

Introduction: Psychology and Culture

Hugo Mercier

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Although there might seem to be a natural continuity and interplay between the cognitive sciences and the social sciences, the integration of the two has, on the whole, been fraught with difficulties. In some areas the transition was relatively smooth. For instance, political psychology is now a well-recognized branch both of psychology and of political science. In economics, things have been more difficult, with the entrenched assumption of a perfectly rational *homo economicus*, but behavioral economics is now well recognized, and one of the founders of the field, Daniel Kahneman, went on to win a Nobel Prize.

Social and cognitive sciences have proven more difficult to bridge in anthropology and sociology. Most of the efforts have been pursued—and resisted—in anthropology (although, for sociology, see Clément and Kaufmann 2011). At first, scholars attempted to import the methods of evolutionary biology straight into the study of culture (Dawkins 1976; Lumsden and Wilson 1981). This prompted a severe backlash from anthropologists and other social scientists. Later, and partly as a result of the formation of the field of evolutionary psychology, methods and results from cognitive science were brought to bear on the topic of cultural evolution.

One of the most influential attempts to understand cultural phenomena using these new tools is the Gene-Culture Coevolution (or Dual Inheritance Theory) model of Boyd and Richerson (1985). To understand the spread of cultural elements, this framework chiefly relies on simple social psychological biases, such as the tendency to preferentially imitate the behaviors of the majority, or of the most

prestigious individuals. The framework also incorporates other psychological mechanisms under the umbrella of content biases: these mechanisms only affect the transmission of particular cultural contents, from representations of faces to knowledge about poisonous plants. However, in order to build tractable models, the Gene Culture Coevolution framework has mostly investigated the effects of simple social biases and has stayed away from the reliance on more complex cognitive mechanisms.

The framework of the epidemiology of representation, developed by Sperber (1996; Claidière and Sperber 2007), may offer a more promising perspective to integrate a rich view of psychology and culture. This model starts from the observation that most cultural transmission is extremely noisy. For instance, when someone says something, the interlocutor might not understand her exact meaning, he is likely to forget some of what was said, and to transform the content again in the process of retelling. As a result, the elements that are most likely to become widespread, or to survive across generations, are not only those that best withstand noisy transmission, but also those towards which noisy transmission converges. Psychological mechanisms are one of the factors that influence which element is more likely to be robust enough, or attractive enough, to become widespread. For instance, a recent study has argued that the strong psychological reaction elicited by direct eye-gaze helps explain why the art of portraiture tends to converge on subjects that gaze right at the viewer (Morin 2013).

On the whole, cognitively informed approaches to culture have had a limited impact on mainstream cultural anthropology, in large part, it seems, because of fundamental disagreements about methods or even ontology. In psychology, by contrast, there is much less resistance to the idea that culture ought to be taken into account. For instance, in 2010 Henrich, Heine and Norenzayan

H. Mercier (✉)
Centre de Science Cognitives, Université de Neuchâtel,
Neuchâtel, Switzerland
e-mail: hugo.mercier@gmail.com

published an article pointing out that most of experimental psychology has focused almost exclusively on WEIRD people (people who live in Western Educated Industrialized Rich Democratic countries; Henrich et al. 2010). These WEIRD people constitute only 12 % of the world population, yet 96 % of psychology experiments target them. This is especially problematic since WEIRD people appear to be, in many cases, a very unrepresentative sample—for instance, they belong to the most individualistic cultures studied. The article is widely quoted, on the whole approvingly, suggesting that many experimental psychologists share the authors' concern for lack of cross-cultural controls. However, it remains to be seen whether this will change current practices.

Even when psychologists pay attention to culture, it is most of the time in the form of straightforward cross-cultural studies. These studies compare the performance of samples from two populations (more often than not 'Easterners'—'EEIR(D)' people—and 'Westerners') on a standard psychological task. The issue in many cases is that a great many variables are confounded, so that pointing out the causally relevant factors at play can be daunting. For instance, Masuda and Nisbett (2001) showed across several experiments that Easterners tend to pay more attention to contextual information, and Westerners more to focal information in their perception of visual scenes. These differences were interpreted chiefly in terms of high-level cultural constructs such as "Asians' relatively greater interdependence or concern with the social world" (Miyamoto et al. 2006, p. 113). However, later experiments by the same group revealed that the immediate visual environment plays a major role in these differences. American participants shown pictures of Japanese streets—cluttered with various objects—paid more attention to the context (than a control group), while Japanese participants shown pictures of American streets—relatively barren—paid more attention to focal objects (than a control group; Miyamoto et al. 2006). Such conflicting patterns of cultural differences are not uncommon, and have led some researchers to suggest that we may be better served by using narrower and more precisely defined constructs, such as specific religious beliefs (Colzato et al. 2010).

What should be clear from this very short overview is that much work remains to be done at the intersection of psychology and culture. Indeed, one might hope that a substantial part of anthropology and of psychology (at least when it comes to high level cognition) becomes devoted to the numerous questions raised by this intersection. The present issue offers a broad panorama of the type of study that can be done mixing psychology and culture, beyond standard cross-cultural psychological studies.

Harris and Lane describe a series of studies testing very young children's ability to evaluate testimony. This

research stems from a larger project investigating the way older children (often preschoolers) evaluate testimony, a project born of the observation that much of children's knowledge comes from others rather than from personal observation. While this is true of many non-cultural beliefs (who their uncle is, say), it is even truer (by definition) of cultural beliefs and knowledge, from folktales to science.

The research reviewed by Harris and Lane reveals for instance that 14-month-olds look for, and take into account their mothers' expressions when deciding whether to approach an apparently deep cliff or not (Sorice et al. 1985). In this case the mother's influence on her child is unlikely to have been cultural—in a naturalistic situation, she would presumably have used a perceptual assessment of the danger—or to become cultural—the child is not particularly likely to pass on the mother's assessment to other people. However, it is easy to imagine cases in which the same process is deeply cultural. For instance, a distrust of electric sockets could be passed on in this way without anyone having to learn firsthand of their danger.

Other studies with equally young children also highlight another factor that could have critical effects for the spread of culture: epistemic vigilance. Like older children and adults, very young children do not blindly accept communicated information: they are epistemically vigilant (Sperber et al. 2010). Tamis-LeMonda et al. (2008) replicated and extended the results above by showing that while 18-month-olds were taking their mother's advice into account when deciding whether or not to engage on a slope, they only did so when the slope was 'borderline,' and not when it was either clearly safe or clearly risky. These results show that children's intuitions shape the social information they take in. To the extent that culture can spread through these channels, such restrictions can play an important role on what is more likely to become cultural. For instance, children's lack of intuition that electric sockets are dangerous could slow the spread of the cultural practice of avoiding these sockets.

As Harris and Lane, *Kaufmann and Clément* review and offer a new interpretation of psychological research relevant to the explanation of cultural phenomena: the study of naïve sociology. Hirschfeld suggested that as humans are endowed with mechanisms to understand the physical world (naïve physics) or other people's minds (naïve psychology), they are also equipped with mechanisms to understand the dynamic at play between human groups (Hirschfeld, 1995). In their article, Kaufmann and Clément defend a different view of naïve sociology, one that is not based on individuals (who belongs to what group), but on relations (who is friends with whom, etc.). Moreover, they claim that our naïve understanding of relations is intrinsically deontic: we cannot help but judge how others act with the various individuals they are related to.

On this basis, Kaufmann and Clément show how these intuitions about relations shape culture. They note for instance the relative ease with which anthropologists discovering cultures very different from their own can recognize various forms of relations, from parent-children to market transactions. Even when they assume very complex, culturally specific forms, most relationships—such as the relationship between the members of a given nation—can be understood as being related to a basic form of interaction, one that any human could recognize. Kaufmann and Clément also stress that the shaping of culture by psychology is not unidirectional. While the fundamental relations can be understood by all humans, they are not all equally salient. For instance, Japanese culture makes the relation of subordination more salient than American culture.

Beyond the relevance of psychology for the study of culture, Kaufmann and Clément defend the more general relevance of cognitive science for the social sciences. One must hope that the new ways of construing naïve sociology developed in the article will help cognitive and social scientists see the mutual relevance of their disciplines.

Pignocchi's analysis of the role of “history and intentions in the experience of artworks” also plays on the back and forth between psychology and culture. Contrary to most past attempts to recruit cognitive science in order to explain the visual arts, Pignocchi does not rely on low-level universal mechanisms; he sides instead with the art historians who noted that “the way we evaluate an artwork always depends on what we know about its context of production,” so that low-level mechanisms play at most a peripheral role, depending on how their output is interpreted. However, the “always” in the previous sentence suggests that universal mechanisms are at play; not low-level perceptual mechanisms, but high-level cognitive mechanisms that enable the viewer to integrate contextual information into her appreciation of a work of art.

It is these high-level mechanisms that Pignocchi is interested in. His approach is original in claiming a central, necessary role for the attribution of intentions to the artist, and in particular the attribution of a wide range of intentions (by contrast with only conscious intentions). Pignocchi relies on work in cognitive science showing the often neglected role played by intention attribution to our understanding of artifacts, communication, and simple motor behavior. For instance, understanding the simplest utterance involves several layers of attribution of intentions. Such high-level cognitive mechanisms as the attribution of intentions naturally take contextual information into account—without this ability, it would be impossible to understand ostensive communication for instance. In the case at hand, contextual information is often of a historical nature: e.g., beliefs about what school of painting the artist

belonged to. As a result, if culturally acquired information shapes our perception of works of art, this is due to universal cognitive mechanisms that are precisely aimed at taking such contextual information into account.

Pignocchi's article illustrates the barrenness of opposing the perspective of the social sciences and of the cognitive sciences. When art historians attempt to dismiss cognitive science by pointing out the role of contextual information in our appreciation of works of art, they are in fact pointing out the role of specific cognitive processes: those that allow us to take contextual information into account (one of the greatest computational feats). A better understanding of these mechanisms could lead to a better understanding of the way we interpret works of art—and vice versa.

As noted above, an important framework bridging psychology and culture is that of Gene-Culture Coevolution. In this framework, the main forces that allow culture to spread and stabilize are social biases that are mostly independent of the content of the information transmitted: the prestige bias and the conformity bias. By contrast, the Sperberian approach stresses the importance of content and how a variety of psychological mechanisms can shape cultural evolution. This latter approach has been successfully applied to the study of religious beliefs. In particular, Boyer (2001) has persuasively argued that widespread religious beliefs tend to be minimally counter-intuitive: they mostly fit the template of a core cognitive mechanism (such as naïve psychology), which makes them easy to understand, but they deviate in one crucial way, making them more interesting and memorable. By contrast, theological beliefs are generally seen to rely more on the former type of mechanisms: ‘blind’ social heuristics that are presumably able to allow the spread of even counter-intuitive beliefs such as that of an omniscient and omnipotent deity.

In her article, *De Cruz* argues that, on the contrary, an approach based on a fine-grained understanding of various psychological mechanisms is also necessary to make sense of counter-intuitive theological beliefs. In particular De Cruz suggests that mechanisms of epistemic vigilance, such as reasoning and coherence checking, exert an important role on the spread of counter-intuitive theological beliefs. For a counter-intuitive theological belief to spread, it has to convince others, others who will typically be experts in the area and who seek to maintain a high level of internal coherence in their beliefs. Indeed, we find in theology some extremely sophisticated arguments, such as Anselm's ontological argument for the existence of God. As a result, some deviations from current beliefs—those that satisfy the constraints of epistemic vigilance mechanisms—are more likely to spread than others.

These processes can lead to the spread of increasingly counter-intuitive beliefs in a stepwise fashion. Given a set

of theological beliefs held at a given time, an effort to improve on the internal coherence of the set can make it more likely to spread—at least among the elite circles that carefully scrutinize arguments—even if some individual beliefs are less intuitive. This could explain how deeply counter-intuitive beliefs (such as those mentioned above, omniscience and omnipotence) could emerge and prove culturally successful, at least in the rarefied sphere of sophisticated theology.

The last two contributions to this collection take as their starting point a specific cognitive mechanism and confront it to the realities and complexities of culture. In both cases, the cognitive mechanism is reasoning, and, more particularly, reasoning viewed as an argumentative ability. Mercier and Sperber (2011) relied on the experimental psychology literature to defend the view (akin to the prior suggestions of, e.g., Billig 1996; Perelman and Olbrechts-Tyteca 1958) that the function of human reasoning is primarily argumentative: to convince others through arguments, and to examine others' arguments so as to only be convinced when one ought to be.

While such an argumentative theory of reasoning might be interpreted as a justification for blatantly biased, barren argumentation, Morin urges his reader to not jump to conclusions. He rightfully notes that for such a theory to be plausible, people have to sometimes change their mind when confronted with good arguments—otherwise argumentation would be pointless. Moreover, Morin points out that the effects of reasoning depend on the goals of the reasoner—a lawyer and a scientist will not make the same use of it, for instance. In other words, the outcome of reasoning depends on complex interactions with other psychological mechanisms. While in some experimental contexts, it is possible to reduce these 'interferences' to a minimum—or at least to keep them constant—in real life they often play an overwhelming role, creating cautious reasoners eager to take in others' arguments or sophists bent on persuading by any means available. In order to be useful to social scientists, specifications of cognitive mechanisms have to be careful to describe not only their individual functioning, but also the ways in which they interact (the main ways at least, as the possibilities are limitless).

Mercier and Heintz confront the argumentative theory of reasoning with a specific cultural context: science. As noted by Morin (following, e.g., Shapin 1991), in the West at least the popular image of a scientist is that of a brain detached not only from lowly material needs, but also from other people. In popular imagination, the scientist understands the world from the confines of his brilliant, objective, solitary mind.

This does not fit well with the argumentative theory of reasoning, which predicts that solitary reasoning, plagued

by the myside bias, should often lead to poor outcomes, while group discussion should by contrast let the best arguments carry the day and allow the best ideas to spread and develop.

However, even a cursory examination, as the one offered here, of the historical, sociological, ethnographic and psychological evidence militates against the popular view of science. Like everyone else, scientists are biased, and they rely hugely on argumentation for their discoveries.

Thus a specific cultural institution—in this case science—can be used to evaluate the robustness of psychological theories. Indeed, such cases provide evidence that would be unobtainable in a laboratory: how could one motivate participants to think about specific problems for so long and with such intensity?

Mercier and Heintz' review also revealed that, even if scientists rely on the same reasoning abilities as everyone else, the specific context in which they make use of these abilities exerts a strong influence on the final outcomes. In Morin's terms, scientific institutions reward some virtues of ingenuity, such as thoroughness, enabling solitary reasoning about science to yield better outcomes than solitary reasoning about less constrained domains. Although this path is not pursued here, one can hope that a better understanding of reasoning—along with other cognitive mechanisms—will yield a better understanding of science in all its cultural complexity.

Even though they do not represent the full range of possibilities, by far, the articles of this special issue already demonstrate the wide range of research that can be carried out at the intersection of psychology and culture, and hopefully will stimulate further research in this most promising direction.

References

- Billig M (1996) *Arguing and thinking: a rhetorical approach to social psychology*. Cambridge University Press, Cambridge
- Boyd R, Richerson PJ (1985) *Culture and the evolutionary process*. Chicago University Press, Chicago
- Boyer P (2001) *Religion explained*. Heinemann, London
- Claidière N, Sperber D (2007) The role of attraction in cultural evolution. *J Cognit Cult* 7(1–2):89–111
- Clément F, Kaufmann L (eds) (2011) *La sociologie cognitive*. Orphys/Maison des Sciences de l'Homme, Paris
- Colzato LS, van Beest I, van den Wildenberg WPM, Scorolli C, Dorchin S, Meiran N, Borghi AM, Hommel B (2010) God: do I have your attention? *Cognition* 117:87–94
- Dawkins R (1976) *The selfish gene*. Oxford University Press, Oxford
- Henrich J, Heine SJ, Norenzayan A (2010) The weirdest people in the world. *Behav Brain Sci* 33(2–3):61–83
- Hirschfeld LA (1995) Do children have a theory of race? *Cognition* 54(2):209–252
- Lumsden CJ, Wilson EO (1981) *Genes, mind and culture: the coevolutionary process*. Harvard University Press, Cambridge

- Masuda T, Nisbett RE (2001) Attending holistically versus analytically: comparing the context sensitivity of Japanese and Americans. *J Pers Soc Psychol* 81(5):922–934
- Mercier H, Sperber D (2011) Why do humans reason? Arguments for an argumentative theory. *Behav Brain Sci* 34(2):57–74
- Miyamoto Y, Nisbett RE, Masuda T (2006) Culture and the physical environment: holistic versus analytic perceptual affordances. *Psychol Sci* 16(2):113–119
- Morin O (2013) How portraits turned their eyes upon us: visual preferences and demographic change in cultural evolution. *Evol Hum Behav* 34(3):222–229
- Perelman C, Olbrechts-Tyteca L (1958) *La nouvelle rhétorique: Traité de l'argumentation*, vol 1. Presses universitaires de France, Paris
- Shapin S (1991) “The mind is its own place”: science and solitude in seventeenth-century England. *Sci Context* 4(01):191–218
- Sorce JF, Emde RN, Campos JJ, Klinnert MD (1985) Maternal emotional signaling: its effect on the visual cliff behavior of 1-year-olds. *Dev Psychol* 21(1):195–200
- Sperber D (1996) *Explaining culture: a naturalistic approach*. Blackwell, Oxford
- Sperber D, Clément F, Heintz C, Mascaro O, Mercier H, Origgi G, Wilson D (2010) Epistemic vigilance. *Mind Lang* 25(4):359–393
- Tamis-LeMonda CS, Adolph KE, Lobo SA, Karasik LB, Ishak S, Dimitropoulou KA (2008) When infants take mothers' advice: 18-month-olds integrate perceptual and social information to guide motor action. *Dev Psychol* 44(3):734–746