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Big Data, Small Mind

Review of 'Don't trust your gut: Using data to get what you really want in life'
by Seth Stephens-Davidowitz

Joachim I. Krueger
Brown University

David J. Grüning
Heidelberg University

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Correspondence:

Joachim I. Krueger
Department of Cognitive, Linguistic & Psychological Sciences
Brown University
190 Thayer St.
Providence, RI 02912
Phone: (401) 863-2503
Home page: http://research.brown.edu/research/profile.php?id=10378

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If you want to test your soup for seasoning, a teaspoon will do. A ladleful will not give you any more information. – Professor Martin Wells, statistician and data scientist

Data are getting bigger and they encroach ever more on individual and social decision making (Gigerenzer, 2022). This is for the good inasmuch data carry useful information. Information that is predictive, valid, and free from unwanted biases helps improve human welfare. Big data can reveal truths that challenge compelling intuitions or cherished beliefs. Given that our world is being flooded with petabytes of data, we can now ask what lessons it may offer to those who wish to make the best of their lives – and that would appear to be most of us.

Seth Stephens-Davidowitz (SSD) responds to this quest in his provocatively titled book *Don't' trust your gut: Using data to get what you really want in life*. A self-professed data geek, SSD reveals his story wryly, a point to which we shall return. Meanwhile, it is clear that he wishes to write a self-help book ("I am writing a self-help book." p. 13). He presents *Gut* in order to offer data-driven help with the great life decisions: How to select a mate suitable for a happy partnership, how to be a great parent, how to succeed professionally, and how to be generally happy. Whew! Using instinct and data-driven memories, we may expect *Gut* to do well. It is not a demanding read; it serves up the data gathered from a few – but big- sources and readers may now go forth and "get what they want in life."

Some of the data-driven lessons are worthwhile, though neither novel nor counterintuitive. The value of social connection for well-being, for example, is well established after decades of the kind of study (for a review see Cacioppo, Hawkley, Kalil, Hughes, Waite, & Thisted, 2008) SSD dismisses for their "tiny samples" (p. 21), ignoring the fact that many small samples add up to very large samples. Likewise, the benefits of being in nature as opposed to being in a built-up environment are well-known (Capaldi, Dopko, & Zelenski, 2014), as SSD acknowledges. The benefits of being exposed to aesthetically pleasing scenes are a recent addition to this theme. The third element of the great happiness triad is motion. A moving body is a happy body (Zhang & Chen, 2019), and SSD turns this reinvented wheel by calling on us to get off the couch. Concluding with a flourish, he declares that "**The data driven answer to life** is as follows: be with your love, on an 80-degree and sunny day, overlooking a beautiful body of water, having sex" (p. 265, (boldface in the original).

This is a bit much and by the way who would enjoy the lake view at a moment of intimacy? Treading more lightly, one of us (JIK) has advised his students to take a friend out for a walk in nature to solve the equation of happiness = motion + nature + sociality. The data have long been clear. The remaining psychological puzzle is why people do not do more of this. Presumably, they have other and possibly irrational preferences as well as obligations such as making a living that keep them in a busy state short of the attainable level of happiness. Perhaps here is a chance for big data to make a contribution and solve this puzzle.

Other lessons are more surprising. In sales, and perhaps other contexts of persuasion or negotiation as well, emotional displays, positive or negative, detract from the message's effectiveness (Bharadwaj et al., 2022). This is important news in a culture that insists on a happy smile. This smile, we learn, can undermine perceptions of confidence and competence. Another lesson *Gut* draws from research on social mobility is that the presence of educated, responsible, and civic-minded adults in a neighborhood is beneficial for a child's development. SSD speculates that these other adults have a greater impact than the parents do because they trigger less emotional ambivalence and conflict. Yet, the data are not entirely clear. The nice-neighbor effect remains confounded with other environmental variables related to the quality of educational or professional opportunities as well as income (Chetty & Hendren, 2018b). Still, the categorical form of this claim is handily refuted by thought experiment. Would the children rather have their parents depart from the neighborhood or the nice people next door?

Gut fails to ask what would happen if everyone acted as advised. With the research showing that some neighborhoods are linked to better outcomes (e.g., higher incomes among the young adults who grow up there) than others, SSD tells readers to move there. The data, he notes, suggest that children benefit from an upward move even if nothing changes about their parents. Yet, even if everything is held constant, statistically and literally, it is easy to see how the neighborhood effect nullifies itself at the limit. As more people move in, a good neighborhood comes to resemble the population; it can no longer offer advantages in the form of comparatively better educated, more responsible, or kinder residents.

This self-nullification has already undone the fabled *Moneyball* effect, an effect SSD holds up as the showpiece of what data analytics can do. Analysis did help the Oakland A's succeed, but only once. Other teams adopted the same data driven approach, and the advantage disappeared within a year (Hakes & Sauer, 2006). As a rule, equilibrium strategies can generate an advantage only as long as some players fail to use them. In the eventual equilibrium state, the best a player or a team can hope for is to evade exploitation (Grüning & Krueger, 2021).

Back in the neighborhood, other social dynamics kick in. Families with means may wish to remain in a community of like families. As more families arrive in search of a better life, those who already have that life have an incentive to move out (Lees, Slater, & Wyly, s2008). The advice to move to a good neighborhood cannot work on a large scale. A move may also change the parents, or the parents have already changed in a way allowing the move. Average incomes are higher in desirable neighborhoods. Parents who are able to move up may have earned more than average in the old neighborhood, or they move because they have secured a better-paying job near the new home (Chetty & Hendren, 2018a, sought to statistically control for this possibility). Parents may also change psychologically and behaviorally once they arrive in a place with more space, more resources, more civil and articulate neighbors, and reduced worries about their safety (this possibility remains to be checked).

SSD assumes the causal effect of the neighborhood on the children's life success is clinched by the differential effects upon siblings of different ages. The younger ones live longer in the good neighborhood than the older ones and they end up earning more. The research by Chetty and colleagues, upon which this claim rests, is ingenious and thorough, but it involves natural experiments and bivariate statistics. The former – in contrast to controlled experiments – comprise neither intervention nor randomization. The latter leaves confounds unexamined and uncorrected. The data are big, interesting, and descriptive. Chetty interprets the findings with a care that is absent in SSD's self-help distillation.

What about the life goal of finding and keeping a loving soulmate? SSD claims that most people search badly. Brushing aside evolutionary psychology, he claims that by respectively pursuing dominant men and beautiful women, both sexes waste their efforts. They would be better off seeking partners among undervalued demographics such as very tall women and short men. It is true that such a revised search strategy is more likely to yield *some* result, but it is not true that it must yield a *better* result. Giving up an invalid search criterion does not mean that an alternative criterion will work. The alternative must be evaluated on its own merits.

For his mate search narrative, SSD relies on the work of Joel et al. (2020) who deployed machine learning to extract (p. 19061) “the most robust self-report predictors of relationship quality across 43 longitudinal studies”. The research did not yield much that is new and actionable. Relationship satisfaction correlates with how satisfied partners are with themselves, and so the best a mate searcher can do is to look for and seek to attract a happy and emotionally stable person, which is what most people want anyway (Regan, Levin, Sprecher, Christopher, & Cate, 2000). The problem is structural, and big data can’t solve it. Beauty, physical height, and a dominant demeanor are easier to detect than an attitude of self-acceptance or loving-kindness. Sound judgments of character take time. There is wisdom in setting up a second date.

Besides showing that a individuals’ satisfaction with themselves predicts, with a halo, their satisfaction with the relationship, Joel and colleagues find that certain judgments about the relationship predict relationship satisfaction. Trying to limit unwanted endogeneity effects, they removed several variables from the list of predictors (e.g., judgments of intimacy, trust, passion) because these judgments are conceptually enmeshed with the variable to be predicted: relationship satisfaction. It is not clear whether the variables left in the list are free from this kind of contamination. This self-report-based research does not help the relationship seeker to choose well. Predictions, if they are to support decisions, are about the future. If certain judgments of relationship quality predict relationship satisfaction, the relationship must be experienced so that the statistical predictors may be known. What good is it to make a prediction *after* the choice has been made?

The progress offered by the data revolution falls short of the hype. Howard and Dawes (1976) predicted marital happiness from the difference between the frequency of conjugal congress and the frequency of conflict (a shorter alliterative pair of Saxon verbs conveys the same idea, though more pithily). This simple difference provides a beautifully robust and behavior-based model. It does not help us to choose a partner either, but it *does* help us to decide whether we should stay or whether we should go. No machine learning is necessary, but see Da Silva and Cordeiro (2021) for an advanced econometric model.

It goes on like this. In the next six chapters, SSD dips into a suite of life issues and projects where people may want to do better: to become rich, famous, attractive. Each chapter presents a mix of the familiar, the trivial, and the ludicrous. As to attractiveness, SSD abandons big data for a small self-centered experiment with multiple versions of his tech-enhanced face. He finds that he looks sexier with glasses and more dominant with a beard, but this being a case study of one, the data-driven reader wonders what to conclude.

The last chapter addresses the question of how modern life undermines happiness. One problem is the need to make a living, and work is hard. As SSD puts it: "Work sucks" p. 238). Not being able to advise us not to work, SSD offers band-aids such as putting on some music, working from home, or working with a friend. He neglects efforts to make work itself more meaningful and safer where safety is a concern, or to get bosses to be less bossy. Most workers want to make a contribution to team efforts and organizational goals (Organ, 2018), and they want to be recognized for it (Gnepp, Klayman, Williamson, & Barlas S., 2020). Cosmetic changes to the daily grind will not do.

Gut is a loose collection of stories pointing to data-driven steps toward a more fulfilling life. Its effectiveness is compromised by the repeated overselling of what the data suggest and the author's transparent self-absorption. He seems to recognize that the data do not reveal all a reasonable person needs to know Seth dedicates the book to Julia, writing that "If the data says that loving you is wrong, I don't want to be right." As he pulls the rug out from under his book's project, we must, as Camus would say, imagine him happy.

This is how the review ended, until the Holy Father chimed in, that is. After SSD whinged, as the British would say, "that Camus, like so many other renowned philosophers who pontificated without proper tools of measurement, while he may have been clever, was dead wrong" (p. 241), it may only be fitting for the Pontiff to have the last word. Visiting with (largely migrant) youths in Bahrain, he counseled "Don't just Google your questions about life decisions" [as quoted or paraphrased by N. Winfield]. "Instead, find a parent, teacher or grandparent who can offer guidance" (Winfield, 2022). Between Mr. Stephens-Davidowitz and Pope Francis lies a gulf indeed, both literally and figuratively. No one argues that all big data are pointless, but a critical limitation is the very fact that they have grown big through aggregation. A teacher or (grand)parent may be privy to the nuances of a youth's life space that Google is not, at least not yet. Thank God!

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