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An evolutionary threat-management approach to prejudices

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The article provides an overview of key insights that have emerged from an evolutionary approach to the psychology of prejudice. Within this framework, prejudices and related phenomena are viewed as products of adaptations designed by natural selection to manage fitness-relevant threats and opportunities faced by ancestral populations. This framework has generated many novel, nuanced, and empirically supported predictions regarding (1) the specific contents of prejudices, (2) the specific categories of people who are likely to elicit these prejudices, and (3) the specific contexts within which these prejudices are either more, or less, likely to be evoked.

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Psychological research on prejudice has traditionally investigated how proximal mechanisms — individuals' goals, emotions and knowledge structures — shape the attitudes and actions directed at different categories of people. In recent years, researchers have coupled this study of proximal explanations to a careful consideration of *ultimate* explanations, which focus on evolutionary processes operating on ancestral populations. From this perspective, contemporary prejudices are typically viewed as outcomes of psychological adaptations 'designed' by natural selection to manage threats and opportunities that had implications for reproductive fitness within the ecologies that characterized much of human (and pre-human) evolutionary history. This threat-management and opportunity-management approach reveals important nuances in previously accepted findings and generates a host of novel predictions, many of which have been empirically supported [1,2].

Prejudices as products of threat-management mechanisms

For our ancestors, defense against predators and attainment of valued resources posed recurrent problems. Cooperating with others helped solve those problems, and individuals inclined toward cooperation gained tangible benefits (e.g., nutrition, longevity) that translated into reproductive advantages relative to those inclined toward solitary, independent action. Across many generations of differential reproductive success, humans came to be characterized by an inclination toward sociality [3–5]. Sociality comes with costs, however. Proximity to others increases one's vulnerability to interpersonal violence, theft, and infectious disease. Interdependence makes cooperators susceptible to free-riding and other forms of cheating. These threats imposed selection pressures that shaped the evolution of social cognition. Individuals who more successfully identified those who posed fitness-relevant threats, and responded in ways that minimized those threats, were more likely to survive and reproduce. Therefore, as a companion to evolved mechanisms for sociality, there would also have evolved affordance-management systems [6–9] comprising psychological mechanisms that facilitated learning of cues connoting specific forms of threat, use of these cues to identify conspecifics who potentially posed specific forms of threat, and cue-based affective, cognitive and behavioral responses that — within ancestral ecologies — mitigated specific forms of threat. Contemporary prejudices, stereotypes, and acts of behavioral discrimination are consequences of these mechanisms.

Functionally different threats imply psychologically different prejudices

Whereas prejudice is often defined simply in terms of its generally negative evaluative flavor, the threat-management approach implies that different prejudices come in different affective flavors. This is because different psychological responses would have been required to successfully mitigate different threats.

Escape may be useful for managing the threat posed by the rapid approach of an angry man, but is unlikely to be an effective response to someone cheating in an exchange of resources. That threat might be more effectively mitigated by approach and confrontation. And neither of these responses is likely to completely mitigate the threat of pathogen infection posed by people already infected. Indeed, different threats evoke different behavioral reactions, and the emotional responses facilitating these behaviors show a similar functional specificity: fear facilitates escape, anger facilitates approach and

confrontation, and disgust facilitates not only avoidance but often also moral condemnation and the enduring exclusion of offending individuals from group activities. Thus, to the extent that different groups of people are perceived to pose different kinds of threats, they might be expected to elicit different prejudices and distinct discriminatory responses. They do [10,11]. More broadly, this body of research suggests that the psychology of prejudice might best be understood as the psychology of prejudice*s*, plural.

Threat-detection mechanisms produce prejudices against people who pose no actual threat

People rarely have direct perceptual access to others' aggressive, deceptive, or free-riding intentions, or to the pathogens lurking within their bodies. Consequently, perceivers use cues (e.g., physical appearance, behavior) to infer the threats potentially afforded by others. Cues that were diagnostic of threat in ancestral ecologies may be less diagnostic in contemporary contexts, however, and even the most diagnostic cues are fallible [2,8,12]. Social perceivers thus inevitably make inference errors. The inference process is calibrated to minimize the likelihood of making errors associated with high fitness costs, with the consequence that it produces many other errors instead [13,14]. Just as smoke detectors are designed to be highly sensitive to any hint of smoke particles (so as to avoid missing actual fires), human threat detection mechanisms are designed to be highly sensitive to even imperfect cues to threat (so as to avoid missing evidence of actual threat).

This means that, like smoke detectors, people generate many false alarms, responding to many benign individuals as though they posed actual threats. Outgroup men are intuitively perceived to be dangerous and so are often targets of a fear-based prejudice [8,15–18]. Objectively healthy individuals with anomalous appearances are intuitively appraised as potentially contagious and so often elicit a disgust-based prejudice [19]. Because threat-management systems operate on the heuristic of 'better safe than sorry,' people discriminate against those who may, in fact, pose no threat at all.

Prejudices are elicited especially when contextual cues connote vulnerability to threat

Threat-management responses are costly, both in terms of energy expended and opportunities missed. In ancestral populations, the fitness benefits of threat-mitigating responses were most likely to outweigh these costs when perceivers were most vulnerable to the threat. Threat-management systems thus evolved to be functionally flexible, producing prejudicial responses most strongly in the context of additional information connoting to perceivers that they are vulnerable to the relevant threat [2,20••].

When cues connote vulnerability to physical harm, people show stronger tendencies to assume ambiguous individuals are members of potentially dangerous outgroups [21], to misperceive their own proximity to potentially dangerous outgroups [15], and to misperceive outgroup members as angry [16,17]. Vulnerability-connoting cues also increase the activation of threat-specific stereotypes into working memory. For example, non-Black North Americans in a dark (rather than well-lit) room showed especially strong activation of stereotypes linking Black men to specific traits such as 'hostile' and 'criminal' [18].

A conceptually analogous functional flexibility is evident in prejudicial responses to individuals possessing features that cue the threat of infection (e.g., individuals with blemished or asymmetrical faces, who are obese, or who belong to subjectively foreign outgroups [19]). These prejudices are exaggerated when contextual cues connote that perceivers are themselves more vulnerable to infection [22–29]. This functional flexibility is also observed in prejudices predicated upon the threat of resource scarcity. Under conditions connoting economic vulnerability, people are more likely to perceive racially ambiguous persons as outgroup members and show heightened prejudices against groups stereotypically viewed as strong economic competitors [30•,31,32].

Prejudices differ depending on sex of targets and sex of perceivers

Because coalitional group memberships were so essential to threat-management in ancestral ecologies, people continue to be extraordinarily sensitive to coalitional boundaries. Indeed, unambiguous information about coalitional memberships tends to psychologically trump more indirect cues to group membership, including race [33,34]. Because men were historically more likely than women to participate in violent conflicts between coalitional groups, two implications follow: First, people are likely to be especially sensitive to the threat afforded by outgroup men (compared to outgroup women). Support for this implication is found in evidence that fearful responses to outgroup men (relative to outgroup women) are especially difficult to unlearn [35], and that vulnerability-connoting contexts lead non-Black people to erroneously perceive anger in the faces of Black men but not in the faces of Black women [17]. Second, the prejudices expressed by men (compared to women) may be especially sensitive to contextual cues connoting vulnerability to physical attack. Some evidence supports this hypothesis, too [36,37]. Moreover, men who are especially focused on coalitional issues are also especially prejudiced against outgroup men [37].

This does not mean that women are not prejudiced against outgroup men. They are, but their prejudices seem to be based somewhat less on perceived threat of coalitional violence and more on the need to manage threats to mating autonomy [38•].