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i want to make you uncomfortable

Information that is transmitted through the media and by word of mouth influences our cultural beliefs. Social scientists characterize the transmission of such information as informational cascades. It is possible for informational cascades to be triggered by a small amount of information and maintained through repetition by those presumed to be informed.

When people mistake the availability of information as an indicator of its reliability, a false informational cascade is created. Social scientists have found that false cascades affect everything from ordinary people choosing restaurants to the views of politicians, doctors' diagnoses, and the decisions of federal judges.

A false informational cascade works a little like an urban legend, but it needs a lot more than a few quirky enthusiasts believing it is evidence-based. A simple and uncontroversial example of a false informational cascade is the widely held belief that a person should drink 8 glasses of water a day. It has been gaining momentum without any scientific basis, until recently, for about 200 years.

False informational cascades, combined with people's tendency to hear and see what they want to believe, are an important topic for our forum on youth-development because they appear to have greatly influenced advocates for children, governmental interventions meant to support at risk children, and researchers in education and youth development. I hope the following version of reality makes you a little uncomfortable.

Reading

I have heard from many informed people that children who do not read fluently by the third grade do not become fluent read-

ers. The sentence is always stated with conviction as a known fact about intellectual development, and I have accepted it that way.

After hearing it once again, rolling off the tongue of a brilliant man who dedicates time to help at-risk children, I was lucky enough to come across the following passage in Maryanne Wolf's "Proust and the Squid: The Story of Science and the Reading Brain," which I have abbreviated here:

The National Reading panel and the 'nations report card' indicate that 30 to 40 percent of children in the fourth grade do not become fully fluent readers with adequate comprehension...teachers, textbook authors, and indeed the entire school system have different expectations from Grade 4 on...Through no fault of their own, most fourth-grade teachers never take a course in teaching reading to children who have not acquired fluency.

If what Wolf, who is the director of the Center for Reading and Language Research at Tufts University, says is true, a child who does not gain fluency early is out of luck, because the third-grade developmental benchmark may be an obstacle we have created, not an act of nature. It also may be a candidate for a false informational cascade.

"Why Most Published Research Findings Are False"

A recent peer-reviewed paper written by John P. A. Ioannidis explains how easily scientists are affected by false informational cascades. Ioannidis is an epidemiologist and a medical doctor who works with the Institute for Clinical Research and Health Policy Studies in the Department of Medicine at Tufts-New England Medical Center.

In "Why Most Published Research Findings Are False," he claims that at least 50 percent of the conclusions arrived at in peer-reviewed studies are wrong. The reason his hypothesis may be true is that researchers consistently discard findings that are ambiguous or negative.

the view from here

This phenomenon makes it more likely that studies confirming desired results will be published disproportionately. Ioannidis observes that most peer reviewed scientific findings are merely accurate measures of prevailing biases that, eventually, will be refuted.

A study passed to us from an advisor at Oregon Health Sciences University, appears to confirm Ioannidis' hypothesis. In "Truth Survival in Clinical Research: An Evidence-Based Requiem?" lead researcher Dr. Thierry Poynard and his colleagues test the hypothesis that high-quality methodology increases the half-life of scientific studies, the half-life being the time it takes for half of the studies in a field to be found false. They find the half-life of studies on cirrhosis and hepatitis is 45 years. They also find no correlation between the quality of methodology and the survivability of the conclusions reached by researchers.

Even more instructive to the discussion at hand, Poynard et al calculate that almost 70 percent (± 15) of negative conclusions are still considered true after 50 years, and the portion of positive conclusions standing the same test of time is only 14 percent (± 4).

In the social sciences, a half-century of misinformed policies could easily effect children's lives before enough dissonant information proves that a solid scientific consensus, a dominant paradigm, is false.

Widely Quoted Conclusions

In an interview in "Edge" magazine in 1999, Judith Rich Harris describes two papers on the same topic with conflicting results that reveal how cultural beliefs put blinders on trained researchers in the field of psychology. Both articles appear in the same issue of "Archives of Pediatrics and Adolescent Medicine."

"The first [study] got into all the newspapers: the researchers reported that children who were spanked by their parents became more aggressive. The second went unnoticed: the researchers reported that chil-

dren who were spanked by their parents did not become more aggressive. It turned out that the two groups of researchers were measuring different things: the first group looked at how the children behaved at home, the second at how they behaved at school ... The widely quoted conclusion of the first group of researchers—that if parents stopped hitting their kids it could 'reduce the level of violence in American society'—was nothing but hot air."

According to Harris, developmental psychologists make the mistake of assuming children's behavioral traits are consistent across different environments, and reliable research indicates the consistencies that are measured can be more accurately attributed to genetics, not parenting.

Harris is a theorist in the behavioral sciences who, over her career, accumulated so much dissonant but credible information challenging the prevailing paradigm on parenting that she felt she could no longer, in good conscience, continue earning a living writing traditional psychology textbooks.

In her most recent book, "No Two Alike," she explains that developmental psychologists have for decades ignored or discarded a large body of evidence showing that parenting does not affect the things that psychologists measure on personality tests. These tests measure traits psychologists have labeled agreeableness, neuroticism, openness, conscientiousness, and extroversion.

A significance of many of the studies Harris documents may be measured by the original disbelief of the researchers who were sure there was something wrong with their data. Their studies, however, have been replicated many times, even by developmental psychologists committed to discrediting them. Harris has made many people uncomfortable simply by reporting the results of 40 years of ignored research in behavioral genetics and other fields of the social sciences.

the view from here

Brain Development and Middle-aged Rats

According to John Bruer, the belief that the most important part of intellectual development takes place in the first three years of life also is not an evidence-based interpretation of available data but rather an accurate measure of cultural bias, political bias, and misguided good intentions.

Bruer is the director of the James S. McDonnell Foundation in St. Louis, Mo. In collaboration with the Pew Charitable Trusts, he has established the McDonnell-Pew Program in Cognitive Neuroscience, which links a field of neurology known as systems neuroscience with psychology in the study of human cognition.

In the “Myth of the First Three Years: A New Understanding of Early Brain Development and Lifelong Learning,” Bruer, explains that the famous experiments claimed by early childhood activists to show the effects of “enriched environments” on early development were conducted on rats, which turn out to be, according to the actual researcher, Dr. William Greenough, adolescent or middle-aged rats.

So, if you accept rats as adequate models for humans, these studies actually demonstrate that, hypothetically, normal environments (one example includes growing up in rural Africa) are more than enough enrichment for normal development. Bruer points out that there also is a great deal of credible evidence supporting the plasticity of our brains throughout life.

Among others, he is critical of well-known science journalists, including Sharon Begley at “Newsweek,” (a common source of misinformation on brain science) for citing unpublished reports and publishing discredited brain scans of supposedly enriched and deprived brains. He also documents that claims for early brain development and synapse growth are based on one small study that proves nothing about “brain power” or how children develop it.

Bruer takes to task Rob Reiner and his Rob Reiner Foundation as well as Hillary Clinton for her support of Reiner’s “I Am Your Child Campaign.” He points out that the extrapolation of small studies that accompanied the campaign has been based on a misinterpretation of Greenough’s and other unconnected strands of research in the nascent field of brain science-

and that these strands are not conclusive enough to base policies on. Before deciding that Bruer has not looked at the research, please take the time to read his book.

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A New Wave of Evidence?

In the course of discussions with activists supporting Portland Public Schools, including a conversation about reading in the home and early intellectual development, I have been referred to studies showing the positive effects of community and parental involvement in children’s education. These studies are described in “A New Wave of Evidence: The Impact of School, Family, and Community Connections on Student Achievement,” It is published by the Southwest Educational Development Laboratory.

In a section titled “Limitations on Research,” the authors state their confidence that the studies supporting parental involvement in schools are carefully done and thoughtfully interpreted.


Surprisingly, they also acknowledge that even though a large number of studies have been conducted and the results published, there are not enough experimental studies to support many of the findings.

Limits of funding, and the all-too-common small samples, selection bias, lack of control groups, plus self-reporting of participants rather than independent verification, are among the many issues that lead the authors of “A New Wave of Evidence” to acknowledge, refreshingly, that “little can be said about cause and effect.”

The End

In this essay many of the ideas that have been picked as examples illustrating the nature of false informational cascades happen to challenge a widely held determinist view that experiences in childhood are supreme arbiters of intellectual and social destiny

If you would like to be made uncomfortable by even more ideas that I believe not enough people know about, please read Sockeye’s interview with James Flynn. He finds that if you want to make smarter adults you have to change their environment rather than their primary experiences in childhood—implying that rising above our natural intellectual abilities is a lifelong endeavor powerfully affected by current environment.

Flynn, Bruer, Wolf, and Harris have helped me understand that when someone claims a popular idea or practice is evidence-based it’s time to do more homework, not stop. Which gets me back to the popular mantra about the need for developing fluency as a reader by the third grade. When I come across the study everyone seems to be referring to, I will share it. So far, no one has been able to point me in the right direction. 

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false informational cascades

Here is a small example of what might be a candidate to be labeled a false informational cascade, a widely held consensus described as evidence based that is actually built on false information.

Most people presume that reading to children at home increases their youngsters’ academic achievement. But data from the U.S. Department of Education’s Early Child Longitudinal Study (1998) (ECLS), which includes 20,000 children, show no correlation, positive or negative, between reported reading in the home and academic achievement. Steve Levitt writes about this in “Freakonomics.” People I have spoken with about this ECLS study trust neither the study nor University of Chicago economist Levitt. It does not make sense to them that what Levitt says could be true.

Reading expert Maryanne Wolf is director of the Center for Reading and Language Research at Tufts University. In her wonderfully informative book “Proust and the Squid: The Story of Science and the Reading Brain,” Wolf eloquently describes a study that shows positive academic effects for reading to children.

The study is “Lexical and Syntactic Knowledge of Written Narrative Held by Well-Read-To Kindergartners and Second Graders” by Victoria Purcell-Gates. An advisor to Sockeye has tracked it down and found the study is interesting, but, in fact, does not actually compare what the author refers to as well-read-to children to a similar group that has not been well-read-to. It compares kindergartners to second-graders and raises questions about the material kids are read in school. In other words, the study was not an experimental study using a control group. Purcell-Gates, in her paper, acknowledges that the study says nothing about causal relationships.

Such mistakes, which incorrectly imply the existence of important evidence for widely held beliefs (especially when made by people as expert and bright as Maryanne Wolf), seem common in the social sciences where there is so much passion and yet so few experimental studies are conducted.

Even if Levitt’s interpretation of the ECLS data is not accurate, and reading to children in the home turns out to support academic achievement, Wolf’s citing of the Purcell-Gates study is still a powerful example of how false informational cascades work. Wolf’s mistake also makes it hard to discount Levitt’s analyses of the ECLS data. Why is this important? Because reading to kids in the home may not be even close to good enough to help at-risk kids overcome obstacles to learning to read.