Perception Matters: The Pitfalls of Misperceiving Psychological Barriers to Climate Policy

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Back in 2004, I wrote a book chapter titled "Perception Matters: Psychophysics for Economists" (Weber, 2004) to introduce economists to psychophysics, the oldest branch of psychology, which deals with the typically nonlinear, complex, and malleable relationship between physical stimuli and sensory responses. Perception and the misperceptions that result when the brain misinterprets sensory signals and their circumstances play a key role in many psychological phenomena, from visual illusions to higher-level judgments and responses, including responses to risk in the domain of cognitive psychology or to cultural norms in the domain of social psychology.

Why and How Perception Matters

Here are some examples of these phenomena and the role of perception in explaining them. The Müller-Lyer (1889) illusion (in which two lines of the same length are perceived as being of different lengths because they are framed by either inward- or outward-facing arrows) results from the fact that a two-dimensional image is interpreted as representing a three-dimensional reality. As a second example, risks (e.g., the risk of nuclear power or the risk of driving and the risk of flying from point A to point B) are perceived differently by technical experts and members of the general public, with resulting social disputes. Experts focus on material consequences (morbidity or mortality statistics), whereas the general public also responds to psychological risk dimensions, such as dread or the perceived controllability of negative consequences (Slovic, Fischhoff, & Lichtenstein, 1980; Weber, in press). In yet a third example, the perception of what others think or do in a given situation on a particular issue guides people's actions in addition to their own preferences in domains that range from energy consumption to voting and alcohol consumption (Tankard & Paluck, 2016). Furthermore, expectations of pending changes in such norms may lie at the root of tipping points in behavior from less sustainable to more sustainable equilibria (Nyborg et al., 2016). What these examples have in common is that there is no single mapping between physical and psychological reality. They show that perception involves interpretation and that perception, whether correct or incorrect, often influences behavior. The last of the three examples also suggests that incorrect perceptions can become self-fulfilling, a phenomenon that can both harm or help efforts to achieve more sustainable outcomes in a range of decisions.

Perception and Public Support for Climate Policy

The article by Van Boven, Ehret, and Sherman (2018) in this issue (pp. 492–507) provides not one but two important additional demonstrations of the role of perception and misperception, the first one in the domain of causal inference. Even though statistics textbooks caution us about the fact that cooccurrence and correlation do not imply causation, the correlation between political ideology and support for climate-change policies is often viewed as compelling evidence for the assumption that political ideology gives rise to support for or opposition to climate-change policy interventions. Although public opinion polling supports a correlation between political affiliation and belief in climate change, the facts may not be as strong as some rhetoric. In two surveys with diverse national panels conducted in the fall of 2014 and the fall of 2016, Van Boven et al. found that the majority of both self-identified Republicans and self-identified Democrats believe in climate change. Nevertheless, there are clear differences between Republicans and Democrats in their belief in climate change (70% and 93%, respectively, expressed some belief in 2014, and 63%

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and 89%, respectively, did so in 2016). It is worth noting that belief in climate change declined from 2014 to 2016 for all groups and that the Republican modal belief shifted from high in 2016 to neutral in 2014, despite accumulating evidence for climate change. In addition there are sizable differences between political parties in their members' assessment of whether climate change, although it may exist, is or is not caused by human emissions of greenhouse gases. Obviously, not believing in a causal role for human action makes mitigation activities less attractive.

Getting back to the advice of statistics textbooks, the only way to put causation to a valid test is by manipulating the putative variable(s) of interest, which is what Van Boven et al. do. What in particular is it about political-party affiliation that would give rise to differences in stated willingness to embrace climate-change policy interventions? Differences in beliefs in climate change are one thing. The two political parties also have ideological differences in their view of the wisdom and legitimacy of government mandates and intervention or the use of market forces to address social issues. Finally they differ in the moral principles or values they embrace. Of the five moral intuitions (harm/care, fairness/reciprocity, in-group/loyalty, authority/respect, and purity/sanctity) typically examined, liberals consistently show greater endorsement and use of the harm/care and fairness/reciprocity foundations compared with the other three foundations, whereas conservatives endorse and use the five foundations more equally (Graham, Haidt, & Nosek, 2009). These different motivations for holding particular views on specific issues can sometimes be in conflict. Denying women the right to an abortion, a touchstone of conservative ideology since the 1970s, may constitute an otherwise undesirable overreach by the government into the affairs of its people, but affirms purity and sanctity values. More recently, belief in and action on anthropogenic climate change seems to be replacing abortion as the litmus test of ideological acceptability for higher office, and a case can be made that Republicans might object to climate-mitigating action as a way of affirming in-group loyalty.

To complicate things even more, climate-mitigation policies come in different flavors, some of which (e.g., a revenue-neutral carbon tax) essentially just correct pricing errors by internalizing externalities and leave all further action to market forces. Building on the moral intuition of the in-group/loyalty foundation, Van Boven et al. hypothesize that it may not so much be ideological belief in or support of the issue itself that determines partisan support, but rather the origin of the proposed policy interventions. This idea is confirmed by anecdotal reports in the form of interviews with four former members of Congress; the authors suggest that both Republicans and Democrats will engage in motivated political reasoning and devalue a policy not on its merits but because it was proposed by the rival party. In a national panel experiment, they provided respondents with one of two greenhouse-gas mitigation strategies, a cap-and-trade policy historically associated with Democratic sponsors and a revenue-neutral carbon tax historically proposed by conservative politicians. In this experiment, however, each policy was described as originating from either Democratic or Republican members of the House of Representatives. After reading one of the two policies in one of its two partisan framings, respondents reported how much they personally agreed with the policy proposal and how much they would support legislation based on it. Van Boven et al.'s interpretation of the results is that people place party over policy, because Democratic respondents supported either of the two policies more when Democratic politicians proposed it, and Republican respondents supported either policy more when Republican politicians proposed it.

But this is not where the story ends. The effect of having one's own party propose a given policy (as opposed to having it proposed by the rival party) is significant but it is small, and the effect of respondents' party membership (i.e., their political ideology) is at least as large. When either of the two policies was announced by Republican members of the House, support among Democratic respondents was higher than it was among Republican respondents, even though the Democratic respondents had to endorse it across party lines.

Although partisan opposition effects were not large, everyone expected them to be present and to be much larger than they actually were. Respondents were asked how much the average Democrat and the average Republican would agree with the policy description in the frame they had seen and, in all cases, respondents exaggerated other partisans' reactive devaluation.

This gets us back to perceptions and misperceptions of social norms and their self-fulfilling nature, making this the second demonstration about the power of perception in the present study. Van Boven et al. found that the (often exaggerated) perceptions about the descriptive norms of partisan opposition by both Democratic and Republican respondents mediated the effect of partisan framing on their personal policy support, leading to a larger effect of partisan framing than would have been observed if perceptions about the descriptive norms had been accurate.

The authors drew three useful conclusions from their investigation. The first one directly follows from the previous observation that exaggerated beliefs about

partisanship can be self-fulfilling. Misperceived social norms should be corrected, thus undermining their power. Publishing and broadly publicizing the current article is a useful step toward that goal. Educating the media and enlisting their support in correcting exaggerated perceptions and beliefs about partisanship also seem promising. The second recommendation (i.e., to decouple political-identity concerns from climate policy) is a lot harder to implement. Proposed changes in culturally loaded language are undoubtedly valuable but will hardly be sufficient. Van Boven et al. suggest that it might be helpful to get people to affirm nonpolitical aspects of their personal identities, which has been shown to reduce partisan disagreement on political topics (Cohen, Aronson, & Steele, 2000). We found recently that basic value affirmation (Schneider & Weber, 2018) increased prosocial action, an effect that was mediated by an increase in positive self-regard. It would be interesting to see the extent to which this mediating mechanism might also reduce the need for political partisanship. Van Boven et al.'s third recommendation, again easier suggested than implemented, is for increased personal contact between members of rival parties to reduce conflict, increase the recognition of common goals, and correct exaggerated perceptions of partisanship.

General Observations

Let me end on three general observations about the take-away from this very interesting and valuable article. The first is to second the authors' conclusion that policy makers are just people, in the sense that they fall prey to some of the same biases as the general public, in this case, on the one hand, the pulls of partisanship and, on the other hand, an exaggerated belief in the power of this pull, which may become self-fulfilling. This result agrees with similar observations in other contexts, showing that professional expertise and the greater accountability that comes with making decisions on behalf of others do not insure that professional judgments and decisions are immune to deviations from rational processes. Other studies show that infrastructure engineers show loss aversion in their design decisions (Shealy, Klotz, Weber, Bell, & Johnson, 2016) that international treaty negotiators exhibit status-quo bias (Galbraith, 2012), and that professional climate-treaty negotiators show anchoring effects (Bosetti et al., 2017).

Second, psychological barriers to bipartisan support for climate policy abound. Van Boven et al. added two important barriers to the list, but the observation that partisanship-motivated cognition and an exaggerated belief in partisanship add to the problem does not invalidate any of the previously identified cognitive or motivational barriers. As with most stable behavioral phenomena, political inaction in the face of climate-change risk is multiply determined. The authors seem to imply that climate-change skepticism is no longer an issue, but the declining belief in climate change in their two panel studies from 2014 to 2016 seems to suggest otherwise. And greater "belief" in climate change, if it should be called that, has not necessarily translated into greater action, even at the individual level, at which partisan opposition is not a factor.

Finally, let me end by commenting on the pitfalls of misperceiving the psychological barriers to bipartisan support for climate policy. Different diagnoses of the problem call for different interventions or treatments. Although multiple processes can be (and likely are) at work, it is important to know which underlying process a given intervention is trying to address. The most common type of intervention (i.e., the provision of more "information" about the nature or the danger of climate-change risk) unfortunately does little to address documented existing barriers.

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