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Intelligence



Trends in intelligence research

Where is research in the field of intelligence headed? Wendy Johnson (2012) and James Thompson (2012), in their reviews of our edited book, the *Cambridge Handbook of Intelligence* (Sternberg & Kaufman, 2011), help answer this question. Predictably, we agree with some points and disagree with others in their reviews. However, our purpose in writing this short essay is not to defend the book or authors against the reviews but rather to point out a trend that emerges from the citation analyses performed by the reviewers. Their citation analyses help address the question of where research in the field of intelligence is going.

Thompson (2012) identified the investigators who were cited the most in the *Handbook*, namely, “K.W. Fisher 21, R.E. Nisbett 21, C.J. De Young 21, P. Salovey 22, O. Wilhelm 22, A. Binet 23, J.R. Flynn 23, R.D. Roberts 23, A.S. Kaufman 24, A.R.A. Conway 25, D.K. Detterman 25, K.A. Ericsson 25, J.R. Gray 25, S.B. Kaufman 26, D. Wechsler 26, J.D. Mayer 28, R.W. Engle 29, R.B. Cattell 34, P.L. Ackerman 35, S.J. Ceci 35, J.L. Horn 35, J.B. Carroll 38, C. Spearman 41, K.E. Stanovich 44, E.L. Grigorenko 46, A.R. Jensen 48, H. Gardner 58, I.J. Deary 71, R.J. Sternberg 156” (p. 495). Johnson claimed that “the views of several prominent researchers who have made significant contributions to our understanding of the robustness of measures of intelligence and their associations with life outcomes, especially educational and occupational outcomes, are not represented here, including Linda Gottfredson, Nathan Kuncel, David Lubinski, Terri Moffitt, Paul Sackett, and Frank Schmidt.” (p. 69). (This observation may be a slight exaggeration, as Gottfredson is cited as having 13 page mentions in the author index of the *Handbook*, Kuncel 1, Lubinski 10, Moffitt 3, Sackett 4, and Schmidt 7.) But let’s assume that, in general, the reviewers’ points hold regarding those authors who are cited more and less. (In this analysis, we will remove Moffitt because her work is primarily in fields other than human intelligence, and it is not clear to us why she is included in Johnson’s list.)

The investigators who Johnson believes are under-cited are, we agree, top people in the field of human intelligence. They have in common that they agree that *g* or IQ pretty much measures what is most important in predicting everyday adaptive behavior. Indeed, several of them, such as Gottfredson and Schmidt, have written extensively about the wide predictive power of *g*. And we agree with these authors that *g* predicts at modest to moderate levels a very wide range of human behavior.

Ironically, when a finding or point of view becomes extremely well established and agreed-upon in a field, those

who study the finding tend to be cited less—it becomes canonical. If anyone is still cited in terms of the ubiquity of *g*, it is perhaps Spearman (1904), but after more than a century, perhaps people feel less need to cite him as well. Consider other examples. We know that situations are extremely important in psychology (Sommers, 2011) and that people tend to attribute to people’s dispositions psychological phenomena that are situationally induced—the so-called fundamental attribution error. But most people, in referring to this error, do not cite Ross (1977). They simply cite the error because it is so well established, at least in Western cultures. As other examples, when Freudian, Skinnerian, or Piagetian concepts are used, often these authors are not specifically cited because their association with the concepts is so well-known. For example, people do not always cite Freud when mentioning the “Oedipus Complex” or Skinner when mentioning “operant conditioning” or Piaget when mentioning “formal operations” because the origins of these terms are so well known.

It is now as well an established fact as exists in psychology that *g* correlates with many forms of human behavior and their outcomes (see, e.g., Hunt, 2011; Jensen, 1998; Mackintosh, 2011). We do not know of anyone who seriously questions this assertion. Even Howard Gardner (2006), well-known for his theory of multiple intelligences, has agreed that one could speak of a *g*-factor that encompasses some (but not all) of his proposed intelligences and that has wide-ranging predictive value. So perhaps authors who have collected data pertaining to the wide-ranging correlates of *g* have become somewhat less well-cited in some instances because the near-ubiquity of *g*-based correlates is so well established.

There is a coterie of researchers who seem to keep finding new outcomes with which to correlate *g*, and, perhaps predictably, they find new correlates. But eventually such research may yield diminishing returns because the wide-ranging nature of correlates of *g* is already so well documented. In other words, the “news value” of such findings will diminish because the general finding is so well established.

The investigators who Johnson (2012) believes are under-cited are among the best researchers in the field but they also are among those most associated with finding more and more outcomes with which *g* correlates. The investigators who are cited more, according to Thompson (2012), tend to be ones who either try to understand better what *g* is—whether physiologically, cognitively, culturally, or whatever—or ones who accept that the construct of *g* is somewhat useful but then try to move beyond it. So there is a trend that links Johnson’s review with Thompson’s.

Of course, the pattern we have identified might reflect bias in our choice of authors. But in a handbook of this size—42 chapters comprising 984 pages, it is hard to stack the deck all that much. We had to make sure the entire field was represented, as well as we could, and arguably it is the most comprehensive handbook review of the field. So the moral of the story may be that much of the future of the field is with those who accept that *g* is important but try to move beyond showing this again and again toward showing the mechanisms underlying the finding and to those who want to move beyond *g*.

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9 January 2012

Available online xxxx