment. Like other anthropologists in the study of cultural evolution, we assume that what we observe as cultural representations and practices are variants of cultural traits found in roughly similar forms in a particular place or group, because they have resisted change and distortion through innumerable processes of acquisition, storage, inference, and communication (Boyd & Richerson 1985; Claidière, Scott-Phillips & Sperber 2014; Sperber 1996).

Here I propose that recurrent themes in culturally widespread explanations of misfortune result from a specific set of dispositions and preferences, whereby humans manage the consequences of misfortune in their social environment. Specifically, I argue the following:

- In technologically simple circumstances, typical of the environments in which humans evolved, the most important resource the victims of accidents and illness would need was (and still is) social support: that is, other people's continued willingness to help those who cannot contribute their share of production and group defence.
- We know that evolved mental systems include motivations both to provide for others and seek such support when necessary, but also to avoid being exploited by others.
- We also know that a crucial human motivation is a concern for one's reputation: in particular, for being seen as a valuable co-operative partner in one's community.
- These motivations lead people to create or endorse particular accounts of misfortune, and to try to turn these accounts into the received opinion in their community.
- This explains the cultural recurrence of specific ways of explaining and reacting to instances of misfortune.

Evolutionary background: misfortune and social support
What was the impact of illness and injury in ancestral conditions?
One aspect of prehistoric conditions that may not be salient to modern humans is the high incidence of illness, as documented in the archaeological and ethnographic records, for instance congenital diseases and infections (see a general survey in Grauer 2011; Weston 2011). Accidents, too, were frequent, accounting for many cases of fractures in the skeletal record (Roberts & Manchester 2005: 46). Some varieties of foraging require strenuous effort, the effects of which combine with illness (e.g. arthritis,

spondylosis, cancer) to damage bone structure.[4] Finally, interpersonal and intergroup violence also account for a good proportion of fractures (Judd & Redfern 2011).[5]

The comparative study of contemporary foragers (Kelly 1995), despite obvious problems of inference (Leacock & Lee 1982), provides reliable indicators of the kinds of dangers associated with the specific ecological conditions under which ancient populations evolved. Ethnographic studies illustrate the sorts of hazards faced by foragers in tropical environments – the most consequential being congenital conditions, infectious disease, predation, accidents, and attacks from conspecifics. For example, in Sugiyama's detailed survey of a sample of Shiwiar forager-horticulturalists of Ecuador (2004*b*: 387), there are traces of puncture wounds and lacerations in 33 per cent of surveyed individuals, current or recent infections in 21 per cent, and fractured bones in 2 per cent.[6]

These and similar surveys from other regions support Hill *et al.*'s (2007) conclusion that the foraging lifestyle comes with a high risk of accidents and illness, often compounded by the pressure of nomadism as people need to move on regardless of their condition. In many places, the dangers of the foraging lifestyle also include the costs of intergroup conflict.[7] The impact of these circumstances is not trivial. For example, a snake bite can incapacitate individuals and then diminish their physical capacities for a year (Sugiyama 2004*b*: 385).

All this would suggest that a notable proportion of individuals in ancestral conditions would, at some time in their lives, fall sick (parasites, bacterial infections, internal conditions) or be injured (accidents, individual or collective violence). In the same way as the immune system bears traces of our struggle with pathogens (Hempel 2011), some of these recurrent events would leave traces on our evolved capacities, which would explain some of our psychological dispositions in the treatment of misfortune.

Would sick and injured individuals receive support?
Given that many ancestral individuals would be sick or injured, what do we know about the amount of support they received? In the ecological and technical conditions of ancestral communities, very little could be done to remedy infections or injuries, despite (often considerable) knowledge of plants and their curative effects, as well as some techniques like setting fractures.

As a consequence, the main resource would have been social support. This could take the form of, for example, providing food for an individual who could not contribute to its production, or protecting them from predators or enemies. To what extent were those forms of help part of our ancestral environment?

From prehistory, we only have very fragmentary, and necessarily indirect, information (Ortner 2003). One crucial piece of evidence is that many individuals seem to have survived disease and injury, including fractures that would have left them disabled, in some cases severely. An extreme example is that of a gravely disabled individual whose skeleton was part of the Gran Quivira site (about 1600 CE), and whose remains suggest a debilitating chronic arthritis that would have made walking difficult or impossible from the teenage years, leading to almost complete paralysis thereafter. Yet that man survived for several decades, and could not have done so without very heavy support from able group members (Hawkey 1998).[8] Social support for weaker individuals might have occurred even earlier. The Neanderthal Shanidar 1 skeleton shows evidence of right-arm paralysis, which would have considerably reduced hunting

and protection abilities, and therefore might have required help (Trinkaus 2014). More generally, the record in many sites shows severe fractures with signs of healing and subsequent ageing (Roberts & Manchester 2005: 99). There seems to have been at least enough support such that people could survive vicissitudes that resulted in a diminished contribution to production.[9]

The archaeological record can tell us that (at least some) victims of misfortune received some social support, but it cannot tell us how frequent that was, or who provided help. We can complement this archaeological evidence with evidence from modern foragers. Diseased or weakened individuals are frequently taken care of, even though their contribution to food production, nurturing, or group defence is clearly diminished. In Sugiyama's Shiwiar survey, for instance, many individuals received help. Many children are born of parents who had fractures or other insults before the birth. More generally, people die long after insults or illnesses that severely affect their contribution to production (Sugiyama 2004*a*: 394).

Social support: ultimate and proximate aspects
Ultimate aspects
As misfortune and social support were both recurrent features of our prehistoric conditions, it makes sense to see them as part of the evolutionary environment of our species. This raises the question of the impact of these factors on human evolved motivations and capacities.

Trade-offs inevitably occur in allocating social help. First, most obvious, helping a victim comes at a cost for the benefactor, including both the direct cost of, for example, food or protection provided, and the opportunity cost of not engaging in other fitness-enhancing behaviours. Second, diseased or wounded individuals contribute less to production and collective action, so they are in that respect less valuable exchange partners. Third, a severely sick or injured individual may have little chance of survival, which makes that person a poor candidate for help, if help is based solely on the expectation of direct future reciprocation. Fourth, social support is by necessity a rival good: the more one victim of misfortune receives, the less is available for others.

What set of strategies could best satisfy these constraints? The fact that social support for victims is widespread in human societies would suggest that, under specific circumstances, some fitness benefits offset the various costs of social support. Individuals may help, not in the expectation of reciprocation, but as a way of communicating to third parties their willingness to be generous co-operators. In this sense, help offered to non-kin would overcome the 'banker's paradox' in co-operation, the fact that it is when we need help most that we appear least likely to pay it back (Tooby & Cosmides 1996). As Sugiyama points out, a motivation to help those in need makes sense in a species where co-operation is based on reputation (Sugiyama & Sugiyama 2003; see also Gintis 2000). This could occur without direct reciprocation. If A did help B unconditionally in times of need, then C cannot deny A help without losing reputation, being the person who does not co-operate with a generous co-operator. A disposition to help those in direst need, like many other deontic motivations, would seem to be the outcome of an evolutionary context of co-operation based on repeated interactions, partner-choice, and reputation (Baumard, André & Sperber 2013; Delton, Krasnow, Cosmides & Tooby 2011).

This ultimate factor would predict that support may come from a broad range of individuals beyond the victim's kin, as the reputation benefits are greater if helper

and beneficiary are not genetically related. This would suggest that, in a small group of personally known individuals, typical of human ancestral conditions, any member of the group might be a potential helper, and thereby benefit from an enhanced reputation. Here we use the term 'reputation', as in formal models of co-operation, to denote any information that people may have concerning an individual's previous co-operative (or non-co-operative) interactions (Sylwester & Roberts 2010). To the extent that human co-operation relies on choosing the best (i.e. fairest, most co-operative) partners available in one's social environment, monitoring other people's reputation, and managing one's own, are crucial to mutually beneficial interactions (Sperber & Baumard 2012). That is all the more the case in the small-scale communities typical of much of human evolution (Kelly 1995). In such groups, most individuals have information about most interactions, so that people's behaviour is strongly constrained by reputation effects. That is salient, for instance, in sharing, as documented by the many instances in which people share the fruits of their labour, albeit reluctantly, for fear of being seen as selfish (Bliege Bird & Power 2015; Gurven 2004; Kaplan & Gurven 2005).

There are, of course, clear limits to the fitness advantages of such behaviours. Simply put, it is probably not a good strategy to offer help to all those who may seem to need it. Social support is a rivalrous good. That is, helping one individual entails not being able to help others, including at a later time. Also, not all recipients of help may be in equal need. Finally, some may not even deserve help. So we should expect a motivation to help to be sensitive to specific cues concerning the victim and their circumstances.

Supply of social support: proximate capacities and motivations

Given these ultimate factors, we could expect that specific proximate mechanisms motivate the provision or withdrawal of social support. Here is a minimal description of the relevant capacities and motivations:

A motivation to recruit support. Humans engage in many behaviours that elicit support from others, from infants crying (Reijneveld, van der Wal, Brugman, Sing & Verloove-Vanhorick 2004) to adults communicating about their plight, and, specifically, trying to reactivate or reinforce previously existing social bonds (see, e.g., Gourash 1978). The motivation is so familiar to us that it is generally taken for granted, and it may seem strange to even mention it.

A motivation to offer support. Humans engage in generous behaviours beyond kin selection (extending favours to genetically related individuals) and reciprocal altruism (extending favours to unrelated individuals who will reciprocate with a high probability). The literature on moral psychology and co-operation is replete with illustrations of a general human tendency to offer help that can enhance the welfare of others. Even very young children, for instance, spontaneously try to help adults who apparently cannot solve a task (Warneken & Tomasello 2006).

A motivation to avoid exploitation. Humans have a strong aversion to free-riding and exploitation. The moral psychology and evolutionary psychology literatures show that specific computations detect and react to such situations. For instance, people are selectively attentive to the fact that exchange partners may be deriving benefits from interaction without paying costs (Cosmides & Tooby 1992). A large literature shows that humans identify and try to avoid co-operation partners who offer unfair contributions (see the summary in Baumard 2011).[10]

Predicted dynamics of communication and reputation
The strategic background
Given a specific case of misfortune, the capacities and dispositions described here would create a context of interaction with the following properties:

(1) *Everyone is a potential contributor*. That is, most members of the group could in principle be 'on the hook' when some misfortune strikes any other member. To the extent that people expect some generous behaviour in cases of misfortune, they (at least potentially) expect a contribution from everybody else – so that the misfortune of one is a concern for all.

(2) *People are motivated to limit their contribution*. Because there is a cost to offering support, we should expect individuals to intuitively engage in courses of action that reduce that cost, or make it possible to deny support, or constrain others to share the burden.

(3) *People compute the various causal factors involved in misfortune*. They do not just represent the situation, the costs for the victim and the potential need for help, but also evaluate the chain of causes, including the victim's own behaviour, that led to the particular situation.

(4) *People are attentive to what others in their group say concerning a particular case*. That is, they can evaluate what interpretations of the case are transmitted, whether they seem plausible, whether they will seem plausible to others, and to what extent they carry consequences: for example, for the need to help the victim.

This last point requires a more detailed exposition, as the conditions of communication are crucial to understanding various ways of interpreting misfortune.

Communication and the manufacture of common knowledge
In small-scale communities, typical of most of human evolutionary environments, people constantly exchange information about salient events, and cases of misfortune are, of course, pre-eminent in such conversations. Also, as frequently noted in the anthropological literature, people in such communities place a high value on the establishment of a consensus as regards important matters. Most people intuitively value the co-ordination advantages of having an agreed interpretation of salient events.

Given this, both victims and observers have an interest not just in acting in specific ways, but also in promoting a particular description of the situation, and turning that description into the commonly accepted version: that is, an explicitly consensual opinion, consisting not just in people's average opinion, but in the fact that most people assume that most others share that opinion (Brennan & Pettit 2004; Sperber & Baumard 2012: 510).[11]

In situations of misfortune, then, people may be strongly motivated to 'push' a particular account of what happened, and strive to get others to accept it as common knowledge. If it is (overtly) accepted by all that So-and-so is ill because the ancestors are angry, this has consequences for the speaker, for So-and-so, and for other third parties. In particular, it may influence the way people construe So-and-so's responsibility in what happened. It may influence their opinions on whether the victim should engage in restorative measures to propitiate the ancestors, to what extent various individuals would bear the costs of such rituals, and so forth. Such considerations would motivate people to endorse and broadcast particular versions of events. In some cases, victims themselves may participate in this elaboration of a consensual explanation, by describing themselves as victims of some individual's

sorcery, for instance, and thereby producing an explanation that is advantageous to most others in the group. (Note, however, that in most cases of witchcraft accusations reported in the literature, third parties are the main proposers and defenders of specific accusations.)

Predictions: how to represent misfortune in small-scale societies
These capacities and preferences should have an influence on people's discourse. Here are two predictions concerning preferred representations of misfortune.

Prediction 1: Specificity. Discourse about misfortune will focus on particulars. That is to say, statements about misfortune will be perceived as all the more relevant as they mention facts that uniquely apply to the situation considered, rather than to the situation as an instance of a class. In practice, this means that most discourse about misfortune would be about particulars – for example, about the fact that So-and-so's sorcery made this individual sick – rather than about the general process of sorcery.

This would be a straightforward consequence of a motivation for expressing discourse relevant to support. As mentioned above, people who want to 'push' a particular version of what occurred may be (in part) motivated by the fact that such a description would affect the allocation of help and support. In particular, one motivation is to (a) maintain one's reputation as a co-operator, whilst (b) reducing potential demands on one's support. That can be done by adopting a description of the situation that makes even a good co-operator justified in limiting or denying their help *in that particular case*, therefore without leading others to conclude that one is in fact generally selfish. This constraint would make details of particular situations highly relevant to all third parties, whilst generic statements about misfortune would be mostly irrelevant.

Prediction 2: Focalization. Discourse will asymmetrically allocate responsibility. A major prediction from this model is that the attribution of responsibility should be asymmetrical between groups and individuals. That is to say, since the motivation between some explanations is to concentrate responsibility rather than diffuse it, we expect to find that in many cases people explain misfortune by the actions of one or a few individuals, and that obtains even when the misfortune affects many people. The incentives for focalizing responsibility on a single person (or a small group) are shared by many individuals *not* targeted, and therefore let off the hook, as it were. People would, for instance, explain an individual illness by an individual's witchery or taboo violation, but they may also explain a collective problem like bad crops or epitomize in terms of one person who offended a god, broke some rule, or engaged in witchcraft. The model would predict that we do not find the opposite case. That is, we do not observe cases where people would find it compelling to explain some specific misfortune affecting an individual in terms of collective responsibility: for example, stating that this particular person got sick because we are not pious enough as a group, or because we have failed to perform rituals as a community.

Interpretations and their strategic implications
What follows are examples of common strategies for the explanation and interpretation of misfortune culled from the anthropological record. This is intended as an illustration rather than a thorough empirical examination of the cross-cultural evidence. Here I

focus on the most culturally widespread features, which is why I, for instance, do not mention karma-based accounts.[12]

Involving spirits, gods, or ancestors

The most widespread explanation of misfortune focuses on the intervention of superhuman agents (gods, spirits, ancestors, etc.) in the lives of ordinary humans. This is true of the most diverse cultures. The Tallensi of Ghana, for instance, consider most accidents or illness as punishment by the ancestors, or, rather, an attempt on the ancestors' part to 'correct' people's ways (Fortes 1987: 78ff., 295ff.). In a very different environment, the Nuaulu of Eastern Indonesia make very similar statements (Ellen 1993: 92). In Greek popular religion, the various gods' interventions would explain most circumstances of life and be required to palliate all negative outcomes (see, e.g., Burkert 1985: 55ff., 264ff.).

The theme is so common that it would be surprising to find a society where people imagine spirits or gods but do *not* associate them with misfortune. In fact, this is one of these situations where we can learn a lot from the dog that did not bark, as in the famous Sherlock Holmes story (Doyle 1903). Even though people's descriptions of superhuman agents can vary a lot, we do not find any community where no such agents are involved in people's misfortune. Indeed, in those religious traditions whose doctrine describes the god or gods as entirely unconcerned with humans, people either supplement those with other, more concerned deities, or simply ignore the doctrine, a well-known phenomenon described as 'theological incorrectness' (Barrett & Keil 1996; Slone 2004).

Why is the association of misfortune and superhuman agents so compelling? It may be of help to describe how people describe that association. In principle, one could construe it in very general terms, describing the gods or spirits as the distant cause of all misfortune, in the same way as we think of temperature, pressure, and evaporation as what generally causes the weather. And people in many places would indeed agree that gods or ancestors generally bring about good and bad fortune. But in most communities, they do not stop there. Consider, for instance, shamanistic practices. A specialist is said to have specific skills or a particular substance that makes them specially capable of interacting with spirits, and engaging in the kind of bargaining that may result in healing or restoration of the victim's good fortune. Such rituals are invariably directed at a particular case of misfortune, whose ultimate causes remain inscrutable (Singh 2018: 4). The outcome is a new description of the situation, one that emphasizes how the particular individual was targeted by some spirits or other such agents.

Consistent with Prediction 1 above, such procedures always focus on the particulars of the case. Neither shamans nor diviners aim to provide generic information about the causes of illness or accidents, and their clients are not seeking such information. What matters are the unique features of the situation, and the involvement of the gods or spirits is also described in terms of these particulars.

In agreement with Prediction 2, seeing misfortune as caused by spirits and ancestors suggests that responsibility for the unfortunate state of affairs lies in a limited number of persons, typically in one individual. Adopting such explanations implies that responsibility is highly concentrated instead of being seen as shared by the community.

This is another case of a dog that did not bark. When they handle specific misfortune, most religious practices construe it as connected to something the victim did or failed

to do, not the community. When a group is seen as responsible, it is for group-level problems, when, for instance, a community's defeat is seen as collective punishment for collective neglect of the ancestors (Keesing 1982). But we do not observe cases in which an individual's bad fortune is explained by a whole community's actions without considering the victim's own behaviour. Note that this way of seeing misfortune would be entirely compatible with religious concepts: for example, of superhuman agents that can inflict illness through unexplained means.

This interesting asymmetry (individual faults may cause collective problems, but collective faults are usually not seen as the cause of individual misfortune, in religious terms) makes more sense if we consider that a central motivation is to focalize responsibility: that is, to create or endorse descriptions of the situation in which most third parties can be considered off the hook, so to speak, and therefore less clearly accountable for help or palliation.

Witchcraft accusations

Why would people see misfortune as caused by someone's witchery? Anthropological accounts oscillate between a 'scapegoating' interpretation, whereby people accuse the most vulnerable or marginalized individuals of witchcraft, as there is not much cost in ganging up on them (see, e.g., Gluckman 1955; La Fontaine 1998); and a social levelling account, whereby people accuse the overly successful of being witches (e.g. Kluckhohn 1944). In either case, it remains to explain the dynamics of mobilization: that is, why people would endorse accusations against a witch.

It helps to see witchcraft accusations as a form of stigmatization, providing a co-ordination point for coalitional alignment against a particular individual (Kurzban & Leary 2001). People who have some interest in inflicting harm on a particular individual may use witchcraft accusations rather than a direct attack, because the accusation makes it possible to recruit allies against the target whilst maintaining one's own reputation. Also, once an accusation targets an individual, previously unconcerned or neutral third parties may have a strong incentive to endorse it rather than defend the target, an incentive that, of course, becomes stronger as more people agree with the accusation. This is certainly a crucial aspect of the dynamic that motivates people's willingness to endorse specific accusations.

One of the effects of such mobilization is that, if enough people support the accusation, there is now an accepted description of a case of misfortune in which the responsibility for what happened to the victim is circumscribed to one particular individual. Potential restorative measures are also concentrated on the person of the witch and immediate kin. In most cases of witchcraft in small-scale societies, the designated witch and family have to perform specific rituals, as well as compensate the victim in some cases. So we may see witchcraft accusations as attempts to create a consensus on the fact that responsibility is limited and therefore the potential legitimate costs of reparation should also be limited to an individual or the close kin.

Note that explaining accident or illness by witchcraft may have the benefit of providing one convenient target for responsibility, but it is also potentially very costly. It means that one individual is singled out as the ultimate anti-co-operator, a reputation cost that occasionally backfires on the accusers and in any case makes it more difficult to extract co-operation gains from the presumed witch. This might explain why people are highly motivated to make witchcraft cases a matter of consensus. In most small-scale communities with witchcraft beliefs and witchcraft accusations, a complex process leads

from the initial observation, that some case of misfortune requires an explanation, to public accusations, confession, and restorative justice.

Rule violation

The emphasis on rule violation as a cause of illness or accidents varies a lot between cultures. Compare, for instance, the Dorze case in Ethiopia, with a large catalogue of highly specific prohibitions whose violation explains misfortune (Sperber 1999: 299), with Dobu in Melanesia, where witchcraft is seen as a constant threat (Fortune 1932).

In many cases, the idea of rule violation is combined with the involvement of supernatural agents. For instance, the Nuaulu of Indonesia construe most misfortune, from poor crops to failure to illness, as caused by some violation of customary norms that offended the ancestors (Ellen 1993: 92ff.), describing the connection in the same terms as the Yoruba in Nigeria (Afe 2013: 106), the Tallensi in Ghana (Fortes 1987: 126), the Iban of Borneo (Wadley 1999: 595), and people in Himachal Pradesh in India (Sharma 1973: 353).

In other places, people find the connection between violation and disaster intuitively compelling, without having to specify how agents are involved. That seems to be the case when Malagasy people of Madagascar connect, for instance, the occurrence of incest and natural disasters (Astuti & Bloch 2015), when Dorze people see rule violation as a direct cause of personal misfortune (Sperber 1999), or when Nubian Muslims state that specific behaviours at the beginning of a lunar month will bring about bad outcomes, although no one bothers to specify by what process (Kennedy 1967: 688).

An important point here is that, in many cases, people are not aware of what prescriptions they may have violated. For instance, Dorze people think there are hundreds of highly specific prohibitions that they do not know, which is why they must defer to diviners (Sperber 1999: 299). It is always possible for anyone to have unwittingly breached some specific prohibition. Indeed, as Astuti and Bloch point out, in many cultures, and especially in Madagascar, this association between rule violation and consequent responsibility is not affected by intentionality. People assert that the victim was specially involved in bringing about the particular problem, without having to assume that they willed it (Astuti & Bloch 2015).

The notion of misfortune caused by rule violation, just like that of superhuman agents' involvement, locates the cause of bad outcomes in the victim themselves: in other words, it describes misfortune in terms of processes that (1) are specific to the particular situation at hand and (2) focalize responsibility, as predicted by the model proposed here.

A modern account: victims as blameworthy

So far, I have described the interpretation of misfortune in small-scale societies which approximate some features of ancestral communities: for example, the size of groups, the fact that social support is a crucial aspect of care in the absence of biomedical solutions, the fact that most ecologies only support very modest levels of wealth accumulation, and so forth. So it makes sense to ask whether those mechanisms would still apply in modern, mass societies. Given that most of the mechanisms described here have to do with responsibility, and in many cases end up locating that responsibility in the victim's person, it may be relevant to consider the widespread phenomenon whereby people tend to blame or derogate victims of misfortune, mostly by emphasizing their contribution to their own problems.

Experimental evidence and social psychological explanations

Although the phenomenon itself is familiar from everyday interaction, most of the scientific evidence comes from experimental protocols. In the first studies that documented this striking reaction, participants observed a confederate of the experimenters being ostensibly shocked with electrodes as a 'negative reward' for their wrong test answers. Subjects tended to devalue the victims, relative to control conditions, more so if they were unable to help (Lerner & Simmons 1966), and if they might be considered responsible (Cialdini, Kenrick & Hoerig 1976). Further studies confirmed that people tend to derogate victims of misfortune, especially by ascribing to them some responsibility in what occurred (Strömwall, Alfredsson & Landström 2013; see survey in Hafer & Bègue 2005).

Proposed explanations of this phenomenon have focused on proximate psychological mechanisms. Lerner originally proposed that people generally hold a 'belief in a just world' (BJW) whereby bad things somehow happen to bad people. As cases of misfortune in many cases seem to clash with that assumption, people might preserve their belief by assuming that the victim is not such a good person after all (Lerner 1965; 1980). There is, however, no independent justification for this hypothesis. Lerner (1980) simply stated that people *must* have that belief, without which they would find life intolerable.[13] After Lerner, a large experimental literature confirms the correlation between BJW, measured through normed instruments, on the one hand, and victim blame, on the other (e.g. Furnham 2003; Rubin & Peplau 1975).[14] Remarkably, some of these empirical studies show a connection between BJW, on the one hand, and co-operation (or, rather, unwillingness to co-operate), on the other, an association that is compatible with the model proposed here (Wenzel, Schindler & Reinhard 2017). People may consider the world a just place for others (general BJW), though not for themselves (personal BJW), a combination of beliefs that contributes to excuse one's motivation to exploit others (Sutton & Winnard 2007).

Research on victim derogation suffered from common limitations of early social psychology, notably the use of unrepresentative samples, as well as extreme ethnocentrism – the few 'cross-cultural' studies in the domain compare samples from a few modern industrial countries. So the question remains: 'Why would people be motivated to derogate victims of misfortune in some circumstances?'

Victim blame as a strategic move: explanation and predictions

The strategic help model proposed here might provide a straightforward explanation for the motivation to denigrate victims, or emphasize their own responsibility. Here the reputation dynamics are fundamental. In this interpretation, participants in these experiments have the intuition that they may be seen as unwilling to help. One way to avoid that interpretation of one's own behaviour would be to make it clear that the victim did not deserve support.

This causal process would explain some otherwise puzzling features of victim blame in the psychological literature.

(1) In many studies, people derogate the victims – that is, describe them as unworthy – in respects that have nothing to do with the misfortune (e.g. Correia *et al.* 2012; Harvey, Callan & Matthews 2014). That is the case in Lerner's original studies, for example, when students described a victim of electric shocks as unlikely to be a popular student (Lerner 1965). Note that in this case subjects derogate the social qualities of the victim, her potential as a co-operator.

(2) The model would also explain why victim derogation is particularly intense when the subject cannot offer any help (Cialdini *et al.* 1976; Lerner 1965).

(3) A direct consequence of the model would be that people tend to derogate or blame victims more if they expect to have costs to pay. That is not directly tested in the literature, but an indirect effect would be that victim blame is more intense if the situation seems to predict higher costs if the damage to the victim is greater. To some extent, that was supported by some experimental evidence (Walster 1966), although the results were complicated by the fact that experimental protocols do not emphasize the connection between greater damage and higher costs (Shaver 1970).

So the strategic model may shed some light, although in a speculative manner, on a common phenomenon that is not really explained at all by standard social psychological accounts. In places with modern technology, insurance policies, and social welfare, the impact of others' misfortune is much diminished beyond kin and friends. Still, people seem clearly motivated to focalize responsibility and costs. One might see this reaction in experimental studies as an example of an evolutionary mismatch, in which we engage in responses that would have been more appropriate in ancestral environments (Li, van Vugt & Colarelli 2018).

Conclusion

Strategies for discourse

The strategic model aims to show how evolved dispositions and interests may motivate certain ways of representing other people's misfortune, especially when the situation may create costs for third parties. It may be helpful to dispel possible misunderstandings of the model.

Strategies are not deliberate. The fact that a certain course of action is described as strategic only means that it carries certain costs and benefits, given what other people do. It is not meant to suggest that people deliberately plan to, for example, describe an accident as witchcraft because that will get them off the hook, in terms of responsibility and potential support.

Strategies are not always effective. I stipulated that an explanation may seem attractive because, if accepted by all concerned, it would concentrate an originally diffuse responsibility for the situation, and consequently its costs. That does not entail that such strategic behaviours succeed. First, what seems convincing to one may not seem so to others. In particular, victims and their supporters would have a symmetrical motivation to publish a different account. The strategic model states that people intuitively prefer a kind of discourse that might reduce potential costs, not that they have an accurate picture of the consequences of what happens as a result. That is why we observe attractive explanations of misfortune that do not result in actual cost reductions. For instance, asserting that assault victims 'had it coming' does not in modern societies reduce the cost of solidarity, as none was expected in the first place. Or, saying that someone got sick because a relative is a witch may not in the end reduce one's costs. All the model is supposed to explain is why some themes of discourse will seem plausible and compelling, not that they will actually have the intended effects.

The missing explanation for misfortune explanations

Shared explanations of misfortune are common the world over – yet general anthropological or psychological reflections on this phenomenon are surprisingly rare. True, most anthropologists have commented on the fact that in many human societies,

almost all instances of salient misfortune require specific explanations. And there is a vast and important literature – from which the present model takes inspiration – on the social dynamics involved in witchcraft concepts and accusations, for instance (Douglas & Evans-Pritchard 1970). Also relevant to the present model, Fiske (2000), for example, described how shared explanations of misfortune, like other cultural models, can serve as a co-ordinating device.

In a more general manner, intellectualist anthropologists would assume that the goal of people's accounts of misfortune, as of other shared models, is to 'explain, predict and control' (Horton 1967). But, as mentioned in the introduction, that seems to fly in the face of what we know about widespread representations of misfortune. That is, a strict intellectualist approach would imply that people's explanations of misfortune are adopted by individuals as a function of their explanatory power, their capacity to account for past cases, and in some measure to predict subsequent ones. But, as documented here, many culturally widespread models (e.g. in terms of the actions of witches) are silent on the ways in which the distant causes (a witch's malevolence) bring about some situation (a granary collapses on particular individuals), and therefore are of no help in figuring out what might or might not happen next.

Psychologists have commented on people's propensity to produce specific explanations for salient negative events (Kovacek 1996) and for using counterfactuals as a way of formulating putative causes (Roese 1997), as well as the connection between explanations of mishap and just-world beliefs, as discussed here (Hafer & Bègue 2005). These are primarily descriptive models that provide us with indispensable information about mechanisms, but not about their origins.

In sum, this rich literature rarely if ever addresses the general question: 'Why would human minds ever create explanations of misfortune?' The phenomenon is probably too human – that is, too familiar to all of us – to seem anything but self-evident. In this domain as in others, however, an evolutionary perspective has the benefit of making the familiar strange (Seabright 2010: 15-61), in this case turning common reactions to bad events into a puzzling psychological process. For that reason, the present model is at this point largely speculative, as there is no substantive history of explanations of misfortune.

This all seems exotic and unintuitive

The moralist La Rochefoucauld once remarked that 'We all have strength enough to endure the troubles of others' (1981 [1665]: 39). However witty, the epigram is not in fact entirely true – especially when we perceive that we may be compelled to help the victims. As documented here, assistance to sick, disabled, and injured individuals is a constant of human societies from human prehistory. I hypothesized that some evolved psychological mechanisms help us calibrate this requirement against other contributors to our fitness.

It may be difficult for us to appreciate the point, because life in modern, industrial mass societies obscures the relevance or even the existence of such processes. Social welfare to some degree protects people from the effects of economic adversity, while modern medicine clearly offers more efficient palliatives to illness and accidents beyond social support. So the problems of a strategic allocation of social support may seem quite alien to denizens of modern mass societies. As a consequence, the motivation to blame victims, or to find mystical causes for their problems, may seem to be a strange quirk of human cognition, unrelated to our evolved needs, capacities, and preferences. But

our minds evolved in communities and economies in which insurance policies, social welfare, and efficient medical treatments were unknown. The costs created by other people's tribulations were a real challenge, and culturally widespread explanations of misfortune may well reflect that reality.

Acknowledgements

NOTES

[1] As in most of the anthropological literature, 'witchcraft' here refers to situations in which people think that a specific individual, who in many cases is a member of their group, is responsible for someone else's illness, failures, accidents, and so forth (for very different cases, see, e.g., Bonhomme 2012; Evans-Pritchard 1937; Favret-Saada 1980; Fortune 1932). This has nothing to do with modern religious movements that identify themselves as witchcraft (see, e.g., Luhrmann 1989), and only partly applies to the European witch-hunts (Thomas 1997).

[2] I will use the term 'rule violation' rather than 'taboo' as the latter is highly misleading, its common meaning being a mish-mash of ethnographic detail (notably from Polynesia), its anthropological interpretation, and a general term for all sorts of interdictions.

[3] Direct, imminent threats to fitness (e.g. attacks by predators or conspecifics) trigger fast, appropriate flee-fight-freeze reactions (Blanchard, Griebel, Pobbe & Blanchard 2011). Indirect potential danger, like cues to the presence of predators, situations of potential contamination or contagion, loss of status or coalitional affiliation, trigger different but equally fitness-enhancing evolved behaviours, both precautionary and palliative (Boyer & Bergstrom 2011).

[4] This is documented in places as different as the Argentinian pampa (Chenque 1 site, ~1,000 BP: Luna, Aranda, Bosio & Beron 2008) and prehistoric Japan in the Jomon culture (~10,000 to 1,000 BP: Suzuki 1998).

[5] For instance, in pre-ceramic Chinchorro culture (2000 BCE, Chile), many skeletons bear traces of attacks using darts and atlatl. A quarter of fractures are skull fractures, suggesting assault rather than accidents (Standen & Arriaza 2000). Among the Chinchorro culture remains (2000 BCE), many victims of violent assault seem to have survived similar fractures (Standen & Arriaza 2000: 245).

[6] A survey of the Yora in the Amazonian lowlands of Peru reports similar figures (Sugiyama & Chacon 2000). Among the foraging Hiwi of Venezuela and Colombia, Hill *et al.* report a similarly high incidence of accidents and illness which results in a high mortality. This is compounded by inter-group violence, as 36 per cent of younger adult deaths occurred in combat (Hill, Hurtado & Walker 2007: 444).

[7] A comparative survey of pre-industrial societies from the Human Relations Area Files (HRAF) ethnographic database reveals a state of endemic warfare in a third of the sample, with occasional intergroup violence in three-quarters of the societies surveyed (Ember & Ember 1997).

[8] We can draw similar inferences from the case of an individual with a severe case of neural tube insult (spina bifida cystita) in the Windover culture of Florida (about 7,500 BP), with paralysis and atrophy of the lower limbs, or ever more severe handicaps, who would have required sustained help for all of his 15 years (Dickel & Doran 1989). Tilley & Oxenham (2011) also document the case of a severely disabled young man from Vietnam (about 4,000 BP), paralysed from the waist down.

[9] Some have argued that palaeopathology does not provide evidence of compassion. Dettwyler (1991: 380) points out that the disabled are not the only ones who are not as productive as most members of a group, since children are unproductive too. Another argument is that some disabled people can be productive in some ways. The arguments, however, are not really compelling. Children are non-productive and that is precisely why we have evolved kin-selection motivations. The fact that in modern contexts disabled individuals can be productive is irrelevant to the fact that in nomadic foraging conditions, they certainly needed social support.

[10] Note that the detection of free-riding is not the result of a simple 'benefit without cost' cue, but takes into account many other relevant aspects of the situation, including, most importantly, the extent to which the partner's actions are voluntary (Delton, Cosmides, Guemo, Robertson & Tooby 2012).

[11] The difference lies in the fact that people represent the distribution of other people's representations about the individual. In other words, *opinion* is the belief that *p* (e.g. that 'XYZ is a good/bad/etc. person'), while *reputation* is the meta-belief 'most people believe that *p*' (or 'it has been established that *p*', or other possible variants).

[12] The notion of karma is familiar to most people in South Asia, literate or not (for a survey, see, e.g., Keyes & Daniel 1983). However, karma is mostly invoked as a general, highly abstract property of the world, but often left aside when people want to explain particular cases of misfortune (for Andhra Pradesh, see, e.g., Hiebert 1983: 125; for Tamils, see Daniel 1983: 29; for Himachal Pradesh, see Sharma 1973: 351; for a general survey, see M. Dean 2013).

[13] Another social psychological interpretation posits a mechanism of 'defensive attribution' (Walster 1966), whereby people, faced with evidence of misfortune, try to maintain a belief that they have control over their lives, and that such events could not possibly happen to them. This could motivate them to distance themselves from victims, including through derogation and attribution of responsibility (Burger 1981).

[14] However, it must be noted that Just World Belief questionnaires themselves (see, e.g., Lipkus 1991) include items that are so semantically close to 'accident victims should be blamed' that the correlation is hardly surprising – subjects might be making explicit, in their questionnaire responses, an assumption that guides their judgements in the experiment. Also, the correlation does not appear in some domains, including in many cases of violent crime, where it should be highest (Kleinke & Meyer 1990).

REFERENCES

Afe, A.E. 2013. Taboos and the maintenance of social order in the old Ondo Province, Southwestern Nigeria. *African Research Review* **7**, 95-109.

Astuti, R. & M. Bloch 2015. The causal cognition of wrong doing: incest, intentionality, and morality. *Frontiers in Psychology*, 18 February (available online: *https://www.frontiersin.org/articles/10.3389/fpsyg.2015.00136/full*, accessed 30 August 2022).

Barrett, J.L. & F.C. Keil 1996. Conceptualizing a nonnatural entity: anthropomorphism in God concepts. *Cognitive Psychology* **31**, 219-47.

Baumard, N. 2011. Punishment is not a group adaptation: humans punish to restore fairness rather than to support group cooperation. *Mind & Society* **10**, 1-26.

———, J.-B. André & D. Sperber 2013. A mutualistic approach to morality: the evolution of fairness by partner-choice. *Behavioral and Brain Sciences* **36**, 59-78.

Blanchard, D.C., G. Griebel, R. Pobbe & R.J. Blanchard 2011. Risk assessment as an evolved threat detection and analysis process. *Neuroscience and Biobehavioral Reviews* **35**, 991-8.

Bliege Bird, R. & E.A. Power 2015. Prosocial signaling and cooperation among Martu hunters. *Evolution and Human Behavior* **36**, 389-97.

Bonhomme, J. 2012. The dangers of anonymity: witchcraft, rumor, and modernity in Africa. *Hau: Journal of Ethnographic Theory* **2: 2**, 205-33.

Boyd, R. & P.J. Richerson 1985. *Culture and the evolutionary process*. Chicago: University Press.

Boyer, P. & B. Bergstrom 2011. Threat-detection in child development: an evolutionary perspective. *Neuroscience and Biobehavioral Reviews* **35**, 1034-41.

Brennan, G. & P. Pettit 2004. *The economy of esteem: an essay on civil and political society*. Oxford: University Press.

Burger, J.M. 1981. Motivational biases in the attribution of responsibility for an accident: a meta-analysis of the defensive-attribution hypothesis. *Psychological Bulletin* **90**, 496-512.

Burkert, W. 1985. *Greek religion* (trans. J. Raffan). Cambridge: University Press.

Cialdini, R.B., D.T. Kenrick & J.H. Hoerig 1976. Victim derogation in the Lerner paradigm: just world or just justification? *Journal of Personality and Social Psychology* **33**, 719-24.

Claidière, N., T.C. Scott-Phillips & D. Sperber 2014. How Darwinian is cultural evolution? *Philosophical Transactions of the Royal Society of London B: Biological Sciences* **369** (available online: *https://royalsocietypublishing.org/doi/10.1098/rstb.2013.0368*, accessed 31 August 2022).

Correia, I., H. Alves, R. Sutton, M. Ramos, M. Gouveia-Pereira & J. Vala 2012. When do people derogate or psychologically distance themselves from victims? Belief in a just world and ingroup identification. *Personality and Individual Differences* **53**, 747-52.

Cosmides, L. & J. Tooby 1992. Cognitive adaptations for social exchange. In *The adapted mind: evolutionary psychology and the generation of culture* (eds) J.H. Barkow, L. Cosmides & J. Tooby, 163-228. Oxford: University Press.

Crandall, C.S., J. Glor & T.W. Britt 1997. AIDS-related stigmatization: instrumental and symbolic attitudes. *Journal of Applied Social Psychology* **27**, 95-123.

Daniel, S.B. 1983. Tool box approach of the Tamil to the issues of moral responsibility and human destiny. In *Karma: an anthropological inquiry* (eds) C.F. Keyes & E.V. Daniel, 28-62. Berkeley: University of California Press.

DEAN, C.J. 2017. *Aversion and erasure: the fate of the victim after the Holocaust*. Ithaca, N.Y.: Cornell University Press.

DEAN, M. 2013. From 'evil eye' anxiety to the desirability of envy: status, consumption and the politics of visibility in urban South India. *Contributions to Indian Sociology* (N.S.) **47**, 185-216.

DELTON, A.W., L. COSMIDES, M. GUEMO, T.E. ROBERTSON & J. TOOBY 2012. The psychosemantics of free riding: dissecting the architecture of a moral concept. *Journal of Personality and Social Psychology* **102**, 1252-70.

———, M.M. KRASNOW, L. COSMIDES & J. TOOBY 2011. Evolution of direct reciprocity under uncertainty can explain human generosity in one-shot encounters. *PNAS Proceedings of the National Academy of Sciences of the United States of America* **108**, 13335-40.

DETTWYLER, K.A. 1991. Can paleopathology provide evidence for 'compassion'? *American Journal of Physical Anthropology* **84**, 375-84.

DICKEL, D.N. & G.H. DORAN 1989. Severe neural tube defect syndrome from the Early Archaic of Florida. *American Journal of Physical Anthropology* **80**, 325-34.

DOUGLAS, M. & E.E. EVANS-PRITCHARD (eds) 1970. *Witchcraft confessions and accusations*. London: Tavistock Publications.

DOYLE, A.C. 1903. *Memoirs of Sherlock Holmes*. New York: Harper & Bros.

ELLEN, R. 1993. Anger, anxiety and sorcery: an analysis of some Nuaulu case material from Seram, Eastern Indonesia. In *Understanding witchcraft and sorcery in Southeast Asia* (eds) C.W. Watson & R. Ellen, 81-98. Honolulu: University of Hawai'i Press.

EMBER, C.R. & M. EMBER 1997. Violence in the ethnographic record: results of cross-cultural research. In *Troubled times: violence and warfare in the past* (eds) D.L. Martin & D.W. Frayer, 1-20. Amsterdam: Gordon and Breach.

EVANS-PRITCHARD, E.E. 1937. *Witchcraft, oracles and magic among the Azande*. Oxford: Clarendon Press.

FAVRET-SAADA, J. 1980. *Deadly words: witchcraft in the bocage*. Cambridge: University Press.

FISKE, A.P. 2000. Complementarity theory: why human social capacities evolved to require cultural complements. *Personality & Social Psychology Review* **4**, 76-94.

FORTES, M. 1987. *Religion, morality and the person: essays on Tallensi religion*. Cambridge: University Press.

FORTUNE, R. 1932. *Sorcerers of Dobu: the social anthropology of the Dobu Islanders of the western Pacific*. London: E.P. Dutton.

FURNHAM, A. 2003. Belief in a just world: research progress over the past decade. *Personality and Individual Differences* **34**, 795-817.

GINTIS, H. 2000. Strong reciprocity and human sociality. *Journal of Theoretical Biology* **206**, 169-79.

GLUCKMAN, M. 1955. *The judicial process among the Barotse of Northern Rhodesia*. Manchester: University Press on behalf of the Rhodes-Livingstone Institute, Northern Rhodesia.

GOURASH, N. 1978. Help-seeking: a review of the literature. *American Journal of Community Psychology* **6**, 413-23.

GRAUER, A.L. (ed.) 2011. *A companion to paleopathology*. New York: Wiley.

GURVEN, M. 2004. To give and to give not: the behavioral ecology of human food transfers. *Behavioral and Brain Sciences* **27**, 543-60.

HAFER, C.L. & L. BÈGUE 2005. Experimental research on just-world theory: problems, developments, and future challenges. *Psychological Bulletin* **131**, 128-67.

HARVEY, A.J., M.J. CALLAN & W.J. MATTHEWS 2014. How much does effortful thinking underlie observers' reactions to victimization? *Social Justice Research* **27**, 175-208.

HAWKEY, D.E. 1998. Disability, compassion and the skeletal record: using musculoskeletal stress markers (MSM) to construct an osteobiography from early New Mexico. *International Journal of Osteoarchaeology* **8**, 326-40.

HEMPEL, P.S. 2011. *Evolutionary parasitology: the integrated study of infections, immunology, ecology, and genetics*. Oxford: University Press.

HIEBERT, P.G. 1983. Karma and other explanation traditions in a South Indian village. In *Karma: an anthropological inquiry* (eds) C.F. Keyes & E.V. Daniel, 119-30. Berkeley: University of California Press.

HILL, K., A.M. HURTADO & R.S. WALKER 2007. High adult mortality among Hiwi hunter-gatherers: implications for human evolution. *Journal of Human Evolution* **52**, 443-54.

HORTON, W.R.G. 1967. African traditional thought and Western science. *Africa* **37**: 2, 50-71.

JUDD, M.A. & R. REDFERN 2011. Trauma. In *A companion to paleopathology* (ed.) A.L. Grauer, 359-79. New York: Wiley.

Kaplan, H.S. & M. Gurven 2005. The natural history of human food sharing and cooperation: a review and a new multi-individual approach to the negotiation of norms. In *Moral sentiments and material interests: the foundations of cooperation in economic life* (eds) H. Gintis, S. Bowles, R. Boyd & E. Fehr, 75-113. Cambridge, Mass.: MIT Press.

Keesing, R.M. 1982. *Kastom* in Melanesia: an overview. *Mankind* **13**, 297-301.

Kelly, R.L. 1995. *The foraging spectrum: diversity in hunter-gatherer lifeways*. Washington, D.C.: Smithsonian Institution Press.

Kennedy, J.G. 1967. Mushahara: a Nubian concept of supernatural danger and the theory of taboo. *American Anthropologist* **69**, 685-702.

Keyes, C.F. & E.V. Daniel (eds) 1983. *Karma: an anthropological inquiry*. Berkeley: University of California Press.

Kleinke, C.L. & C. Meyer 1990. Evaluation of rape victim by men and women with high and low belief in a just world. *Psychology of Women Quarterly* **14**, 343-53.

Kluckhohn, C. 1944. *Navaho witchcraft*. Boston: Beacon Press.

Kovacek, U.G. 1996. Causal attributions for extreme negative events: examining attribution biases. Psy.D., dissertation, Fuller Theological Seminary.

Kurzban, R. & M.R. Leary 2001. Evolutionary origins of stigmatization: the functions of social exclusion. *Psychological Bulletin* **127**, 187-208.

La Fontaine, J.S. 1998. *Speak of the devil: tales of Satanic abuse in contemporary England*. Cambridge: University Press.

La Rochefoucauld, F. de 1981 [1665]. *Maxims* (trans. L. Tancock). Harmondsworth: Penguin.

Leacock, E. & R. Lee 1982. Introduction. In *Politics and history in band societies* (eds) E. Leacock & R. Lee, 1-20. Cambridge: University Press.

Lerner, M.J. 1965. Evaluation of performance as a function of performer's reward and attractiveness. *Journal of Personality and Social Psychology* **1**, 355-60.

——— 1980. *The belief in a just world: a fundamental delusion*. New York: Plenum.

——— & C.H. Simmons 1966. Observer's reaction to the 'innocent victim': compassion or rejection? *Journal of Personality and Social Psychology* **4**, 203-10.

Li, N.P., M. van Vugt & S.M. Colarelli 2018. The evolutionary mismatch hypothesis: implications for psychological science. *Current Directions in Psychological Science* **27**, 38-44.

Lipkus, I. 1991. The construction and preliminary validation of a global belief in a just world scale and the exploratory analysis of the multidimensional belief in a just world scale. *Personality and Individual Differences* **12**, 1171-8.

Luhrmann, T.M. 1989. *Persuasions of the witch's craft*. Oxford: Blackwell.

Luna, L., C. Aranda, L. Bosio & M. Beron 2008. A case of multiple metastasis in Late Holocene hunter-gatherers from the Argentine Pampean region. *International Journal of Osteoarchaeology* **18**, 492-506.

Ortner, D.J. 2003. *Identification of pathological conditions in human skeletal remains*. London: Academic Press.

Reijneveld, S.A., M.F. van der Wal, E. Brugman, R.A.H. Sing & S.P. Verloove-Vanhorick 2004. Infant crying and abuse. *The Lancet* **364**, 1340-2.

Roberts, C.A. & K. Manchester 2005. *The archaeology of disease* (Third edition). Ithaca, N.Y.: Cornell University Press.

Roese, N.J. 1997. Counterfactual thinking. *Psychological Bulletin* **121**, 133-48.

Rubin, Z. & L.A. Peplau 1975. Who believes in a just world? *Journal of Social Issues* **31**: 3, 65-89.

Seabright, P. 2010. *The company of strangers: a natural history of economic life*. Princeton: University Press.

Sharma, U. 1973. Theodicy and the doctrine of karma. *Man* (N.S.) **8**, 347-64.

Shaver, K.G. 1970. Defensive attribution: effects of severity and relevance on the responsibility assigned for an accident. *Journal of Personality and Social Psychology* **14**, 101-13.

Singh, M. 2018. The cultural evolution of shamanism. *Behavioral and Brain Sciences* **41**, art. e66.

Slone, D.J. 2004. *Theological incorrectness: why religious people believe what they shouldn't*. Oxford: University Press.

Sperber, D. 1996. *Explaining culture: a naturalistic approach*. Oxford: Blackwell.

——— 1999. Conceptual tools for a natural science of society and culture. *Proceedings of the British Academy* **111**, 297-317.

——— & N. Baumard 2012. Moral reputation: an evolutionary and cognitive perspective. *Mind & Language* **27**, 495-518.

STANDEN, V.G. & B.T. ARRIAZA 2000. Trauma in the preceramic coastal populations of northern Chile: violence or occupational hazards? *American Journal of Physical Anthropology* **112**, 239-49.

STRÖMWALL, L.A., H. ALFREDSSON & S. LANDSTRÖM 2013. Rape victim and perpetrator blame and the Just World hypothesis: the influence of victim gender and age. *Journal of Sexual Aggression* **19**, 207-17.

SUGIYAMA, L.S. 2004*a*. Does the occurrence and duration of health insults among Shiwiar forager horticulturalists indicate that health care provisioning reduces juvenile mortality? *Socioeconomic Aspects of Human Behavioral Ecology: Research in Economic Anthropology* **23**, 377-400.

——— 2004*b*. Illness, injury, and disability among Shiwiar forager-horticulturalists: implications of health-risk buffering for the evolution of human life history. *American Journal of Physical Anthropology* **123**, 371-89.

——— & R. CHACON 2000. Effects of illness and injury on foraging among the Yora and Shiwiar: pathology risk as adaptive problem. In *Human behavior and adaptation: an anthropological perspective* (eds) L. Cronk, N. Chagnon & W. Irons, 371-95. Abingdon, Oxon: Routledge.

——— & M.S. SUGIYAMA 2003. Social roles, prestige, and health risk. *Human Nature* **14**, 165-90.

SUTTON, R.M. & E.J. WINNARD 2007. Looking ahead through lenses of justice: the relevance of just-world beliefs to intentions and confidence in the future. *British Journal of Social Psychology* **46**, 649-66.

SUZUKI, T. 1998. Indicators of stress in prehistoric Jomon skeletal remains in Japan. *Anthropological Science* **106: S1**, 127-37.

SYLWESTER, K. & G. ROBERTS 2010. Cooperators benefit through reputation-based partner choice in economic games. *Biology Letters* **6**, 659-62.

THOMAS, K. 1997. *Religion and the decline of magic: studies in popular beliefs in sixteenth- and seventeenth-century England*. Oxford: University Press.

TILLEY, L. & M.F. OXENHAM 2011. Survival against the odds: modeling the social implications of care provision to seriously disabled individuals. *International Journal of Paleopathology* **1**, 35-42.

TOOBY, J. & L. COSMIDES 1992. The psychological foundations of culture. In *The adapted mind: evolutionary psychology and the generation of culture* (eds) J.H. Barkow, L. Cosmides & J. Tooby, 19-136. Oxford: University Press.

——— 1996. Friendship and the banker's paradox: other pathways to the evolution of adaptations for altruism. In *Evolution of social behaviour patterns in primates and man* (eds) W.G. Runciman, J.M. Smith & R.I.M. Dunbar, 119-43. Oxford: University Press.

TRINKAUS, E. 2014. *The Shanidar Neandertals*. Amsterdam: Elsevier Science.

WADLEY, R.L. 1999. Disrespecting the dead and the living: Iban ancestor worship and the violation of mourning taboos. *Journal of the Royal Anthropological Institute* (N.S.) **5**, 595-610.

WALSTER, E. 1966. Assignment of responsibility for an accident. *Journal of Personality and Social Psychology* **3**, 73-9.

WARNEKEN, F. & M. TOMASELLO 2006. Altruistic helping in human infants and young chimpanzees. *Science* **311**, 1301-3.

WEISS-WENDT, A. 2008. Why the Holocaust does not matter to Estonians. *Journal of Baltic Studies* **39**, 475-97.

WENZEL, K., S. SCHINDLER & M.-A. REINHARD 2017. General belief in a just world is positively associated with dishonest behavior. *Frontiers in Psychology*, 10 October (available online: *https://www.frontiersin.org/articles/10.3389/fpsyg.2017.01770/full*, accessed 30 August 2022).

WESTON, D. 2011. Nonspecific infection in paleopathology: interpreting periosteal reactions. In *A companion to paleopathology* (ed.) A.L. Grauer, 492-512. New York: Wiley.

Pourquoi nous faisons des reproches aux victimes, accusons les sorcières, inventons des tabous et invoquons les esprits : un modèle de réponses stratégiques à l'infortune

Résumé

Les explications de l'infortune alimentent de multiples discours culturels dans la plupart des sociétés humaines. L'intervention d'agents surhumains (dieux, ancêtres, etc.), la sorcellerie, le karma et la violation de règles ou « tabous » spécifiques en sont quelques thèmes récurrents. Dans les grandes sociétés modernes, on réagit souvent au malheur, par exemple aux accidents ou aux agressions, en critiquant ses victimes. Ces réactions peuvent sembler à la fois discordantes et intrigantes en cela que les récits proposés d'événements malencontreux n'apportent pas d'informations utiles sur leur cause ni sur le meilleur moyen de les éviter. Pourtant, elles ont un sens si nous les voyons dans le contexte de notre évolution, au cours de laquelle

accidents, agressions et maladies étaient monnaie courante et la seule mesure palliative était le soutien du groupe aux victimes. Dans ce contexte, tous les membres d'un groupe pourraient être (a) appelés à apporter leur soutien, (b) disposés à offrir ce soutien afin de conserver leur réputation de coopérateurs et (c) désireux de limiter ce soutien à cause de son coût. Les explications récurrentes de l'infortune constitueraient dès lors des tentatives stratégiques de créer et de diffuser une description spécifique de la situation, qui en concentrerait la responsabilité et le coût potentiel sur quelques individus. Ce modèle stratégique rend compte des explications mettant en cause des entités mystiques malintentionnées (ancêtres, sorcellerie, etc.) qui laisseraient sinon perplexes, ainsi que la tendance à dénigrer les victimes. Il ouvre également de nouvelles perspectives sur ces phénomènes culturels.

Pascal Boyer studied philosophy and anthropology at Paris and then Cambridge with Jack Goody. He has worked mostly on the cognitive capacities underlying cultural transmission, and is the author of *Religion explained* (Basic Books, 2001) and *Minds make societies* (Yale University Press, 2018). He teaches at Washington University in St Louis, USA.

Departments of Anthropology, and Psychology & Brain Sciences, Washington University in St Louis, One Brookings Drive, St Louis, MO 63130, USA. pboyer@wustl.edu