Open Peer Commentary

Social tinkering is not *motivationally* myopic

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Abstract

Chater and Christiansen argue that social tinkering is intentionally myopic. I agree. But social tinkering is not *motivationally* myopic. Evolved motivational systems impact which problems feel urgent and which solutions feel satisfying. These systems are functionally specialized yet often input-flexible. I argue that integrating motivational structure into the social tinkering framework strengthens it.

Chater and Christiansen build their account on Ferguson's observation that people "arrive at ends which even their imagination could not anticipate." This captures intentional myopia (i.e., the absence of foresight), and it is the right foundation for their framework. But Ferguson's full sentence deserves closer attention: people tinker "in following the present sense of their minds, in striving to remove inconveniencies, or to gain apparent and contiguous advantages." I argue that this other half of Ferguson's insight (i.e., what drives the "present sense" of tinkerers' minds) is equally important for understanding cultural complexity. This is the focus of my commentary.

I endorse the central claim of the social tinkering account: cultural complexity emerges from local, directed innovations in social coordination, without grand design. But the authors seem to implicitly mix two forms of myopia that, I believe, should be kept apart. *Intentional* myopia is the absence of planning. *Motivational* myopia is the absence of systematic orientation in what people tinker with and which solutions they prefer. I agree that social tinkering is intentionally myopic. Yet, I argue that it is not motivationally myopic.

Humans possess evolved motivational systems, each *functionally specialized* to orient cognition and behavior toward problems that were recurrent in our evolutionary past: harm avoidance, hunger, fairness, cooperation, mate selection, offspring protection, status, exploration, and many others (Del Giudice, 2023; Dubourg, Chambon, & Baumard, 2025; Kenrick et al., 2010; Tooby et al., 2008). These systems determine which problems feel urgent and which solutions feel satisfying. They do not prescribe specific cultural rules. But they powerfully constrain the space of innovations that humans generate, adopt, or support.

This constraint is what explains a striking regularity that the social tinkering account leaves unexplained. Across cultures, humans converge on structurally similar solutions to structurally similar problems: codes against harm and theft (Curry, Mullins, & Whitehouse, 2019), institutions regulating reciprocity or punishment (Lie-Panis et al, 2024), norms protecting children (Trivers, 1972), arrangements managing status hierarchies (Garfield, von Rueden, & Hagen, 2019). If tinkering were motivationally unstructured, this convergence would be mysterious. But it is expected if the tinkering process is channeled by shared motivational systems that make certain problems (e.g., exchanges, parenthood) salient and certain solutions (e.g., *fair* exchanges, *protected* children) attractive. Social tinkering, in other words, is not tinkering in the dark.

Take the authors' central example of food sharing. They describe how local interactions generate fairness rules through precedent-setting and present this convergence as more or less incidental. But natural selection has engineered mechanisms that map cues of inequity onto aversive motivational states, so that people are reliably bothered by unfair divisions and reliably drawn to solutions that restore equity (Baumard, André, & Sperber, 2013). The convergence of fairness norms is not solely the outcome of local tinkering; it is the predictable output of *motivationally channeled* tinkering.

This brings me to the authors' discussion of evolutionary psychology. Chater and Christiansen argue that evolved domain-specific modules would be too rigid for modern cultural diversity. A cheater detection module "adapted for detecting cheaters among our hunter-gatherer ancestors," they write, could not generalize to novel social exchanges without

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extensive world knowledge, which "goes against the closed, domain-specific nature of the proposed evolved modules."

This objection conflates two claims that should be distinguished. The first is that motivational systems are *functionally specialized*: each is designed to prioritize a particular class of adaptive problems. The second is that these systems are *stimulus-bound*: restricted to the ancestral inputs that shaped them. The first does not entail the second.

The key insight is that motivational systems vary in the degree to which they are *input-bound* versus *input-flexible*. Some motivational responses are relatively *stimulus-bound*: fear of snakes and spiders is triggered by phylogenetically recurrent cues (Öhman & Mineka, 2001).

But other motivations are far more open-ended. Harm avoidance, for instance, is not restricted to ancestral threats (Gross & Canteras, 2012). This openness is itself adaptive: because sources of bodily harm vary across environments, it was more fitness-enhancing to build a motivational system that learns what is dangerous locally than one restricted to a fixed list of ancestral hazards. Humans readily learn that guns, cars, and electrical outlets are dangerous because the system is organized around bodily self-protection as a motivation, not around a catalogue of ancestral stimuli (Blanchette, 2006).

Even predator avoidance is not fully stimulus-bound: it is calibrated by the formidability imbalance between the agent and the threat. Larger, better-armed threats elicit stronger fear, even when they are evolutionarily novel, as demonstrated by the reliable activation of fear systems by fictional monsters (Dubourg & Scrivner, 2026).

And fairness motivations extend to salary negotiations and carbon taxes (Boon-Falleur et al., 2022), because they track the structure of cooperative interactions (who contributed what, who received what), not a fixed set of ancestral scenarios.

The central claim of this commentary is that evolved motivational ends can be instantiated through contextual means, including evolutionary-novel technologies (Baumard & André, 2025; Dubourg, Chambon, & Baumard, 2025). This is what gives human behavior both functional specificity and flexibility.

Rather than undermining the social tinkering framework, this motivational framework strengthens it. I agree that cultural complexity is not designed from the top down. But recognizing that tinkering is channeled by evolved motivational structure explains why social tinkering converges on recognizable cultural forms rather than producing arbitrary ones (Dubourg, Fitouchi, & Baumard, 2022). Social tinkering is the cumulative process by which culturally evolving rules, symbols, and institutions come to reliably engage pre-existing motivational mechanisms. Evolved motivations do not dictate the specific rules that emerge, but they constrain the problem space within which humans find it worth tinkering.

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