

so understood, is a notion that earns its keep because it points – via more precisely-specified “factors of attraction” – towards an understanding of the reliable recurrence of resembling cultural representations without bit-by-bit copying (Sperber, 2000). Imagine two agents, *a* and *b*, who are confronted with the same type of situation and who need to respond to it in some way. Suppose *a* produces a solution of type *S*; *b* notices *a* and also produces a solution of just the same type *S*. This could be because *b* carefully copies each element of *a*’s solution bit-by-bit. But Sperber points out that it could also be because *a* and *b* share cognitive biases in how they approach problems, or because they face similar constraints in terms of raw materials they can use, or because the problem itself has just one very obvious functional solution, or because of many such “factors of attraction” acting individually or in concert (Buskell, 2017; Scott-Phillips, Blancke, & Heintz, 2018). In using the term “super-attractor,” Singh implicitly conveys – although he does not explicitly argue for it – that whatever explains the prevalence of robust and complex cultural phenomena, it is *not* bit-by-bit copying.

There is no contradiction in combining cultural selection and (super-)attraction in just the manner Singh alludes to. Imagine one is trying to explain the prevalence of a solution *S* in a population. It could be that a single individual initially discovers *S* alone. A few others casually observe that individual – who becomes, because of this, a cultural “parent” – and their observation inspires them to produce similar solutions through the action of commonly-held cognitive processes coming into contact with similarly-constrained resources. They, too, are then observed by others, and the process iterates until *S* is dominant. Here, there are reproductive cultural lineages without bit-by-bit copying, and forms of cultural selection and cultural attraction consequently work hand-in-hand (Lewens, 2024). But although this might be how things work sometimes, one can also imagine circumstances where there are no easily identifiable cultural “parents”; instead, *S* may spread through far more diffuse transmission pathways, perhaps because agents, once again with similar cognitive and material constraints, are repeatedly exposed to a whole series of different models who have developed *S*. At the limit, one might even imagine an exogenous environmental change that leads many different individuals’ subjective “selections,” again informed by their shared constraints, to favour *S* across a population. Here, there may be no form of cultural transmission – or cultural selection – at work at all.

Singh’s evidence points squarely towards the importance of subjective goals and preferences in the explanation of cultural phenomena, and in this respect his paper is a success. However, to secure the importance of subjective (cultural) selection, one needs to show that the best way to understand the repeated re-occurrence of resembling cultural phenomena must appeal to proliferating lineages of reproducing cultural items. This requires ruling out an alternative, namely, that widely-held subjective goals and preferences give rise to the repeated re-constitution of resembling cultural representations without any clear lineage formation. I take this to be one of the lessons of cultural attraction theory: if it holds for basic attractors, it holds for super-attractors also.

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On the originality of subjective selection and the importance of payoff-biased diffusion and migration in shaping the cultural manifold

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Abstract

I suggest that, first, the broad framework of subjective selection proposed by Singh is not as different from existing research in cultural evolution as is made out, and second, that an under-discussed but important cause of cross-cultural regularities (the “cultural manifold”) is payoff-biased diffusion or migration between societies.

I appreciate Singh’s focus on the proximate psychological goals that people employ when evaluating and adopting different cultural traits. However, I would like to make two points regarding Singh’s target article, one related to the broad theory of subjective (cultural) selection and one related to the claims regarding cross-cultural universals (the “cultural manifold”).

First, while commendable, I do not see Singh’s broad framework of subjective selection as so different to many existing strands of cultural evolution research. Singh claims that “[u]nlike cultural group selection or cultural evolution through cue-biased transmission (e.g., imitating the healthy, successful, or prestigious) . . . subjective selection emphasizes subjective appeal over objective benefits.” Yet prominent theories regarding cue-biased transmission mechanisms already assume that the cues people use to adopt cultural traits are subjective. Take prestige bias, for example. In Henrich and Gil-White’s (2001) formulation, prestige bias

occurs when people copy others whom they *perceive* as being prestigious. These prestigious people may often possess adaptive (objectively or ultimately beneficial) knowledge or skills, but not necessarily. Rather, prestige is a subjective shortcut to acquiring adaptive cultural traits. Earlier models of prestige-like dynamics (Boyd & Richerson, 1985) showed that while prestige (aka “indirect”) bias is broadly adaptive, it can misfire precisely because subjective prestige does not always correlate with objective success. This leads people to copy irrelevant or maladaptive traits exhibited by prestigious individuals. Experiments confirm that people are sensitive to this correlation, moderating their use of subjective prestige cues based on whether they correlate with objective success (Brand et al., 2020) and whether that success was attained in a relevant domain to the trait being copied (Brand, Mesoudi, & Morgan, 2021).

Elsewhere, transmission chain experiments show that information that is subjectively appealing, e.g., that evokes disgust (Eriksson & Coultas, 2014), has negative valence (Bebbington et al., 2017) or concerns social interactions (Mesoudi, Whiten, & Dunbar, 2006), is preferentially recalled and transmitted. This is not necessarily the “objectively” correct or true information. In my study, made-up social information about fictional characters was transmitted better than factual but non-social information about climate change (Mesoudi et al., 2006). Models (Tanaka, Kendal, & Laland, 2009) and real-world data (de Barra, Eriksson, & Strimling, 2014) show how objectively ineffective, or even harmful, medical treatments can spread due to the biased subjective perception of their efficacy. And as Singh acknowledges (in Section 6.2. “Addressing assumptions of adaptiveness”), even in experiments which show that cultural evolution can occur without causal understanding of why a trait works (e.g. Derex et al., 2019), there is still the subjective evaluation of alternatives and selection of the best-performing cultural variant.

It is unclear to me how cultural selection could be anything other than “subjective,” except perhaps when driven by blind genetic algorithms or machine learning. The real question is when and why proximate, subjective psychological mechanisms converge or diverge from what would enhance individual inclusive fitness (or perhaps group fitness, under specific circumstances). This brings to mind Durham’s (1991) the distinction between “primary value selection,” where traits are selected based on goals derived from genetic evolution (e.g., the pursuit of food, shelter, or sex), and “secondary value selection,” where the goals are themselves derived from social learning (e.g., the pursuit of money, stamps, or video game points). I suspect Singh’s focus on subjective selection will be most useful in focusing attention on explaining where these latter, secondary, socially learned goals come from, how they themselves culturally evolve over time, and in some cases diverge from primary values.

Second, Singh argues that complex cross-cultural regularities – the “cultural manifold” – typically arise via independent convergence due to universal aspects of human psychology, which act to generate similar subjective selection pressures. While this may well be true for many of the examples he gives, especially shamanism and musical commonalities, other potential explanations for the cultural manifold should also be considered. While Singh dismisses deep/common ancestry as an alternative to independent convergence, he does not fully consider another more likely alternative: payoff-biased diffusion or migration across societies. (As an aside, this is perhaps ironic given the many quotations from Franz Boas in the

target article, who was a prominent advocate for diffusionism within anthropology, e.g. Boas, 1937) Formal models have shown that both convergence and diffusion can generate identical patterns of cross-cultural regularity (Mesoudi, 2021), while historical data show that many traits spread across societal borders via payoff-biased diffusion or migration, from agriculture (Fort, 2015) to glass-making (Macfarlane & Martin, 2002) to musical instruments (Nia et al., 2015). Payoff-biased diffusion or migration is also a key factor in the spread of complex social institutions, as seen for example in post-feudal Japan’s adoption of Western institutions related to the police force, post office, and print media (Westney, 1987) or the spread through history of institutional religions often due to their consequences for cooperation (Schulz et al., 2019; Stark, 1996). Indeed, the more complex and therefore unintuitive or difficult to learn the cultural trait, the less likely it is to be independently reconstructed (Mesoudi, 2021). So while studying the psychological mechanisms driving independent convergence is important, we should not be blind to the equally important study of cultural diffusion and migration as drivers and shapers of the complex cultural manifold.

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Cultural affordances

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Abstract

Singh emphasizes how individual-level processes, including motivation, shape cultural evolution. I suggest this approach can be enriched by considering cultural affordances – the goal-relevant opportunities and threats that a cultural variant might provide to an individual. This framework might be useful for explaining not only cultural universals but also nuances in variation between and within cultures.

Why do humans develop some cultural elements, such as religion, music, and stories, so reliably? In the target article, Singh provides an important answer: these packages of complex culture become common precisely because they appeal to humans – people might perceive them as instrumental in achieving some of their goals, or simply as enjoyable or interesting. This emphasis on individual motivations adds to previous approaches, which have typically focused on heuristics such as conformity or prestige biases.

Here, I suggest that Singh's approach resonates with the concept of *affordances* and that this approach can be useful not only for understanding cross-culturally common phenomena but also for understanding nuances in cultural variation.

Gibson (1979) proposed that the perceptual system is organized around affordances – opportunities offered by the environment to a perceiver. A chair, for example, is not seen merely as an elevated flat surface, but as something that “invites” or “affords” the

opportunity to sit. However, for someone desperate to defend himself from an intruder, a chair might instead pose the affordance of “weapon” (Ko & Neuberg, *in press*). Thus, what matters is not simply what an object *is*, but what it enables the perceiver to do.

This concept has been productively extended beyond the perception of the physical world. In social perception, people are highly attuned to characteristics in others that cue potential threats and opportunities (McArthur & Baron, 1983; Neuberg, Kenrick, & Schaller, 2010). Likewise, different environments afford distinct opportunities and threats for different individuals (Ko & Neuberg, *in press*).

Subjective selection could also be thought of as operating through the perception of *cultural affordances* – the opportunities and threats that participation in or endorsement of a cultural element afford. (Note that others have used “cultural affordances” in slightly different ways, such as to refer to the types of behavior or expression that one's culture allows.)

Singh focuses primarily on explaining cross-cultural similarities. Because people share many universal motivations, there is substantial overlap in which cultural elements are perceived as useful. However, this approach may similarly be valuable for understanding variation, both between and within cultures. Just as the perceived affordance of a chair might vary with the perceiver's goals and abilities, the same cultural variant might offer tangible benefits to some individuals but might significantly inhibit the goals of others.

By considering how goals and problems differ between societies and between individuals, we can consider how and why they might vary in the cultural affordances they perceive. To demonstrate how this approach might apply to variation, consider the example of religion.

The perception of cultural affordances likely varies as a function of features of the cultural variant as well as the goals, abilities, and vulnerabilities of the individual. By considering these factors, one might make several predictions about the cultural affordances people will perceive in religion. As reviewed in the target article, prosocial religions include strong norms that favor cooperation. Accordingly, individuals tend to promote punitive religious beliefs to the extent that they are motivated to police others' behavior and believe that religious norms effectively promote cooperation (Fitouchi et al., 2025).

Religious involvement can provide other affordances, too. In much of the world, religious commitment is more strongly correlated with attitudes towards family and sexuality than with endorsement of cooperative values (Moon, 2021). Given that many world religions emphasize sexual morality, one possibility is that those who benefit from such norms will find religious beliefs to be more plausible or meaningful. This might explain patterns in religiosity across the lifespan: young adults often become somewhat less religious, while becoming a parent tends to increase religiosity (Blekesaune & Skirbekk, 2023). In such cases, it is not that religious beliefs change, but that religion provides different affordances for people at different life stages.

One implication of this approach is that the underpinnings of a given cultural variant might differ across time and place. The perception of cultural affordances likely relies not only on properties of the cultural variant but also on the ability of the perceiver to gain benefits from it. Thus, it is not necessarily the case that the