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Improving the Perceptual Model of Intergroup Relations With an Evolutionary Framework

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Y. Jenny Xiao, Géraldine Coppin, and Jay J. Van Bavel (this issue) propose the perceptual model of intergroup relations (PMIR), which describes the association between social groups, perception, and intergroup relations. The model integrates findings from a diverse set of topics related to perception and group processes. Integrating widely different phenomena under a single model has its benefits, and we acknowledge the very comprehensive and well-written article that these authors have produced. However, in this commentary we highlight two main limitations that should be addressed if this model is to be generative and lead to further discovery: (a) The PMIR does not specify why the associations described by the model should exist, and (b) the PMIR in its current form is too vague and descriptive, sacrificing prediction and precision to account for all possible findings. We believe that adopting an evolutionary framework is a promising solution to these issues. Next we discuss the model's shortcomings, illustrate how an evolutionary framework could address the shortcomings, and give examples of research on perception and group processes that is based on evolutionary reasoning.

Like most models in psychology, the PMIR offers proximal explanations for a set of phenomena. These explanations specify the mechanisms by which behavior occurs and are an essential part of psychological science. However, the proximal mechanisms must themselves also be accounted for if as scientists we wish to fully explain human behavior. This can be achieved by developing ultimate explanations for the psychological processes of interest. The PMIR as described by Xiao et al. (this issue) proposes mechanisms by which perception and group processes are associated but does not specify *why these associations should exist*. Proposing an ultimate explanation for the PMIR would benefit the model by offering a more comprehensive account of the phenomena and by increasing the means by which it could be tested.

Another way of raising this point is by asking the question, *Why should* perception and social identity interact in some way? The evolutionary approach provides a more distal explanation for the design of the human mind and more local sub-theories within evolutionary psychology can generate precise predictions.

It is important to note that Xiao et al. (this issue) do hint at an ultimate explanation for the effects in the PMIR: They highlight top-down effects of goals on perception while arguing that

social identity is a fundamental motive. Thus, the effects of the PMIR would be due to (a) the fact that goals can influence perception and (b) the fundamental nature of social identity goals.

However, the fundamental nature of social identity goals does not guarantee that perception will be affected by them. Perception could be influenced by other nonsocial motives while being immune to social goals, even though the latter are fundamental. Thus, as of yet the effects in the PMIR do not have an adequate ultimate explanation. To be sure, the lack of an ultimate explanation does not preclude the development of proximal models, nor does it question the findings reviewed by Xiao et al. However, looking into the ultimate explanations for these effects is an important research question in and of itself and can lead to more specific predictions—the lack of which we discuss next.

The PMIR can account for phenomena as different as the effect of bitterness on prosocial behavior (Eskine, Kacirik, & Prinz, 2011) and cultural differences in pain tolerance (Nayak, Shiflett, Eshun, & Levine, 2000).

Although the ability to generalize to many phenomena is an integral feature of any theory, the PMIR can account for every effect of perception on group processes (and vice versa), which renders it almost unfalsifiable. In other words, the model in its current form is mostly descriptive, flexible enough to account for any finding but unable to generate precise predictions.

One cause of this problem is that the model is underspecified in terms of what it is trying to accomplish and how exactly perception is related to intergroup relations (beyond box-and-arrow diagrams). What does it mean exactly to say that “intergroup relations are grounded in perception” (Xiao et al., this issue, p. 255)? Is it simply that intergroup relations may *change* perception? Is it that intergroup relations *have no meaning* without perception? To say that intergroup relations are “grounded” in perception suggests the latter, that intergroup relations are meaningless without perceptual input, that the way we understand intergroup relations is not representational but instead uses perceptual systems to accomplish this. If this is the claim, this is a radical statement, a bold and provocative claim, but one ultimately unsupported by the specific studies cited in support of the model. But immediately after the claim that intergroup relations are grounded, Xiao et al. suggest that intergroup dynamics “shape perception.” This is a much different claim, one that suggests it is just a matter of one process

influencing or moderating another. If this is the purpose of the model, then the research presented in support of the model does an adequate job—but this also suggests a different research program than one designed to show that perceptual processes are fundamentally necessary for intergroup relations. It would benefit the model and the general research program for the authors to be more precise about nature of “grounding,” a problem that is not unique to this work but instead appears to be widespread in work on “embodiment” (see, e.g., Wilson & Golonka, 2013).

A second, related cause of this problem is the lack of evolutionary theory as a means of constraining all the possible relations in the PMIR. To illustrate this, consider the finding that loud noises are perceived as more pleasant when they are attributed to one’s religious group (Shankar et al., 2013). The PMIR accounts for this result as an effect of the social group on auditory perception. However, the model is general enough to also account for the opposite effect, that is, loud noises are *less* pleasant when attributed to one’s religious group. This is true for all other components of the model and for all of the effects reviewed by Xiao et al. (this issue). The consequence of this is that few effects, if any, would falsify the PMIR.

Perhaps the only findings that would cast doubt on the model would be null effects of perception on group processes (or vice versa). However, it is not clear which effects would accomplish this. In fact, Xiao et al. (this issue) increase the model’s flexibility by stating that it characterizes “how social identity *can* [emphasis added] alter perception” and “perceptual processes *can* [emphasis added] mediate intergroup relations” (p. 257). This implies that effects of perception on group processes (and vice versa) are not strictly required by the model; perception can affect intergroup relations but may not do so under all circumstances. Defining whether there are circumstances under which perception should not be affected by group processes (and vice versa) and which circumstances these are would be a first step in improving the model. The model as currently described does not specify these circumstances.

Adopting an evolutionary framework provides a unique opportunity to develop ultimate explanations and to derive more specific predictions concerning the proximal mechanisms of the PMIR’s effects. This is due to the unconditionally supported theoretical foundation provided by evolutionary biology: Humans were shaped by natural selection (Cosmides & Tooby, 1987).

Bearing this assumption, researchers first devise which recurrent evolutionary problems our ancestors faced during evolutionary history. After a task analysis of one of these evolutionary problems, hypotheses can then be generated to test whether the human mind shows evidence of functional design in solving that problem. To illustrate this process and how it addresses the issues discussed, we review work on two adaptive problems involving group processes and perception: Deciding whether to escalate or de-escalate conflict and avoiding infectious diseases from outgroups.

Fessler and colleagues (e.g., Fessler & Holbrook, 2013a) developed a research program aimed at examining how individuals make the decision to escalate or de-escalate conflicts. As with most social species, individual and coalitional conflict was a recurrent problem throughout our evolutionary history.

Given the large potential effects on reproductive success tied to making decisions about engaging in conflict, there was likely a strong selective pressure for a mechanism that could effectively perform those cognitive functions. Fessler and colleagues have argued that this mechanism would have to (a) calculate the chances of winning (i.e., the chances of having more gains than losses), then (b) quickly alter motivational states so that the decision given previous calculations would be followed through. These selective pressures constitute the ultimate explanation for the decision-making mechanism.

Using their ultimate explanation as a guide, Fessler and colleagues hypothesized which design features the mechanism should have. To calculate the odds of winning a conflict, the mechanism should be sensitive to cues that indicate who would win the conflict, such as relative formidability of the individual and the opponent, features of the environment that could give an advantage to one of the parties (e.g., a weapon), and personal characteristics that indicate the opponent is willing to fight (e.g., risk-taking behavior). Having determined the odds, the mechanism must quickly and efficiently motivate the individual to follow through with the optimal course of action. Because the perception of the opponent’s formidability (i.e., physical size and strength) was a strong predictor of fight outcomes throughout evolutionary history, Fessler and colleagues proposed that the perception of the opponent’s size and strength would act as an efficient motivator of subsequent behavior, thus increasing the speed of the decision.

These design features of the mechanism inform what phenomena researchers should expect to observe: If cues indicate that the individual will lose the fight, he or she should perceive the opponent as physically larger, a perceptual bias that would serve to motivate the individual to de-escalate the conflict. Fessler and colleagues tested this by examining whether relevant cues would bias perceptions of the opponent’s physical size. They found that cues that indicated that the participants would lose the fight (i.e., incur more costs than gains) made them perceive an outgroup man as larger. For example, participants who believed the opponent was part of a coalition (Fessler, Holbrook, & Gervais, 2014) and participants bound to a chair (Fessler & Holbrook, 2013a) perceived the opponent as physically larger. In contrast, cues indicating that participants would win the conflict (i.e., reap more gains than costs) made them perceive the outgroup male as physically smaller. For instance, participants accompanied by their ingroup members (Fessler & Holbrook, 2013b) and participants who were physically strong (Fessler et al., 2014) perceived the opponent to be less formidable.

By first thinking of the adaptive problem individuals had to solve (i.e., how to integrate cues to make accurate decisions about conflict escalation), Fessler and colleagues were able to derive specific hypotheses about the influence of the social context on perception. As a second example, work on how individuals avoid contracting infectious diseases illustrates how an evolutionary approach can generate hypotheses about the effects of perception on intergroup relations.

Infectious diseases were a source of considerable fitness costs throughout our evolutionary history. Many of these diseases spread through contact with contaminated objects (e.g., rotting meat, feces). However, interpersonal contact also could

transmit pathogens between individuals (Kurzban & Leary, 2001). Isolated outgroups, in particular, were more likely to carry pathogens for which people did not have immunity. Therefore, pathogen avoidance is proposed to be one of the functions of (i.e., ultimate explanations for) mechanisms that lead individuals to avoid outgroups (e.g., prejudice and discrimination).

Furthermore, Schaller, Park, and Faulkner (2003) pointed out that individuals vary in their avoidance of outgroup members. They reasoned that this variability is due to the variability in the degree to which avoidance is functional across situations and for different people. If contacting outgroups is more costly under certain circumstances, then the mechanism should track those circumstances and motivate the individual to avoid outgroups when under those circumstances. They proposed that vulnerability to diseases is an important variable the mechanism should track, such that when vulnerable to diseases, the individual should vigorously avoid outgroups. Thus, they add to the ultimate explanation for outgroup-avoidance mechanisms by specifying a moderator of how adaptive avoidance is.

Considering the ultimate explanation leads to a specific prediction of how the mechanism should function: Individuals who perceive themselves to be highly vulnerable to diseases should have more negative attitudes of groups they see as -foreign. Faulkner, Schaller, Park, and Duncan (2004) thus found that individuals high on a self-report measure of perceived vulnerability to disease or who had seen disgusting pictures were more xenophobic toward citizens from countries rated as foreign (e.g., Nigeria, Mongolia) than those from countries not seen as foreign (e.g., Scotland, Taiwan).

Similarly, Cunningham, Forestell, and Dickter (2013) tested the prediction using a perceptual manipulation of perceived vulnerability to diseases: a disgust induction through exposure to unpleasant odors. As predicted, they found that those who smelled a disgusting odor had more negative implicit and explicit attitudes toward gay men and lesbians. This illustrates how theories of an ultimate explanation for prejudice and discrimination generated specific hypotheses on how perception can influence intergroup relations.

These examples show how adopting an evolutionary framework offers ultimate explanations, which in turn generate specific hypotheses concerning the proximal mechanisms of human behavior. The specificity of these hypotheses yields models that are not just descriptive but provide precise, falsifiable predictions. As a measure of the benefits of an evolutionary

foundation, a wide (and increasing) range of phenomena across different fields have been understood under this umbrella (Cosmides & Tooby, 2013). This has led to a deeper understanding of how the mind functions and to the discovery of psychological phenomena that would likely not have been uncovered otherwise. We hope that researchers use this strategy to increase the explanatory breadth and falsifiability of theories on perception and group processes.

References

- Cosmides, L., & Tooby, J. (1987). From evolution to behavior: Evolutionary psychology as the missing link. In J. Dupre (Ed.), *The latest on the best: Essays on evolution and optimality* (pp. 277–306). Cambridge, MA: MIT Press.
- Cosmides, L., & Tooby, J. (2013). Evolutionary psychology: New perspectives on cognition and motivation. *Annual Review of Psychology*, *64*, 201–229.
- Cunningham, E., Forestell, C. A., & Dickter, C. L. (2013). Induced disgust affects implicit and explicit responses toward gay men and lesbians. *European Journal of Social Psychology*, *43*(5), 362–369.
- Eskine, K. J., Kacirik, N. A., & Prinz, J. J. (2011). A bad taste in the mouth: Gustatory disgust influences moral judgment. *Psychological Science*, *22*(3), 295–299. <http://dx.doi.org/10.1177/0956797611398497>
- Faulkner, J., Schaller, M., Park, J. H., & Duncan, L. A. (2004). Evolved disease-avoidance mechanisms and contemporary xenophobic attitudes. *Group Processes Intergroup Relations*, *7*(4), 333–353.
- Fessler, D. M., & Holbrook, C. (2013a). Bound to lose: Physical incapacitation increases the conceptualized size of an antagonist in men. *PLoS One*, *8*(8), e71306.
- Fessler, D. M., & Holbrook, C. (2013b). Friends shrink foes: The presence of comrades decreases the envisioned physical formidability of an opponent. *Psychological Science*, *24*(5), 797–802.
- Fessler, D. M., Holbrook, C., & Gervais, M. M. (2014). Men's physical strength moderates conceptualizations of prospective foes in two disparate societies. *Human Nature*, *25*(3), 393–409.
- Kurzban, R., & Leary, M. R. (2001). Evolutionary origins of stigmatization: The functions of social exclusion. *Psychological Bulletin*, *127*(2), 187–208.
- Nayak, S., Shiflett, S. C., Eshun, S., & Levine, F. M. (2000). Culture and gender effects in pain beliefs and the prediction of pain tolerance. *Cross-Cultural Research*, *34*(2), 135–151.
- Schaller, M., Park, J., & Faulkner, J. (2003). Prehistoric dangers and contemporary prejudices. *European Review of Social Psychology*, *14*(1), 105–137.
- Shankar, S., Stevenson, C., Pandey, K., Tewari, S., Hopkins, N. P., & Reicher, S. D. (2013). A calming cacophony: Social identity can shape the experience of loud noise. *Journal of Environmental Psychology*, *36*, 87–95.
- Wilson, A. D., & Golonka, S. (2013). Embodied cognition is not what you think it is. *Frontiers in Psychology*, *4*, 1–13. <http://dx.doi.org/10.3389/fpsyg.2013.00058>