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The role of negativity bias in political judgment: A cultural neuroscience perspective

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Abstract: Hibbing et al. provide a comprehensive overview of how being susceptible to heightened sensitivity to threat may lead to conservative ideologies. Yet, an emerging literature in social and cultural neuroscience shows the importance of genetic and cultural factors on negativity biases. Promising avenues for future investigation may include examining the bidirectional relationship of conservatism across multiple levels of analysis.

Contrary to the notion that political decision making relies mainly on rational thoughts, Hibbing et al. provide substantive evidence indicating that negativity bias is a key dimension underlying political ideology across cultures. Conservatives demonstrate a stronger preference for processing negative information compared to liberals. Here, we agree that the rational view of the political mind is too narrow, and that an affective dimension, like negativity bias, should be taken into consideration to better understand mechanisms defining political judgment. Nonetheless, for negativity bias to be used as a predictive factor for political attitudes, we argue that the authors should also consider the heterogenetic nature of negativity bias. Finally, the authors limited their levels of analyses to physiological and psychological levels. Here, we argue that extending their scope to include genetic and cultural levels would offer a more comprehensive picture of the political mind.

Limitations of the rational view of the political mind. Research has shown contradicting evidence about the popular belief that political judgment mainly concerns high-level, deliberative cognitive processes. Hibbing et al. cite many priming studies showing political judgment being influenced by seemingly irrelevant environmental stimuli, such as a messy room, disgusting odor, uncomfortable chair, church, and happy faces. Consistent with this line of research, recent studies have shown that perceived attributes of political candidates based solely on candidates' facial appearance can predict voting behaviors in both simulated and actual elections (Chiao et al. 2008; Little et al. 2007; Todorov et al. 2005). In our study (Chiao et al. 2008), for example, participants were asked to judge facial pictures taken from actual congressional candidates in terms of several attributes. We found that both perceived competence and dominance

predicted actual House of Representative election outcomes. Altogether, evidence consistently shows affective heuristics in political decision-making.

The heterogenetic nature of negativity bias. Hibbing et al. summarize psychological and physiological evidence showing higher negativity bias among conservatives compared with liberals. When encountering negative stimuli, conservatives are more attentive, react with stronger activity in the amygdala, have an enhanced skin conductance response, frown more, and show a stronger startle blink. Yet, this bias among conservatives does not apply to every type of negativity. In fact, the authors acknowledge “the messiness” of politics—that there are some negative situations in which liberals demonstrate greater bias compared with conservatives, such as income inequality, gun accidents, pollution, and so forth. Moreover, liberals are found to be more empathetic than conservatives (Hirsh et al. 2010), which may contradict the notion that liberals are less sensitive to aversive situations, such as the pain and suffering of others. Consistent with this idea, we previously conducted an fMRI study (Chiao et al. 2009) to investigate empathy in relation to social dominance orientation (SDO; Pratto et al. 1994), a construct reflecting social hierarchy (as opposed to egalitarian) preference and associating closely with conservative ideology. Participants were asked to view pictures of others in pain and to report how empathetic they felt toward those people. We found that high-SDO participants showed less activity in the pain matrix, including anterior cingulate cortex and anterior insula, when empathizing with others’ pain. Although consistent with the view that conservatives tend to be less empathic than liberals, our results somewhat contradict the negativity bias argument. Specifically, in our study, high SDO participants, who had hierarchical ideologies closer to conservative, showed less bias under a negative situation (i.e., viewing others’ pain). Hence, we suggest that negative bias phenomena are not homogenous; rather negative bias seems to be domain-specific. Next steps for political scientists, then, are not only identifying the domains that may be more sensitive to liberals than conservatives (and vice versa), but also finding factors that determine such domains (e.g., tangibility of topics as mentioned by the authors).

Genes, culture, and their interaction. The authors did not narrow their levels of analyses to genetics, nor broaden them to culture. However, understanding both genetic and cultural contributions to the political mind may prove fruitful. As for genetics, although the influence of specific genes on political judgment may be small, the association between genes and negativity bias is well documented, particularly in the case of SLC6A4 gene in the serotonin-transporter-linked polymorphic region (5-HTTLPR) (Canli & Lesch 2007; Hariri et al. 2002).

Genetic studies show a relationship between 5-HTTLPR genotype and negativity bias, leading to heightened sensitivity to social cues, in which S-allele carriers of the short (S) allele variant of the polymorphism are found to be more sensitive to social cues than long (L) carriers. S-allele carriers, for example, show higher heart-rate and blood-pressure reactivity than L-allele carriers when giving a speech to negative audiences (Way & Taylor 2011). Additionally, rhesus macaques, *Macaca mulatta*, with one S-allele (SL) show larger pupil diameters when looking at photos of high, versus low, social dominant macaques than those without an S-allele (LL) (Watson et al. 2009). This association between 5-HTTLPR genotype and social sensitivity may then influence political ideology in terms of hierarchical preference. In rhesus monkeys, for instance, when female monkeys were reorganized into a group of five monkeys varying in terms of 5-HTTLPR genotype, forcing the group to form a new social status hierarchy, S-allele carriers expressed the highest levels of both submission and aggression toward other members (Jarrell et al. 2008). This pattern of behaviors is expected among high-SDO (hence, conservative) humans, as well as those living in countries high in power distance index (PDI) (Hofstede 2001), where the inhabitants prefer hierarchical systems. Hence,

genetic influence on political ideology may interact with culture. Strikingly, in human society, countries that are high in PDI scores are more likely to have a greater prevalence of 5-HTTLPR S-allele carriers (Chiao 2010). Supporting this notion, species of rhesus monkey that have more tolerant societies with lenient hierarchy and relaxed dominance usually carry only the L-allele (Chiao 2010). However, species that are intolerant and have a strict hierarchy, including *M. mulatta*, carry at least one S-allele.

In sum, we argue that multilevel analysis approach covering from genetic to psychological, physiological and cultural levels would be more appropriate in analyzing the influence of negativity bias on political judgment.