The dark side of thinking through other minds
(BBS commentary on Veissière, Constant, Ramstead, Friston, & Kirmayer, 2019)

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Abstract
We show that TTOM has a lot to offer for the study of the evolution of cultures, but that this also brings to the fore the dark implications of TTOM, unexposed in Veissière et al. Those implications lead us to move beyond meme-centered or an organism-centered concepts of fitness based on free energy minimization, towards a social systems-centered view.

TTOM and the underlying FEP framework allow us to revise and refine, not only theory of mind accounts, but also theories of the evolution of culture, most notably memetics. At least on three levels, TTOM/FEP provides important correctives to reinvigorate this field. In doing this, Veissière et al.'s account explains how the "imagined communities" we live in (Anderson, 1983/2006), come to be. In this commentary, we specifically consider the darker implications of this, as these remain unexplored in the target article.

First, the analysis of Veissière et al. shows that the concept of memes as independent units of cultural information is rather deceptive. A FEP-based account of culture highlights that ideas or hidden causes are not insular units but parts of hierarchically and laterally structured belief networks, or narratives. Such networks also include so-called auxiliary hypotheses that can take the blame when other, high precision beliefs are under threat of being disproven. The networks even include socially-expected ways of sampling evidence (expected precision or epistemic value of different sources). These observations suggest that cultural beliefs are socially constructed and *self-sustaining*. Thus, fabricated beliefs such as conspiracy theories can spread easily and take root and (Gershman, 2018).

Second, Veissière et al. rightly call attention to the importance of embodied cultural practices (rather than just 'ideas', as in memetics) in the evolution of culture. Indeed, practices have primacy in steering not just behavior but thought. This "practice before ideology" principle can be seen in enculturation through religious rituals. Heylighen et al. (2018) observe that: "the undeniable act of praying to God can only be safeguarded from cognitive dissonance by denying any doubts you may have about the existence of God". In FEP terms, the irrefutable perceptual evidence created by the active practice can only be explained away by adopting the ideological 'hidden causes'. In rituals (as in

many cultural practices), actions are triggered by cultural markers in the environment —I do it because others like me do/did it— circumventing explicit thought but at times also the actual interests of the participant. Here, practices become a tool for control of individual action by the social system (conformity pressure).

Third, TTOM/FEP may provide a unified selection criterion ('fitness') for the evolution of cultures. Culture constrains the behavioral paths for its individual members, generally because its practices and narratives have shown to be efficient free energy reduction vehicles, for "agents like you". Ideas and practices that reduce free energy more efficiently tend to spread and become dominant in a culture. These ideas could concern hidden causes of the environment and the challenges it provides (e.g. a god causing thunderstorms) but also hidden causes of the behavior of other individuals in your community. This gives cultural ideas a circular, self-reinforcing character. For example, the cultural expectation that sinning requires guilt and atonement reduces the free energy of the harmed party, but guilt also becomes a hidden cause efficiently explaining away someone's behavior in the eyes of others belonging to the culture. However, note that the success of these expectations depends on the conservative perpetuation of the culture, and the exclusion of 'dissident' behavior.

Similarly, ideologies like religion or nationalism, as interconnected sets of hidden causes and shared expectations and practices, are an efficient means of free energy minimization. As Atran & Ginges remark (2012), most religions have at their core a limited set of principles (expectations) that they consider 'sacred'. In essence, to be sacred implies unconditionality. Indeed, expectations that are independent of contextual parameters provide a simple, dependable (high precision) foundation for how to act in and explain the (social) world. It makes these principles into very powerful, socially fulfilled hidden causes. The same free energy minimization logic explains why strictly patterned (hence predictable) religious rituals are especially successful at important transition points in life (such as the transition to adulthood), characterized by higher uncertainty about how one should act. In the same vein, Hogg (2014) reports evidence that individuals that experience high personal uncertainty (e.g. adolescents going through identity problems tend to strongly identify with a group and (radical) ideology to easily resolve their self-uncertainty. Examples can even be found of cultures systematically plunging their members into uncertainty to increase allegiance. Thus, cultures and their 'sacred' rules often actually harm their members, hence outright increasing their free energy. Think for example of rules inducing genital mutilation, suicide terrorism, honor killings, or more mundanely, chronic stress due to a ruthless, sacred rule of productivity.

The above examples show that a meme-centric concept of fitness will not do (Ramsey & De Block, 2015), but, more interestingly, they also suggest that a purely organism-centric concept of fitness (organism-centered free energy minimization) is unsatisfactory to explain the power of cultures on their members. Indeed, internalized and environmentally anchored cultural expectations (behavioral 'rules') often take on a life of their own, not necessarily benefitting the individual that follows them, but rather maintaining the very system of social ideas and practices they are part of. Luhmann (1986) has argued that social systems should be seen as autopoietic, organism-like agents that, via their human constituents, actively counteract any deviation from their

organization, so as to ensure the continuation and self-regeneration of the system (Heylighen et al., 2018). Hence, these social systems seem to also reduce their free energy, consistent with a multiscale formulation of the FEP (Ramstead, Badcock, & Friston, 2018). On the one hand, the relation between individual and social system is one of symbiosis or mutual benefit, with social systems providing means for reducing free energy to the individual through coordination of action and prevention of conflicts. On the other hand, social systems, via TTOM mechanisms, can also veer into dogmatism, radicalism and mind control that suppresses individual expression, creativity and well-being (Heylighen et al., 2018). We believe that the account of Veissière et al. should also provide insight into this dark side of cultural phenomena.

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