

<http://somatosphere.net/2015/07/introduction-bioculturalism-the-why-and-how-of-a-promising-medical-anthropological-future.html>

Introduction: “Bioculturalism: The Why and How of a Promising Medical Anthropological Future”

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By Jeffrey G. Snodgrass

I’m perplexed by cultural anthropology’s antagonism toward biology, with culture and biology more typically treated as providing alternate and competing, rather than complementary and synergistic, explanations for human functioning. This is particularly strange to me—a practicing cultural anthropologist with a background in molecular biology—when even medical anthropologists fail to account for the role biology plays in shaping human health. Wouldn’t such a consideration enrich our comprehension of the interplay between sociocultural milieus and human bodies?

“Biocultural” anthropologists do now routinely investigate human health and other topics. However, they are a small minority, both within medical anthropology and anthropology more generally. Though small, they are potentially important. To me, this group’s synthetic approach represents one promising future for anthropology, which would be capable of producing more comprehensive explanations for human function (and dysfunction), and in the process bridging divisions both within our discipline and between anthropology and other natural science disciplines.

To sketch a blueprint for such a future, I have invited a group of self-professed “biocultural anthropologists” to address the question, “How might cultural anthropology gain by taking biology more seriously?” Responses to this issue will run in a new series, Bioculturalism, which aims to get anthropologists and closely-related others to talking seriously, and thinking practically, about how this possible anthropological future might unfold, and to what positive ends.

To kick off this series, I respond to this topic myself, which, as you’ll see below, I’ve parsed into five interrelated questions. My response foreshadows themes touched upon by the other contributors. Also today, you’ll hear [how Bill Dressler responds to my questions](#), followed by Emily Mendenhall, Chris Lynn, and Greg Downey every other Monday. This will conclude the first part of this series, with a planned second set of contributions to follow.

Enjoy.

How and why might cultural anthropologists and social scientists interested in health benefit from integrating biological variables/biomarkers into their research and analysis?

In a recent biocultural study of the well-being of Indigenous Sahariya “conservation refugees” in central India, I assessed these individuals’ stress and health via the salivary analytes cortisol and alpha-amylase, self-reports of psychosomatic stress and emotional experience (utilizing locally validated psychiatric scales), in-depth person-centered interviews, and ethnographic observations. These alternate sources of data told interlocking but somewhat unique stories about the state of these Sahariyas’ bodies and minds. Where the data streams parallel each other, I feel more confident in my conclusions. Where data diverge and even appear contradictory, I am forced to challenge my assumptions, acknowledge ambiguities and limits both in my own knowledge and in prevailing theories, and generally think more deeply about the nature of my findings.

More recently, related to my ongoing studies of distressful online gaming as a form of “addiction” to the Internet, I’m planning a gene-by-environment (GXE) interaction study, where I’ll assess the relative power of genetic as compared to sociocultural resilience/vulnerability markers to predict compulsive patterns of online play. For the genetics, this will require examining individual gamers’ DNA to determine the extent to which they carry known single nucleotide polymorphisms (SNPs) associated with addiction (related to the body-brain’s stress reactivity and reward circuitry, for example). For the sociocultural variables, I envision assessing gamers’ relative degrees of social distress, e.g. by tracking self-reported early trauma, stressful life events, and also relative “consonance” or “dissonance” with culturally-sanctioned models of the good life (utilizing the “cultural consonance” approach pioneered by Bill Dressler, whom we’ll hear from next). I hypothesize that higher offline social distress—rather than the genetics, and certainly not exclusively the genetics—propel gamers into problematic patterns of online play, as they seek escape and respite from their life’s problems. It is one thing for cultural anthropologists to (rightfully) critique the now culturally and medically dominant “disease model” of addiction, where the roots of behavioral compulsions are located in neurotransmitter imbalances and “broken brains,” with often scant attention paid to how environmental and sociocultural factors might also drive such behavior. It is quite another matter to

demonstrate the potentially even superior predictive power of sociocultural factors on such health outcomes (which I expect to find), in studies that statistically model genetic and sociocultural factors (as potentially distal causes) side-by-side in the same sets of equations.

Though challenging, the gains of thinking across biological and cultural levels are multiple. We enrich our theories and understanding of the phenomena at hand—the distress experienced by Indigenous refugees and online gamers in my current research—by building more complete explanations for both their causes and health consequences. Rather than posing at the outset false dichotomies, we are able to identify potential biocultural synergies, like environmentally-driven “epigenetic” patterns of gene expression, which can also be mapped through now known techniques (as I plan to do in my Internet study). Further, we will almost necessarily have to collaborate with people from other fields, expanding our knowledge and horizons in the process. All in all, our research has a better chance of leading to both more valid and also more broadly authoritative results. The latter is not trivial. Relying at least in part on methods and perspectives developed in other fields, our results and subsequent explanations and theories will be framed in ways that can be better appreciated outside of narrower cultural anthropological circles.

How would you respond directly to one potential cultural anthropological or social scientific critique of such an integrative “biocultural” approach?

Some cultural anthropologists fear that incorporating biology into their studies risks reductionism and even racism and sexism. These are fair concerns, given that our disciplinary history is intertwined complexly with colonialist, racist, and sexist agendas, where biological theorizing has been used to attribute fixed and essential identities to colonized peoples, racial minorities, wo/men, and others. However, contemporary biologists are now exquisitely attuned to the manner that biological structures and processes respond flexibly to their environments, as demonstrated in innumerable examples of human neuro- and corporal “plasticity.” As current biology research amply demonstrates, genetic makeup is often less important than how those genes are *epigenetically* expressed (and even programmed) in response to environmental cues. Biological systems, it seems, are just as malleable—and indeed just as complex and unpredictable—as sociocultural ones. As such, biology is no

longer thought of as necessarily underlying and thus constitutive of psychological, sociocultural, or other systems. Rather, our dual biological and cultural inheritances can be understood as complexly interacting systems that mutually constitute each other. As such, a fear of reductionist thinking is no longer a valid justification for avoiding serious engagement with the biological and other natural sciences, as Maurice Bloch eloquently argues in his recent book, released in 2012, *Anthropology and the Cognitive Challenge*.

What is one potential caution you'd have for cultural anthropologists or social scientists considering a biocultural approach?

Don't imagine that incorporating biomarkers into a medical anthropological health study will provide magical solutions to all your analytical and theoretical problems. In fact, the case is more nearly the opposite: you will have more to think about and consequently more problems to solve, as you struggle to make sense of potentially conflicting data. As I suggested above, a biological measure might suggest an alternate health story, but there is no reason to assume a priori that this story should take precedence over one suggested by the sociocultural data.

What is one piece of research (ideally your own) that points to the benefits of such an integrative approach?

I would suggest, first, my recent study of stress telomere shortening among central Indian conservation refugees. I do believe that psychosomatic stress, related to an intricate set of overlapping arousal systems, underlies and thus helps to explain innumerable health problems, as masterfully demonstrated by researchers like Robert Sapolsky, as well as by biocultural anthropologists such as Carol Worthman and her students. Likewise, good evidence suggests that telomeres—termini that cap and protect our chromosomes—could serve as human chronometers. Telomeres erode naturally with cell division and aging, leading some to suggest that their length might be a good proxy for overall health and even longevity. Both stress and telomeres, then, would seem to be “master” systems of explanation that could be seen as revealing and even underpinning a variety of human health processes. However, both psychosomatic stress and telomere length are deeply responsive to environmental cues, leading myself and my collaborators to wonder if the extreme stress experienced by the Indigenous Sahariya featuring in our study

might manifest itself on the cellular and chromosomal level. We demonstrate this to be the case, pointing to the way that both biological and also politically-driven environmental changes in concern propel health outcomes in this non-Western context.

I'd also suggest a few of my recent online gaming papers. In one, my collaborators and I suggest—rather than empirically demonstrate—that interactions between underlying neurobiological and psychological faculties (such as dissociation) and culturally-produced “technologies of absorption” (like video games) together shape positive and negative online gaming experiences. In others, we explore links between stress, consonance with the culturally-sanctioned good life, and problematically distressful gaming.

Stress and telomere shortening in India:

Zahran, S., Snodgrass, J. G., Maranon, D. G., Upadhyay, C., Granger, D. A., & Bailey, S. M. (2015). Stress and telomere shortening among central Indian conservation refugees. *Proceedings of the National Academy of Sciences*, 112(9), E928–E936.

<http://www.pnas.org/content/112/9/E928.abstract>

Online Gaming in the U.S.:

Snodgrass, J. G., Lacy, M. G., Dengah II, H. F., Fagan, J., & Most, D. E. (2011). Magical flight and monstrous stress: Technologies of absorption and mental wellness in Azeroth. *Culture, Medicine, and Psychiatry*, 35(1), 26–62.

<http://link.springer.com/article/10.1007/s11013-010-9197-4>

Snodgrass, J. G., Lacy, M. G., Dengah, H. F., Eisenhauer, S., Batchelder, G., & Cookson, R. J. (2014). A vacation from your mind: Problematic online gaming is a stress response. *Computers in Human Behavior*, 38, 248–260.

<http://www.sciencedirect.com/science/article/pii/S0747563214003392>

Snodgrass, J. G., Dengah, H. J. F., & Lacy, M. G. (2014). “I Swear to God, I Only Want People Here Who Are Losers!” Cultural Dissonance and the (Problematic) Allure of Azeroth. *Medical Anthropology Quarterly*, 28(4), 480–501.

<http://onlinelibrary.wiley.com/doi/10.1111/maq.12116/abstract>

How might cultural anthropologists or social scientists interested in

such an approach get started?

Just one more piece of advice at this point: Reach out and collaborate with outsiders to cultural anthropology. These biocultural problems are too large to tackle all by our lonesome, indeed, too large for any single discipline to solve. Plus, you'll have much more fun having at these problems in good company.

[Jeffrey G. Snodgrass, Professor of Anthropology at Colorado State University, and member of Somatosphere's editorial collaborative, has published widely on caste, performance, and religion in India. He is currently working on two projects. First, he is interested to understand how culture-specific absorptive experiences, achievement motivations, and social interactions contribute to virtual worlds' therapeutic and addictive dimensions. This research has begun with primarily U.S. gamers with plans to extend the project to other parts of the world. Second, in NSF-funded research, he is working to understand how loss of access to forest spaces and resources – for example, through deforestation and displacement from a newly established wildlife preserve in central India – impact indigenous peoples' health and systems of healing. He hopes empirical results from these and other projects will help him fuse insights from cultural psychiatry and neuroscience into more synthetic "biopsychocultural" accounts of mental health resilience. Follow him on Twitter: \[@GodfreySnorgyrs\]\(#\)](#)

["Bioculturalism"](#) aims to get anthropologists and closely-related others talking seriously, and thinking practically, about how to synergize biological and social scientific approaches to human health and well-being, and to what positive ends. It is edited by [Jeffrey G. Snodgrass](#).

AMA citation

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