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ISSUES

Methods for studying cultural attraction

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Cultural attraction theory (CAT) describes a general evolutionary process, cultural attraction, by which the spread and stability of cultural items (beliefs, practices, artifacts, etc.) result not just from differential reproduction, but also from transformations that systematically favor the reconstruction of cultural items of specific types. In this way, CAT aims to provide a general framework for the study of cultural evolution. In a thoughtful critical analysis, Buskell questions the ability of CAT to provide methodological guidance for research in cultural evolution. Can CAT be used to develop the sort of mid-range theories and models that often drive empirical work? Here we argue that CAT can indeed be used in this way, and we outline the methodological practices that students of cultural attraction have used and are currently developing.

KEYWORDS

attraction, CAT, cultural evolution, method

1 | INTRODUCTION

Cultural attraction theory (CAT) is a theoretical framework that aims, ambitiously, at the development of causal explanations of cultural phenomena. In our recent article, "Four misunderstandings about cultural attraction" (hereafter "Misunderstandings") we addressed misreadings of this project—and we also summarized some recent empirical applications of it.[1] We characterized CAT as "a research agenda the purpose of which is to develop causal explanations of cultural phenomena." Note the word "agenda": CAT does not make specific predictions about specific cases, but instead aims to provide a framework that connects explanation in anthropology with findings and explanation in the natural sciences; and within which individual researchers can develop models and predictions for specific empirical cases of cultural phenomena. Theories always need to be supplemented by auxiliary hypotheses to issue predictions, and CAT needs to be richly supplemented: not just with descriptions of local and historical facts, but also with theories from the other sciences—especially cognitive psychology. This makes a CAT a framework, within which hypotheses about cognition can be combined with social, cultural, and historical hypotheses to give testable explanations. CAT specifies the explanandum (attractors) and what form the explanans can have (causal factors of attraction)—but is open-minded about which specific methods should be used in particular cases. It points out the diversity of possible causes that might shape a cultural phenomenon and even the causal promiscuity in culture—and in consequence it defaults toward a common sense attitude for studying culture empirically: if the method is fruitful for gathering data or for explaining phenomena, then go for it.

Andrew Buskell, in his reply to Misunderstandings—and also Kim Sterelny in his review of Sperber's 1996 book "Explaining Culture"—asks if this methodological flexibility undermines the project.[2,3] Specifically, Buskell wonders if CAT provides working social scientists with too little methodological guidance to study specific cultural phenomena empirically. Does CAT provide any useful tools for the study of culture? These questions set a useful challenge. Several papers about cultural attraction, including ours, make general theoretical claims about the nature of cultural phenomena, but they seem not to identify specific research practices that would enable social scientists to fructify the theory in case studies.

Our response to Buskell's challenge is twofold. The first reply is that the proof is in the pudding. In the Introduction to Misunderstandings[1] we referenced many recent studies that have made use of CAT, and we discussed these and other examples throughout the article. In doing so we effectively provided an up-to-date summary of this empirical literature, which includes topics as diverse as folk biology, supernatural concepts, portraiture, chimeras, pseudoscientific and scientific beliefs, writing systems, folk medicine, kinship, and numerous others too. In short, CAT is earning its keep as a theoretical framework simply by being useful. One of our motivations in writing

Misunderstandings was to motivate scientists to do further such studies—not because there exists a unique good method of investigation, but because CAT provides sound and strong theoretical foundations on which to build.

The second answer to Buskell's challenge would be to make more explicit the methodological guidance that this theoretical foundation provides. After all, there is such guidance, and it is not trivial—but Buskell is right that it has not been spelled out in much detail to date. We here outline that advice.

2 | METHODOLOGICAL ADVICE

Having said that, any such guidance should not be read as a list of specific dos and don'ts, because, in fact, the first piece of methodological advice is:

> Use the methods that are best suited to the specifics of the cultural phenomenon studied.

This stems from the recognition that factors of attraction are, as Buskell acknowledges, extremely diverse: they can be found in the properties of human cognition as well as in local beliefs, in general physical properties of the earth (e.g., gravity, existence of wind) as well as in local ecological aspects (e.g., what materials for construction are available) (Section 3 of Misunderstandings). Identifying the causal role of specific factors is bound to request different methods. To do this, CAT shamelessly borrows methods developed by others as well as methods more specific to the study of attraction. Examples:

- Applying statistical methods to long-term cultural phenomena, including phylogenies.[4]
- Developing modeling tools.[5]
- Doing cultural chains experiments with humans.[6]
- Doing cultural chains experiments with non-human animals.[7]
- Doing comparative social anthropology, searching for recurrent patterns.[8]

Still, CAT has come, in its brief history, with other general yet consequential methodological points, such as:

> Cultural phenomena can be explained causally.

This might be a truism for some, especially those who study the evolution of culture, but it is not in most of the social sciences. Especially in mainstream cultural anthropology the researcher is expected to interpret, not to causally explain. The methodological point is anchored in a particular description of culture as resulting from cultural chains, which are chains of causally related events. As a social anthropologist, Sperber has dedicated several papers to this important issue, explaining how interpretation and other ethnographic methods, in fact, relate to the scientific project of producing causal explanations.[9,10] Zooming in on the detail of cultural chains, one can track representations and describe how they are transmitted and processed in different milieu, whether in the brains or in the environment (Hutchins, while not directly associated with CAT, provides seminal examples of this type of cognitive ethnography[11]). One can also combine psychological experiments to participant observation to better understand the psychological basis of cultural diversity.[12]

More controversially for students of cultural evolution, CAT recommends:

> Do not systematically black box the mechanisms involved in cultural transmission.

Unlike the previous methodological point, this recommendation is one that many students of cultural evolution seem disinclined to follow.[13] Yet: it is inside the black box that the causes of stability and change are to be found. Empirical studies of communication and other means of cultural propagation show that cultural transmission is most often biased and is rarely replicative. This means that the method of black-boxing transmission, which has proved so fruitful in the biological case, cannot be fruitfully used for studying cultural evolution, because the black box itself contains important causes of change at the population level. Cultural stability can be achieved if the transformations that occur in transmission are not random but instead tend to be in some directions rather than others (see Section 5.3 of Misunderstandings).

When opening the black box, you also need to make sure of the following:

> Make your theories compatible with current sciences, in particular (but not only), with psychology.

Buskell concisely summarizes this point as making "psychological bets." He observes, for instance, that one such bet taken by many of the studies inspired by CAT is the theory that the mind processes information on the basis of domain specific capacities (called modules).[14] He is thus moving the debate to the right place: are the psychological assumptions sound enough and warranted by evidence, such that they can be put to use in a framework theory for culture? CAT itself is not committed to this or any other specific psychological claim, but it provides a framework within which to make them explicit and the object of scientific scrutiny.

Here are some further examples of such assumptions, and how they have been used to (help) explain specific cultural phenomena:

- Dispositions to favor genetically related individual helps to explain the recurrence, across cultures, of types of relations between the mother's brother and his sister's son.[8]
- Attentional bias toward faces with direct gaze (rather than averted gaze) helps to explain historical trends in portraiture.[15]
- Visual cognition being more sensitive to vertical and horizontal lines partly explains the orientation of strikes in writing systems.[4]
- Folk biology helps to explain the cross-cultural recurrence of some medical practices that are in fact inefficient.[6]

These psychological mechanisms have features, or signatures, related to their function and how they process information. We think that the bets taken by CAT have been very informed bets: well-grounded in up-to-date experimental psychology and cognitive theory. If some of them turn out to be wrong, then so be it: those analyses will be refuted. This shows that, if CAT remains general, it still provides a frame for case

studies that are highly falsifiable and informative (see also Section 3 of Misunderstandings). They are falsifiable in three ways: on the basis of their psychological assumptions; on their descriptions of the cultural phenomena; and the causal relation between these two (the same is true, *mutadis mutandis*, of ecological factors of attraction).

This brings us to the most constructive recommended method for gathering evidence about causal factors of cultural stability:

Describe attractors; document attraction

The reason for doing this is that attraction is the signature *in culture* of the mechanisms at work in cultural chains. CAT further says that recovering what these mechanisms are has great explanatory value, because they are the causal factors that shape cultural phenomena. To describe attractors and document attraction, the scientist has to choose the right kind of granularity for describing cultural items (Box 2 of Misunderstandings). The right level of granularity is not too coarse, otherwise you only describe memes. You fail to identify the underlying causal processes, and you can do little more than observe items that are successful are being reproduced—a tautology. So empirical work inspired by CAT considers not just portraits, but portraits with eye gaze direction; and not just writing systems, but writing systems with their ratio of vertical and horizontal lines.[4,15] In both cases, this level of description allows the researcher to investigate the causal role that aspects of human psychology play in the evolution and stability of a cultural phenomenon.

3 | CONCLUSIONS

Thinking that CAT provides a general recipe for the study of culture can, as Buskell points out, generate misunderstandings and frustration. CAT is "only" a framework theory. Still, we find it fair and fruitful to challenge CAT, as Buskell does, on its ability to generate guidance for empirical studies. CAT does need to be fleshed out with methods that are adapted to the cases studied. Also, the methods of CAT are still in development. Cultural attraction theorists have had an open (yet critical) eye on opportunities. Those given by modeling, cultural transmission experiments, and phylogenetic analyses are all high on the agenda. We wrote Misunderstandings with the hope that social scientists will join these exciting developments without being hampered by possible misunderstandings.

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