

Individual Differences in Overconfidence

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Some people seem more overconfident than others. Particular politicians and celebrities stand out for their overweening bravado, their thirst for the limelight, and their unfailing self-assurance. We all know people who can be described as “often in error but never in doubt.” However, while intuitive understanding of personality differences can show real insight (Funder, 1995), it is also prone to illusory correlations and false stereotypes (Sanbonmatsu, Sherman, & Hamilton, 1987; Slusher & Anderson, 1987). What does the research tell us about which personality types display overconfidence?

The empirical evidence provides weak evidence of stable individual differences in overconfidence. There are scattered claims of particular individual differences that correlate with particular measures of overconfidence, but ample reason to worry about selective reporting and false-positive results. Moreover, there is little consistency on different measures of overconfidence, further undermining the possibility of concluding that there is some general individual difference that applies across domains and tasks.

Before exploring the evidence, it is worth defining overconfidence. To display overconfidence it is necessary to be more confident than one deserves to be. Researchers have studied overconfidence in three basic ways (Moore & Healy, 2008): Overestimation is thinking you’re better than you are, overplacement is the exaggerated belief that you are better than others, and overprecision is excessive faith that you know the truth.

Overconfidence is not the same as confidence or optimism. The key difference is that overconfidence assesses the degree to which confidence exceeds some normative benchmark. The most widely used measure of optimism is the Life Orientation Test (Scheier, Carver, & Bridges, 1994). It measures generalized beliefs that the future is bright with items like, “In uncertain times, I usually expect the best.” Because the test leaves unspecified what “the best” is and lacks any measure of actual outcomes, the test itself does not measure overconfidence. Nor does it predict overconfidence on other measures (Tenney, Logg, & Moore, 2015).

Overestimation. The most common measure of overestimation comes from item-confidence judgments. Typically, research participants answer general knowledge questions and then report how confident they are that they answered each item correctly. These tests reliably show that confidence exceeds accuracy (Harvey, 1997). However, overestimation is not universal. The “hard-easy” effect documents the tendency for people to overestimate performance on hard tasks but underestimate it on easy tasks (Erev, Wallsten, & Budescu, 1994).

There are some domains in which research has documented a consistent tendency for people to overestimate. For instance, the planning fallacy describes the tendency to overestimate one’s rate of work (Buehler, Griffin, & Ross, 1994). The hard-easy effect can account for this evidence if researchers have selected hard tasks to measure the planning fallacy. Indeed, for simple tasks that are easy to accomplish, people tend to underestimate the rate at which they can complete them (Boltz, Kupperman, & Dunne, 1998).

Item-confidence judgments provide ambiguous evidence for overestimation because they also tap overprecision. At an item level, overestimating the accuracy of one’s knowledge is the same as being too sure one is correct. One solution to disentangling overestimation from overprecision is to ask people to estimate performance across a set of items. This sort of measure makes it possible for a person to be excessively sure of an underestimate of performance, such as when a student is convinced he did worse on a test than he actually did.

Overplacement. The “better-than-average” effect seeks to measure overplacement—the exaggerated belief that one is better than others. Typically, a majority of participants rate themselves as better than average, which tempts researchers to conclude that the group, overall, is overconfident (Beer & Hughes, 2010). However, few “better-than-average” studies measure participants’ actual standing relative to others, rendering this evidence problematic, because it is impossible to assess the accuracy of individuals’ beliefs. It is also problematic because it is entirely possible for the majority of the population to be above average in a skewed distribution (Harris & Hahn, 2011). (Most people have more legs than average.)

To measure overplacement, studies must measure both actual performance and beliefs about performance. Such studies do indeed find that people overplace their performances relative to that of others, but this is more prevalent on easy tasks or where success is common; on difficult tasks or where success is rare, underplacement is pervasive (Kruger, 1999; Moore & Kim, 2003). This result begs the question of how it could be that people overplace but underestimate on easy tasks, while they underplace and overestimate on hard ones.

The answer is that both effects can result from noisy estimates and statistical regression effects (Moore & Healy, 2008). People estimate their own performances imperfectly, and statistical regression assures that they are more likely to overestimate low performances and underestimate high performances. If people’s estimates of others is even more noisy and imperfect (Krueger, Acevedo, & Robbins, 2005), then they will overestimate others even more on hard tasks and underestimate them even more on easy tasks, leading to the erroneous belief that they are better than others on easy tasks and worse than others on hard tasks (Moore & Small, 2007). Thus, the co-existence of overestimation and underplacement for hard tasks and the co-existence of underestimation and overplacement for easy tasks is amenable to a parsimonious explanation and does not require a deep psychological theory.

Overprecision. The most pervasive but least understood form of overconfidence is overprecision—the excessive confidence that one’s beliefs are accurate (Moore, Tenney, & Haran, 2016). The typical study measures overprecision by asking people to specify a confidence interval around a best estimate of some quantity. For example, Alpert and Raiffa (1982) asked people to specify 98% confidence intervals around their guesses of general knowledge questions, such as annual egg production in the United States. These 98% confidence intervals included the right answer less than 50% of the time, suggesting that participants were inappropriately confident their estimates were accurate.

Overprecision is remarkably robust—it is rare to find reversals of overprecision in which people report being less sure than they ought to be (cf. Moore, Carter, & Yang, 2015). However, the size of the effect is sensitive to its mode of elicitation. Confidence intervals regularly elicit extreme overprecision. The size of the interval people report is shockingly insensitive to the confidence level specified; people report similarly-sized intervals for 98% and 50% confidence (Teigen & Jorgensen, 2005). Consequently, people look much more overconfident for 98% confidence intervals than for 50% confidence intervals. These results invite the conclusion that ordinary people do not really understand confidence intervals particularly well (Soll & Klayman, 2004).

Individual differences in overconfidence. Are there individual differences in overconfidence? Perhaps the most high-profile claim has been that men show more overplacement than women (Barber & Odean, 2001; Jonsson & Allwood, 2003; Niederle & Vesterlund, 2007; Pulford & Colman, 1997). However, male overplacement is far from universal (Nekby, Thoursie, & Vahtrik, 2008), and plenty of studies have failed to find gender differences (Acker & Duck, 2008; Deaves, Lüders, & Schröder, 2010; Mannes & Moore, 2013; Moore & Swift, 2010). If researchers routinely test for gender but are more likely to report it when it is statistically significant, then we ought to be concerned about false positives.

The literature has identified potentially relevant individual differences other than gender. Schaefer et al. (2004) report a correlation between extroversion and overprecision. Narcissism predicted overestimation in some studies (Ames & Kammrath, 2004; John & Robins, 1994) and overprecision in another (Campbell, Goodie, & Foster, 2004). Paulhus and colleagues’ (2003) over-claiming questionnaire seems designed to assess excessive faith in one’s own knowledge (Anderson, Brion, Moore, & Kennedy, 2012). And Paulhus and John (1998) identify desirable responding as a measure of trait self-enhancement. Yet both of these turn out to be poor predictors of overconfidence.

Given the preponderance of potentially relevant individual difference measures and the preponderance of ways to measure overconfidence, the spotty nature of the empirical record is cause for concern. That is, there are no individual difference measures that have been shown to correlate with all three types of overconfidence, operationalized through a variety of different measures. Instead, the empirical record presents particular individual differences associated with particular measures of overconfidence in particular contexts and settings and studies.

Replicability and false positives. Attempts to replicate these prior findings have not always met with success. Indeed, our systematic attempts have failed to replicate *any* prior findings of individual-difference correlates of overconfidence (Moore & Dev, 2016; Moore & Swift, 2010). We believe the spotty nature of the published record and the failure of replication attempts should call into question the robustness, durability, or replicability of published results claiming individual differences in overconfidence. It is possible that the empirical record includes false-positive results. In other words, some of the published reports of individual-difference correlates of overconfidence might not be robust to replication.

The evidence provides reason to doubt that there exist stable and general individual differences in overestimation or overplacement. Situational effects on these types of overconfidence are so powerful that most people will appear overconfident on some tasks and underconfident on others. By contrast, overprecision does seem to demonstrate more intra-individual consistency (Moore & Swift, 2010), leaving open the possibility that there are meaningful individual differences in the degree to which people are sure that they know the truth. The fact that we have failed to identify a personality scale that correlates with overprecision does not mean there are no stable individual differences, only that we have not found a personality trait that consistently predicts it.

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