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Beware of individual differences

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Abstract: Most judgmental biases are found at the level of samples, but do not apply to each person; they reflect prevailing, but not universal, response tendencies. We suggest that it is more promising to study differences between biased and unbiased persons, and between easier and more difficult tasks, than to generalize from a majority of research participants to humans in general.

That humans err is hardly new. The ancient Romans said *errare humanum est.* The intriguing issue in research on judgmental biases is, therefore, not that humans may err in many ways, but to understand why human reasoning that results in adaptive behavior under most circumstances sometimes goes astray. We agree with Krueger & Funder (henceforth K&F) that this perspective has been lost in research on judgmental biases, and we suggest that neglect of individual differences constitutes part of the problem.

Research on judgmental biases yields main effects and individual differences. Usually, a majority of the respondents shows the "human" bias, whereas a minority shows the opposite bias or no bias at all. For example, Tversky and Kahneman (1974) observed that the majority, but not all, of their respondents neglected base rates and sample sizes. Moreover, variations in the framing of a problem may affect the error rate (Hertwig & Gigerenzer 1999). This shows that respondents vary in relevant knowledge and in cognitive ability, and that tasks vary in difficulty. Although it is productive to study the hierarchy of the difficulty of such problems, as well as which errors covary across respondents, to know whether or not more than 50% of the research participants exhibit a particular response tendency is unlikely to result in major insights.

Unfortunately, the individual differences are usually masked by the way the data are analyzed: as sample means, followed by comparisons of the observed mean to expectations under an elaborated normative model. If a discrepancy is obtained, it is claimed that a "human" bias has been discovered. Ross (1977) even suggested an *intuitive psychologist* as a personification of such tendencies at the aggregate level. But what about those research participants who were not susceptible to the bias under study? Are they *rational psychologists*? And why did they respond appropriately? In many experiments, they probably had better access to relevant knowledge, they understood the instructions as meant by the experimenter, or their affect-related schemata did not bias their judgments. Obviously, to suggest such answers is not as spectacular as to discover a "human" or even a "fundamental human" bias, but it reveals more about human cognitive processes and about the sources of both accurate and inaccurate judgments.

K&F noticed that some tasks that were used to study judgmental biases might qualify as items in an intelligence test. We agree, but would like to add that other biases are related to long-term affect. That depressives tend to be sadder but wiser (Taylor & Brown 1988) is a case in point. Another example is the tendency to report above-average levels in desirable attributes (Klar & Giladi 1997). Note that this tendency does not apply to each individual; whereas a majority of the respondents claims to be above average, a minority reports to be below average.

We are going to illustrate this with some data on the so-called *optimistic bias,* which is a tendency to estimate one's personal risk to experience aversive events as being lower, and one's chances to experience pleasant events as being higher, than those of the average person of one's age, sex, and education (Helweg-Larsen & Shepperd 2001). We let 114 students (71 women and 43 men) estimate the likelihood (in percentages) that: (a) they would experience 14 pleasant events (e.g., to be successful in their job), (b) another person of their age, sex, and education would experience these pleasant events, (c) they would experience 18 aversive events (e.g., to die in a traffic accident), and (d) another person of their age, sex, and education would experience these aversive events. To obtain measures of bias, difference scores were computed by subtracting estimates for other persons from estimates for oneself. Moreover, the risk estimates and difference scores were separately averaged across the 14 pleasant and the 18 aversive events.

Consistent with the optimistic bias view, the respondents estimated the chances that the 14 pleasant events would occur to themselves ($M = 57.02$, $SD = 11.39$) as higher than that they would occur to another person ($M = 49.30$, $SD = 11.29$); t (113) $= 6.72$, $p < .001$. Correspondingly, they estimated the chances that the 18 aversive events would occur to themselves ($M = 21.21$, $SD = 12.55$) as lower than that they would occur to another person ($M = 24.51$, $SD = 12.75$); t (113) $= 3.19$, $p < .01$. That, however, is only half the story: A minority of 21.9% of the respondents indicated that pleasant events were less likely to occur to themselves than to others, and 31.6% indicated that aversive events were more likely to occur to themselves than to others. Thus, a substantial minority of the respondents showed a pessimistic bias. To check whether the individual differences in judgmental tendencies were consistent across particular events, we estimated the internal consistencies of the difference scores and obtained alphas of .67 and .83 for pleasant and aversive events, respectively. Thus, the individual differences were reliable.

Moreover, when the estimated risks for oneself were compared to the actual risks, instead of the risks estimated for others, the majority of the respondents overestimated some risks. For example, the average risk estimate to die in a traffic accident was 16.05% for oneself and 17.15% for another person. But with a population in Germany of more than 80 million, with about 8,000 persons dying in traffic accidents each year, and a remaining life expectancy of our participants of approximately 55 years, their actual risk to die in a traffic accident was less than 1%. Risk estimates of 0% or 1% were provided by 26.3% of the respondents only. Thus, when actual risk was used as the standard of comparison, 73.7% of the respondents overestimated their risk.

There are two implications of these findings for research on judgmental biases. First, like many other biases, the "optimistic bias" does not apply to all humans; rather, it reflects that there are more persons who show one sort of judgmental tendency than there are persons who show the opposite sort. Second, depending on the particular standards to which the actual judgments are compared, opposite judgmental biases can be shown.

Functional clothes for the emperor

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Abstract: A more complete and balanced theoretical framework for social psychology, as recommended in the target article, must include functional explanations of processes – moving beyond enumerations of processes and their properties. These functional explanations are at a different, but complementary, level from process descriptions. The further advancement of social psychology relies on the incorporation of such multilevel explanations.

Krueger & Funder (**K&F**) state that "the problem-seeking approach [in social psychology] tends to be atheoretical" (target ar-