

# SEED

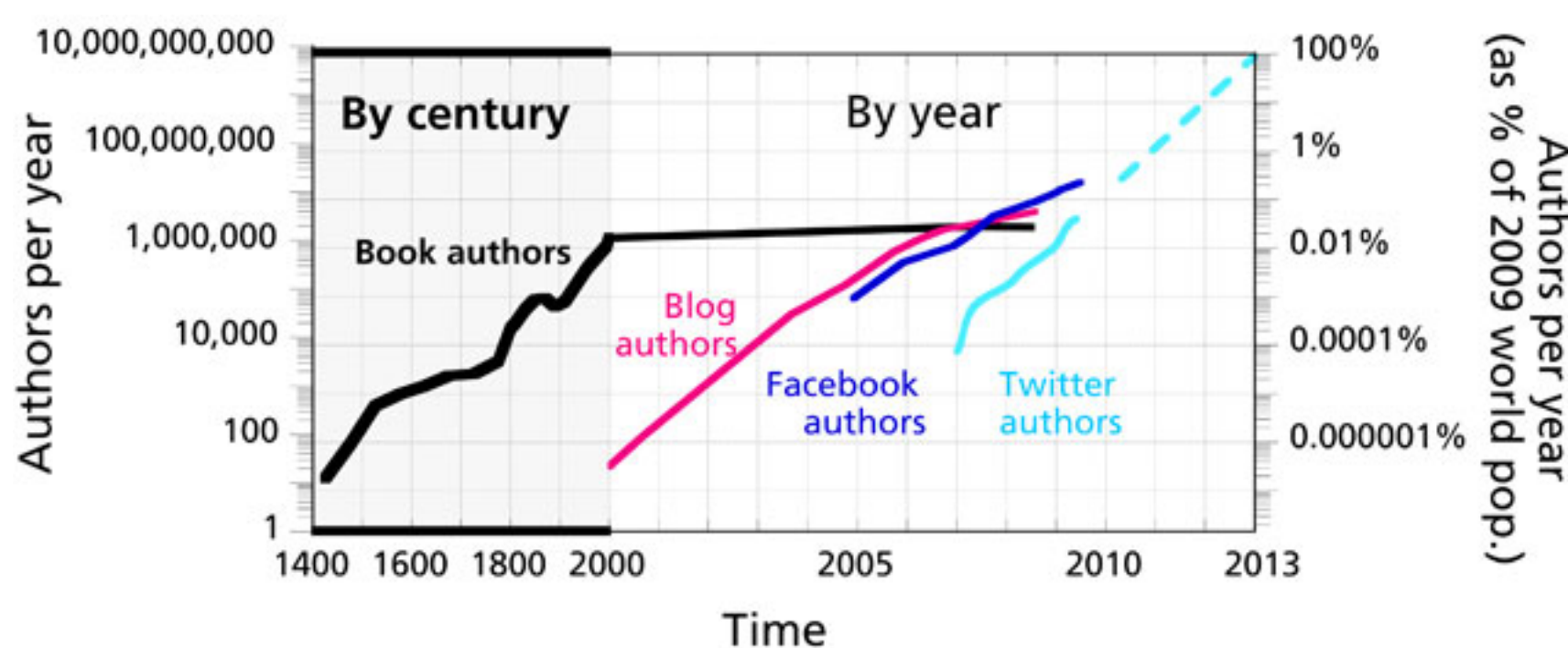
SEEDMAGAZINE.COM  
OCTOBER 21, 2009  
SUBSCRIBE TO THE MAGAZINE »  
RSS & EMAIL UPDATES »  
FOLLOW US ON TWITTER »

## NEARLY UNIVERSAL LITERACY IS A DEFINING CHARACTERISTIC OF TODAY'S MODERN CIVILIZATION; NEARLY UNIVERSAL AUTHORSHIP WILL SHAPE TOMORROW'S.

A Writing Revolution  
ANALYSIS BY DENIS G. PELLI & CHARLES BIGELOW / OCTOBER 20, 2009

Nearly everyone reads. Soon, nearly everyone will publish. Before 1455, books were handwritten, and it took a scribe a year to produce a Bible. Today, it takes only a minute to send a tweet or update a blog. Rates of authorship are increasing by historic orders of magnitude. Nearly universal authorship, like universal literacy before it, stands to reshape society by hastening the flow of information and making individuals more influential.

To quantify our changing reading and writing habits, we plotted the number of published authors per year, since 1400, for books and more recent social media (blogs, Facebook, and Twitter). This is the first published graph of the history of authorship. We found that the number of published authors per year increased nearly tenfold every century for six centuries. By 2000, there were 1 million book authors per year. One million authors is a lot, but they are only a tiny fraction, 0.01 percent, of the nearly 7 billion people on Earth. Since 1400, book authorship has grown nearly tenfold in each *century*. Currently, authorship, including books and new media, is growing nearly tenfold each *year*. That's 100 times faster. Authors, once a select minority, will soon be a majority.



Number of authors who published in each year for various media since 1400 by century (left) and by year (right). Our prediction for the imminent future appears as the extrapolation of the Twitter-author curve (dashed line). The horizontal scale of time has one grid line per century (left) or per year (right). The first blog appeared in 1997; Facebook was launched in 2004; Twitter, in 2006. Note that the colored curves on the right have roughly the same steepness as the black curve on the left, despite the hundred-fold increase in the time scale between left and right. This indicates that the new media are growing 100 times faster than books. The book-authors line is not really broken; it's still growing at the same old rate, tenfold per century, but looks flat when plotted by year. The vertical scale is number of authors per year, as a count (left) or percent of the world's population (right). The logarithmic vertical scaling, increasing by powers of 10, displays growth clearly because the same percentage increase is always represented by the same upward shift on the graph. Plotted with this scaling, many growth phenomena, including epidemics, produce straight lines, which are particularly easy to recognize and describe. ([Click here](#) for methodology and full list of sources.)

But does increasing authorship matter? And is this increase a blip or a signpost? Authorship has risen steeply before. The period of the first steep rise, near 1500, coincides with the discovery of the New World and Protestantism, which saw the publication of the first vernacular Bible, translated by Martin Luther. The second, near 1800, includes the Industrial Revolution and its backlash, Romanticism. The current rise is much steeper.

Today, at 0.1 percent authorship, many people are trading privacy for influence. What will it mean when we hit nearly 1 percent next year and nearly 10 percent the year after as the current growth predicts? Governments, businesses, and organizations must adapt to a population that wields increasing individual power. Protestors used Twitter to discredit the election in Iran. When United Airlines refused to reimburse a musician for damaging his guitar, the offended customer posted a song online—“[United Breaks Guitars](#)”—and United's stock dropped 10 percent.

Public discussion creates a social conscience. In July, Dawn Staley, University of Southern California's women's basketball coach, complained on Twitter of rude service at her favorite pizza spot; the employee responsible was fired the next day. The judgment of the vice-chancellor of Buckingham University was widely questioned after he [claimed](#) that “curvy” female students are a “perk” of his job. For better or worse, as more people make public comments, we all share more thoughts and are more subject to public opinion.

In our analysis, we considered an author's text “published” if 100 or more people read it. (Reaching 100 people may seem inconsequential, but new-media messages are often re-broadcast by recipients, and then by their recipients, and so on. In this way, a message can “go viral,” reaching millions.) Extrapolation of the Twitter-author curve (the dashed line) predicts that every person will publish in 2013. That is the ceiling: 100 percent participation. Provided current growth continues, the prediction of imminence is robust. Increasing the stringency of the criterion for “publishing” from 100 to 1,000 readers would reduce new-media authorship tenfold, but merely delays the predicted 100 percent participation by a year under this model.

International concern for the minority who can't read may soon extend to those who can't publish. Reading—a defining characteristic of civilization as far back as ancient Greece when all Athenian citizens were expected to know how to read—is now taken for granted in industrialized democracies. Publishing by the few Athenian authors brought us drama, philosophy, science, mathematics, literature, and history. As readers, we consume. As authors, we create. Our society is changing from consumers to creators.

*Denis G. Pelli* is professor of psychology and neural science at New York University and co-inventor of the Pelli-Robson contrast sensitivity chart. *Charles Bigelow* is the Carey Distinguished Professor of Graphic Arts at the Rochester Institute of Technology, a MacArthur Foundation prize fellow, and co-designer of the widely used Lucida font.

Front page image courtesy of [Liz West](#).