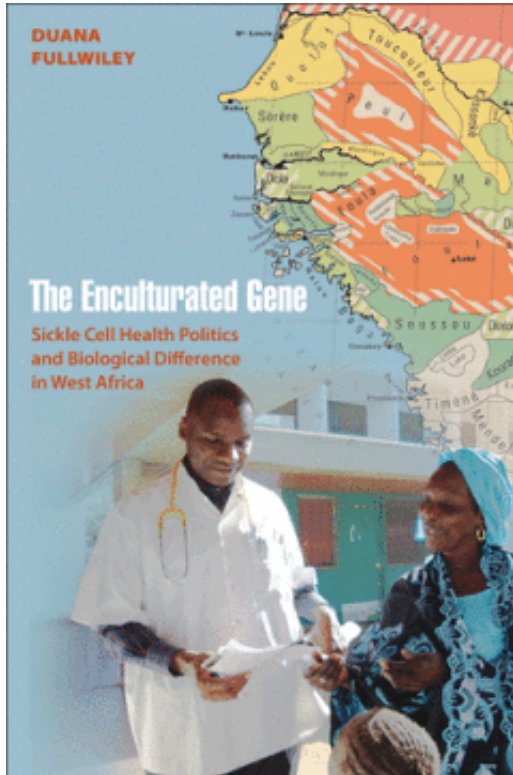


<http://somatosphere.net/2014/10/duana-fullwileys-the-enculturated-gene.html>

## Duana Fullwiley's The Enculturated Gene

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By John Hartigan



[The Enculturated Gene: Sickle Cell Health Politics and Biological Difference in West Africa](#)

by [Duana Fullwiley](#)

Princeton University Press, 2011. 368 pp.

What is the role of cultural analysis in confronting genetic phenomena? Over the past few decades, cultural anthropologists have striven to contest or hold at bay genetic explanations for race, gender, and sexuality. Their analytical approach was to demonstrate the social construction of genetic facts. Often, these contests rehearsed battles that marked the emergence of social analysis, as when Emile Durkheim made the case for the autonomy of social facts by delineating them from biological or psychological dynamics. This stance was strongly reasserted by Marshall Sahlins when, in response to the rise of sociobiology in the 1970s, he

maintained the irreducibility of “a social construction of meaning” to “biological determinism,” (1976: 4) To insist otherwise, he concluded, would result in having “to abandon all understanding of the human world as meaningfully constituted, and so the one best hope of knowing ourselves” (1976: 107). When discussing race, “ideology” was deployed as a counter attack; the insistence on race’s social construction entailed assailing the objectivity of genetic facts, rendering them as largely the products of racial ideologies that informed the work of scientists. But all this eventually became more complicated, first as “biosociality,” via Paul Rabinow (1996), inverted “sociobiology” in calling attention to how cultural identities are formulated in response to medical conditions, and then as claims linked to the Human Genome Project (e.g., “the concept of race has no genetic or scientific basis,” [Craig Venter](#), 2000) generated an array of challenges from certain geneticists.

Duana Fullwiley’s *The Enculturated Gene* offers several formulations of how cultural analysis frames genetic matters. Some of these will be familiar to readers trained in anthropology over the past two decades, but at least one of these formulations heralds a potentially dramatic challenge to the delineation of distinct domains that first allowed the social fact to be established. The work’s strength lies in its framing *the cultural alongside the genetic* without reducing the latter to merely a construct. But it is a struggle to maintain this view, which requires Fullwiley to make a variety of efforts to formulate the analytical ground and objects. The genotypic form in question is the sickle cell allele, “a misspelling in the genetic sequence that codes for the beta chain of hemoglobin” (280). Ethnographically, she presents us with doctors, patients, and researchers in Senegal from 1998, when she commenced her fieldwork, to a final research trip in 2010. During that time, sickle cell shifts from being largely ignored by the government, construed as a genetically distinct “mild form,” to becoming characterized as “severe” and made the focus of more concentrated state public health concern. During that trajectory, the responses of sufferers and their caregivers develop: “In other words, actors affected by the disease (as well as scientists who study it) have both built and lived an ontological reality of mild sickle cell, as a well as the possibility of its double” (266). This can be a matter of contesting norms for healthy conditions or even affecting the expression of the disease through ingesting leaves from the medicinal plant, *Fagara xanthoxyloides*, which may play a role in making “sickle cell mild in the first place” (78). The variable responses to a disease have long been a comfortable domain for framing and asserting the relevance of culture to genetics and biology. The bolder set of claims about the role of culture—suggested in the book’s title—seemingly has to vie against these formulations in order to come fully into view.

Predominantly, Fullwiley analyzes the work of culture in two broad, familiar

registers: as shaping researchers' views of the disease, particularly in relation to race, and in peoples' capacities to live with sickle cell. These two are in ongoing dialogue, and both may be construed as constructs: "Senegalese sickle cell anemia" (7) was produced by French doctors retracing colonial imaginaries via an enduring commitment to finding race naturally inscribed in bodies and territories; as such, "its discursive effects helped to shape people's intersubjective modes of self-care and self-governance," thus constituting a culturally "lived experience with the disease" (7-8). This book is primarily an ethnography of the latter: "Almost daily I witnessed people go back and forth between frustration and hope in managing their disease, and more specifically in garnering the necessary resources to live relatively normal lives" (11). Fullwiley documents how "people with the disease...deploy multiple representational strategies that both blended and held separate ideas" (27), something that culture has long worked well to frame and explain.

But what of the disease "itself" or life "itself"? These both gesture toward the genetic and biological aspects of "the construct of mildness," "born both of geneticists' ideas about Senegalese biological capacities...and of patients' informal economies," "improvisational yet effective" (xx). Initially, this domain is merely refractive for culture: an "ethnographic engagement with sickle cell in Senegal provides an *aperture* on the social forces that condition disease embodiment, but that also highlight the possibilities for how power shapes people's subjectivities across the North-South divide" (xxii). *The social is glimpsed through the genetic*. But her framing of "ideas of difference that cohere through people's imaginaries about belonging"—stock concerns of cultural anthropology—is quickly followed by an acknowledgement "that biogenetic differences exist" (xviii). The latter, Fullwiley knows, must factor into this account. But when the focus falls on such form of difference, it's easy to lose sight of culture altogether: "in conceding that health outcomes may be linked to some aspect of genetic variation exhibited between people classed within ethnic and national lines, we must also ask what is lost when we focus on small, highlighted gene differences that are in no way generalizable to the majority of sicklers in these nationally named cohorts" (17).

In response to this loss of focus, sometimes Fullwiley argues for a modest role for culture, imagining how claims-making would shift "if an analysis of sickle cell biological difference in West Africa took seriously the concerted efforts and cultural practices the sickle cell patients themselves have put into surviving in the face of economic scarcity" (xviii). Yet in this moderate stance she contends with the tendency of genetics to block culture from view entirely: "genetic framings often *mask* the historical and cultural experiences that may lead to a given health outcome (19)." At times, this feels like a zero-sum game: seeing the cultural depends upon bracketing off the genetic, because of the capacity of the genetic, conversely, to block

culture out entirely. Patterning at one level precludes an attention to patterning at another level. In writing to “guarantee that affective underpinnings of health outcomes, constellations of poverty, and material inequality are not *blotted out* for good in our thinking about biological causation” (20), Fullwiley expresses the desire “to get us beyond these modes of query,” which entails “*moving past* an emphasis on filling quantitative gaps in genetic knowledge” in order “to begin to ask how human biological differences get parsed in the first place,” (18). In such moments, culture displaces an attention to genetics rather than analytically holding both in the frame simultaneously.

Momentarily, she settles on this formulation: “Although the Senegal haplotype (like the ‘Arab-Indian’ haplotype) is ‘strongly associated’ with a high expression of persistent gamma globin (a constituent element of fetal hemoglobin) into adulthood, the causal link between the two remains an open area of research” (15). Here culture becomes a catchall, hinting at additional factors (political, economic, environmental) that make this link irreducible to genetics alone. Then Fullwiley makes another gambit, one that will be familiar to medical anthropologists, positing a perspective in which a genetic condition is neither universal nor uniform: “The larger point to be made here, of course, is that there is no singular disease called sickle cell anemia in the world today” (13). Yes, certainly, but in this case as in most, diseases do cluster; they involve patterns, at the genetic and cultural/social level.

So Fullwiley specifies further: “At most there are near universal terms of disease entities that are nonetheless made and enacted differently in different places through people’s diverse historical engagements with pathology, concepts of human distinction, global standing, economic well-being, and social structures as basic as kin ties that allow one to get by” (13). *Here, culture is just a compilation of differences in a non-biological register*; some are more consequential (historical, political) than others, but none have much direct impact on the genetic. Framed as a construct, we get the following: “a putatively ‘simple,’ ‘single gene disorder’ becomes infinitesimally layered when analyzed as a lived cultural construct,” and then all disease is “more than their genes” (20). Is this what cultural anthropologists have to say to geneticists and to our respective audiences? That it’s all a matter of infinitesimal layers of unique differences? What does culture amount to, and what does cultural analysis add besides a string of modifiers to remind researchers of the complexity and contingency of their subjects? Here it seems to serve principally as a reminder to practitioners who perhaps don’t know or forget or are literally unable to see these social dimensions. After all, this has been the challenge of social analysis since its inception—to get people to see forces that are as “invisible” as the air we depend upon and breathe.

But the book's title suggests something more: "enculturation" as a fused set of frames, whereby culture shapes the genetic—perhaps just its expression, but maybe more profoundly, as well. This asserts a greater role for the work of culture than is typically evident in constructionist arguments. "It is in this mix of life and lived experiences that the Senegalese population variant of sickle cell has been *made to correspond to a social context* where people find ways to live better than expected. In this process the gene itself has become *enculturated*" (20). Fullwiley pulls back a bit at this moment and offers instead: "enculturation, as the vital adaptation techniques that social groups fashion for themselves, involves *making sense of and living with* specific referent objects," (20). Rather than transforming the genetic, it seems we're back to Sahlins and meaning. But another elaboration follows:

"The referent in this case is *the sickle hemoglobin genetic sequence*, which becomes enculturated as both patients and biomedical practitioners *engage* its supposed *dictate* of fate and subsequent *constraints* on (or chances for) living a normal life" (20).

Fullwiley's formulation here attends to the constraints and potential of human plasticity, with the genetic as marking a limit point to what can be fully plastic and the cultural as the domain that acts in focused ways on that plasticity. How these relations are transformed over the long term is the subject of topics such as domestication, on one hand, and evolution on the other. The line between is hardly absolute: culture shapes genomes, but (channeling and paraphrasing Marx) not entirely as we please, always "under circumstances existing already, given and transmitted from the past," and with a reminder that "the tradition of all dead generations weighs like a nightmare on the brains of the living" (1852). This is not yet the domestication of genes in everyday life, but we can glimpse it from here.

Consider the following passage, as an opening emerges here for agency of the gene:

"When *the sickle cell gene in Senegal mediates* social relations that range from postcolonial engagements about science equity to public health funding set by North- South donor priorities, when patients conjure healing strategies that range from silencing pain to an emphasis on normalcy at all costs, when the bounty of biomedicine merely consists of folic acid, painkillers, simple surveillance, and the doctor's touch, and when Senegalese traditional plants are believed to curb sickle cell crises, and perhaps *incite the biological production of fetal hemoglobin*, people

absorb these points of *social fact*, in body, society, and mind, and *express an illness result in the process*. This is *sociosomatic genetics*, and it is made possible when *people enculturate sickle cell's effects* through soma and psyche in a societal context, in this case, of material scarcity," (21).

In this fascinating rendition, Fullwiley draws the gene into view and frames certain biological processes but then returns us principally to its "effects" or expression. She construes this as a "dissolution of the nature/culture split" (21), which matters for constructivist arguments more than addressing geneticists. But more fundamentally, it is a challenge to the division between "artificial" and "natural" versions of selection by which we understand evolution. We know culture shapes genomes (Laland et al., 2010). But generally this is a matter of deep-time; can this knowledge be borne out or embellished via ethnography? Would it be at the risk of reintroducing evolution into cultural accounts?

Evolution is an anxious matter for social analysis, which, since its inception, has largely aimed to bracket off evolutionary explanations as inherently biologically reductivist and inevitably simply reiterating Social Darwinism. Nicholas Wade's recent book, *A Troublesome Inheritance*, which has generated heated commentary regarding its claims about race, is as much animated by a critical assertion that social scientists, in regarding modern humans, believe evolution stopped a long time and no longer pertains. Whether this assertion is mostly a caricature or fairly accurate, I'm not sure. But it does help frame the challenge of Fullwiley's enculturation argument—in opening up the genetic this way we no longer can keep evolutionary frames at bay, construing them simply as ideological representations or relevant only to nonhumans. We are going to need new ways to think about plasticity and fixity—"culture and nature" just won't do. Perhaps the greatest value of Fullwiley's ethnography is articulating this: "At stake is our willingness and, in some sense, disciplinary ability, to see that cultural practices and genetic effects are attached before birth" (19).

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