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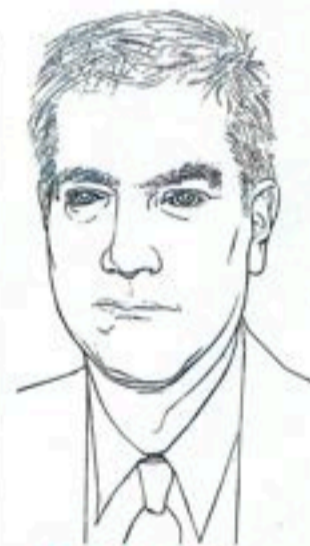
## Putting the Social into Science Forget about nature vs. nurture. The answer lies in between

By Nicholas A. Christakis

**L**OOK AT THE WORDS ON THIS PAGE. NO ONE NEEDED TO teach you how to see; evolution has hardwired us for this complex task. Now try to understand them. No child is born able to read; this task is learned from parents and teachers in a social setting. In other words, one of our most essential abilities as humans—reading—is the product of a combination of innate and learned traits.

The distinction between nature and nurture was always a false dichotomy even before it became a cliché, yet we still tend to think of biology and culture as warring explanations for human experience. But recent scientific discoveries are putting this mind-set on a collision course with reality. Things we once thought were entirely determined by culture—like our choice of friends or our voting patterns—turn out to have deep evolutionary roots. For example, a recent study I co-authored found that people seek out friends who have the same genetic variants that they do, way beyond physical characteristics. Conversely, we also know that early social experiences, such as education, poverty, malnutrition and child abuse, can modify the expression of a person's genes. We even have evidence that a specific kind of cultural activity—the domestication of cattle over the past 7,000 years—has actually altered our genes to make us more lactose-tolerant.

This synthesis of the natural and social sciences is being spurred not only by biological discoveries but also by technological advances. For example, it is now possible to use the Internet to instantly enlist thousands of subjects in virtual labs and conduct social experiments that were previously impossible. Moreover,



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we now have access to vast amounts of data since we can inconspicuously track the behaviors, purchases, movements, interactions and thoughts of millions of people in real time via credit cards, cell phones and online social networks.

This new biosocial science not only reshapes our understanding of humanity but also holds promise for public policy and public health. Organizations like the Bill & Melinda Gates Foundation, the Robert Wood Johnson Foundation and the National Institute on Aging (which has funded some of my work) see that some of our most vexing health problems—malaria, for example—cannot be solved by pharmacological and engineering solutions alone. We can develop novel insecticides and special bed nets to prevent mosquito bites and distribute them via clever supply chains to remote villages. Yet if the people there don't change their behavior—and if we can't pair our biological understanding with an understanding of that behavior—then we will continue to fail.

But that's just the start of the potential of biosocial science. Imagine you could reduce devastating market swings by understanding people's biological responses to risk. Or figure out how to control the behavior of dangerous crowds. Or predict the course of an epidemic weeks before it strikes the general public (something we have already done).

The melding of the biological and social sciences can feel threatening. On the political right, people resist because they want to see humans as separate from the natural world and not unmoored from moral or religious absolutes. On the left, they resist because they don't want to believe we have an intrinsic biology that could play a role in human affairs.

For the past 100 years, people have looked to the physical and biological sciences to solve societal problems and have reaped great rewards with discoveries, from nuclear power to plastics to antibiotics. But in the 21st century, it is biosocial science that holds the key to improving human welfare. If we were to see humans as fully part of nature, we might even solve the hardest problem in all of science: the origin of human consciousness itself. ■