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Why the 'Old Brain' Struggles with Big Data

How we can all learn to stop worrying and love the information age.

In an innovative effort to help more of their undergraduates complete their degrees, over 150 U.S. universities are currently applying predictive analytics to massive stores of historic student performance data to better understand the qualities and behaviors that correlate with student success. With this information, the schools hope to identify those students "likely to fail" certain courses, and alert their professors to the risk. Professors can then provide meaningful interventions aimed at helping these students succeed.¹



Though most would agree that improving student outcomes is a laudable goal, this specific use of big data and predictive analytics has come under fire, for conflicting reasons. Professors, some argue, might treat flagged students differently. But isn't that the point? How else would they help these individuals succeed?

Others worry that instructors might pay so much attention to "likely to fail" students that they would neglect the rest. Still others fear professors will do just the opposite—form biases against the very students who most need help.

From social media to search engine ads to hiring to transportation, big data is spreading like a great umbrella over virtually every aspect of our lives. Any change this dramatic is bound to stimulate debate and even a measure of fear, and the fast-growing availability of very personal data compounds concerns. What was once considered private—our whereabouts at any given moment, our shopping preferences, our reading and viewing habits, our grades—now goes into that vast repository known as the "cloud," to be sifted and sorted and used and shared.

"Old Brain" vs. New Thinking

At its best, big data serves as a tool that can enhance our lives in innumerable ways we haven't even yet considered. So why do so many oppose it?

Fears about big data—especially during these early days—often stem from purely hypothetical situations. People's gut reactions tell them that information about themselves or their loved ones, collected and disseminated, is bound to be used for evil rather than good.

But how valid are their concerns? Author and professor [Jim Davies](#) has an interesting theory about reality and intuition. The human brain, he says, comprises two realms: the "old brain" in the back, which produces impulses and instincts that help us to survive—this is where intuition originates—and the "new brain" in the front of the head, which we use to control those impulses.

The problem is that, sometimes, the two conflict. For example, we might crave fast food even while knowing it's bad for us. Or we might feel fear when standing on top of the Empire State Building even though we know we're not going to fall.

Could it be that our fear of big data emanates from our old brains? What exactly are we really afraid of? And, just as the old brain interprets images in art and film as being real—this is why we feel afraid when watching horror movies—perhaps it conflates our hypothetical big data fears with reality.

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Maintaining Data Integrity in the Analytics 'Wild West'

When end users download increasingly powerful desktop analytics tools without involving IT, data quality quickly erodes and IT environments fragment. CIOs are rising to this challenge by collaborating with business leaders and end users to create interconnected analytics ecosystems that support data integrity while meeting the needs of both the business side and IT.



Data Integration Primes Pump for Retail Analytics

Feeding channel-specific, siloed data into retail analytics solutions has largely become a waste of time, says Deloitte Consulting LLP's Jeff Simpson. As digital's influence on all sales channels grows, retailers can only truly understand customer behavior by consolidating data from across all channels before performing their analysis.



A New Approach to Analytics Deployments

With analytics tools becoming more broadly accessible, some C-suite executives may no longer be willing to work through traditional IT processes to acquire and implement the analytics capabilities their teams need. This gives CIOs an opportunity to collaborate with C-suite peers to create new win-win approaches to analytics deployments.

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Maintaining Data Integrity in the Analytics 'Wild West'

When end users download increasingly powerful desktop analytics tools without involving IT, data quality quickly

Making Data Work for Us

Using our rational minds, we can identify many positive uses of big data that have the potential to improve all our lives. Wouldn't we rather see advertisements for products and services relevant to us than for things we don't care about? Surely we want to know when a serious

erodes and IT environments fragment. CIOs are rising to this challenge by collaborating with business leaders and end users to create interconnected analytics ecosystems that support data integrity while meeting the needs of both the business side and IT.

A Pragmatic Approach to Getting Started with Big Data

Many big data efforts stall before they even reach a pilot phase. Overwhelmed with technology choices and options for use cases, companies can easily get mired in details. By following a practical and well-defined path for getting started, CIOs can rise above tactical challenges and set out to demonstrate the value of big data.

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illness or disease is prevalent in our own community. And if our kids are struggling to succeed in school at any age, we certainly want them to receive all the help their teachers and administrators can provide.

Data is, after all, a tool with enormous possibilities to change our lives for the better. Rather than spend our energy swimming against the data tide—consumed by hypothetical fears that big data might be used against us—why not dream instead of the myriad ways we can make it work for us, even as we vigilantly monitor its usage to weed out those applications that truly represent a threat?

—by [JR Reagan](#), Ph.D., global chief information security officer with Deloitte Touche Tohmatsu Limited. He also leads the HIVE (Highly Immersive Visual Environment), a state-of-the-art demonstration and development center located within the Center for Federal Innovation in Arlington, Virginia.

1. Libby Nelson, "Big Data 101: Colleges are hoping predictive analytics can fix their dismal graduation rates," Vox, July 14, 2014.

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