

**Genetic Admixture, Diabetes and Mexicano/a Ethnicity:
How Inequality Gets Into and Out of Genetic Science**

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At 7am in a rural **South Texas** community, two Mexicana research staff and I take a 40 minute ride into the grapefruit fields looking for Sr. Lopez. A day earlier, Sr. Lopez had agreed to fast for 12 hours in order to have his blood drawn at work. Following back roads that skirt the southern most edges of the US Nation State, we find Sr. Lopez with dozens of others, working the harvest. Four viles of blood are drawn, placed in an ice chest, thank-yous and a taquitos exchanged and we were on our way. The blood will be used as part of a multinational study into the genetics of type 2 diabetes.

It is customary in such stories, to detail the means and measures through which DNA donors like Sr. Lopez either receive or are denied the benefits of their contribution to the outcomes of such scientific pursuits. But this criticism, while certainly important, arrives decades after the sociocultural consequences have begun. Examining closely the production of diabetes knowledge will illustrate how and at what sociopolitical cost a disease comes to be identified with an ethnoracial group.¹ Specifically, attending to the use of Mexicana/o DNA in one scientific finding, reveals and suggests productive frameworks for getting inequities into and out of genetic science.

Part I: Making Diabetes Knowledge

In 2000, “Sun Co.” made international news **headlines** in articles reporting the “discovery” of a combination of genes that confer susceptibility to type 2 diabetes. Headlines appeared in the Chicago Tribune, USA Today, New York Times, Japan Times, Times of London, Wall Street Journal and was even covered by Parade Magazine, to name just a few. “Inherited Gene Tied to Diabetes in Some Groups,” read one headline. The polygenes as they are called, were discovered by analyzing the genetics of Sun County Mexicanas² and were announced in the journal, *Nature Genetics*. The report is significant for several reasons. First, it is the culmination of years of collaborative work by researchers from Harvard, Chicago, Texas, the NIH, and 50 other corporate and academic partners from three continents. Second, the discovery of genetic contribution to type 2 diabetes was the first published report of a genetic association with disease susceptibility for a complex disease, like diabetes, with a rich environmental etiology,¹ namely, excess caloric intake and a sedentary lifestyle.

Since its publication, the paper has been cited 575 times at last count, and at least half of the collaborating researchers, have been attached to numerous other publications pertaining to conditions as varied as asthma, autism, depression, and addiction. Researchers are accumulating fame both for the methodological approach, combining wet and dry lab, genotyping and quantitative analytics to complex disease, as well as topically, the finding of a genetic contribution to a chronic disease. You see, the holy grail, now that the genome has been mapped, is to find someway for it to live up to the promises of the Human Genome Project, namely, targeted physiological pathways for drug development – preferably with built in ethnic specific marketing mechanisms.

Perhaps parenthetically perhaps not, a few months after this paper was published, the US HHS released a report showing that diet and exercise were more effective in treating diabetes than drug therapy, a report that received no news coverage and only the standard pick up in academic journals. To examine the social and cultural implications of this discovery, I turn now to the geneticization and racialization of type 2 diabetes.

Genetics

In the late 1970s, the screening of Mexicanos/as for diabetes began as a statistical sampling of selected *colonias* (unfinished subdivisions, colonies, settlements) in three rural communities along the **Texas/Mexico Border**.

¹ I use the term “ethnoracial” to connote the multiple ways social groupings and biological groupings are simultaneously manifest in the scientific situation at hand.

² I use the term Mexicana because women make up the vast majority of research participants at the genetic field office in Sun County and because the field office staff are all women.

“The question was; How frequent was diabetes?” recalls Carl, the University of Texas professor and director of the operation. “We went door to door in randomly selected blocks in each of these three towns and enumerated everybody in the household (as) either diabetic or non-diabetic.” The community was chosen because they could be conveniently sampled, Carl explained, and were presumed to be 98 percent Mexican American. “The other two percent,” Carl noted, “probably answered the Census wrong.” From this initial survey, Carl’s team invited every diabetic and all of their relatives to their office for a complete physical exam. Carl recalled, “So we got these beautiful pedigrees based upon carefully collected blood samples. It was almost like a National Geographic expedition.”

Thousands of migrants, immigrants, and Mexicana/o nationals who work and live in “Sun County” or the corresponding colonias and pueblos across the border have donated their DNA to Carl and through him to a multi-national genetic epidemiological research collaboration.

Carl is a geneticist who has based his entire career on the research derived from the DNA from Sun County Mexicanas/os. The polygene “discovery” is at the forefront of studies into the Thrifty Gene Hypothesis advanced by James Neel in 62’, 82’, and 98.’ Neel speculated that diabetes is an evolutionary phenomenon of environmental origin and invited anthropologists, geneticists and biologists alike to join in the nightmare of proving his hypothesis in the face of overwhelming environmental etiological evidence. And so for nearly 40 years scientists have tried, to no avail. But along the way they have created powerful scientific mythologies just the same which take it as given that, ‘formerly primitive populations have undergone a domestication of lifestyle and evolved a genetic trait like diabetes as an adaptation to the excesses of modern living,’ (Zimmet 2000). Basically, the story goes, the metabolism of our ancestor hunter gathers evolved under the erstwhile conditions of feast and famine. The emphasis has been on finding the genetic traits that could account for the metabolic condition while the excesses of modernity and conditions of feast or famine have been treated as simple evolutionary history, albeit a more recent one for Aborigines, Native Americans and Mexicanas/os than for Europeans. (I will leave the developmentalist notions of evolutionary differences implied in this, unmarked for now).

Reflecting their various disciplinary backgrounds, the researchers will explain the use of Mexicanas/os’ DNA in a multitude of ways. They say that the rationale for the use of ethnically and racially classified populations in diabetes research has little to do with the population per se but of sampling convenience. One molecular biologist remarked, “We’re not going to learn everything we need to know about the genetics of type 2 diabetes from our studies of Mexican-Americans, but it’s a useful population in which to work.” *Epidemiologists* explain that some populations are especially informative for a particular trait, like diabetes. When asked why low-income Mexican Americans were sampled in a randomized way, another scientist explained, “That’s where the highest rates of diabetes are... and lower-income Mexican Americans have a higher rate than the suburbanites. It’s a huge public health problem.”

When asked what the specific advantages are to sampling Mexican-Americans or other populations, *geneticists* reply that the use of populations is a means to control for the vast genetic variation that exists between and within human populations. As one scientist explained, we may misinterpret our findings because we assumed that a marker was *common in that population and we didn’t know it was common because we used the wrong allele frequency estimates from a different racial or ethnic group...* “ This of course requires researchers to rely upon scientifically accepted population genetic profiles. A population profile is an accepted genetic characterization of a given population. And this is where the real problems begin.

Based upon these assumptions, the NIH narrates diabetes as something that **runs in Mexicano familias**. For example an NIH website reads,

A family history of **diabetes** increases the chance that people will develop **diabetes**. The San Antonio Heart Study showed that the prevalence of **diabetes** among Mexican Americans who have first-degree relatives (e.g., parents) with **diabetes** was twice as great as for those with no family history of **diabetes**.

As an anthropologist, I raise my eyebrows because language, diet, and wealth are also inherited and, if we simply substitute any of these with the words diabetes we can begin to see the weakness in this powerful narrative of disease causality. And **so it goes**,

A family history of **wealth** increases the chance that people will develop **wealth**. The UC-Irvine Common Sense analysis finds that the prevalence of **wealth** among Mexican Americans who have first-degree relatives (e.g., parents) with **wealth** was twice as great as for those with no family history of **wealth**.

This wouldn't be so cheeky if there weren't so much human and financial capital, not to mention a chronic epidemiological problem, at stake.

A short primer on Diabetes

Diabetes is not one disease but many. While most popular associations of diabetes include injections of insulin, over 90 percent of all diabetics experience non insulin dependent/late onset or type 2 diabetes. Unlike type 1, type 2 diabetes is characterized by the affecteds' resistance to the glucose lowering effects of insulin. Type 2 diabetes most often develops in people over 40. The World Health Organization has called diabetes an emerging epidemic with over 16 million people affected nationally and millions more in the rapidly urbanizing southern hemisphere and China. A US Centers for Disease Control and Prevention (CDC) publication labels Diabetes: A serious Public Health Problem and notes that diabetes is the seventh leading cause of death among people in the United States, sixth, if it is combined with other cardiovascular diseases. According to the CDC, by 2025, 270 million people worldwide will have diabetes.

Chicanos/Latinos/Mexicanos (hereafter simply Mexicanos), of course, have known that diabetes is a problem for quite some time. Azucar en el sangre, is part of many family stories, including my own. The National Institutes of Health reports the following for "Hispanics":

- Of the 30 + million Hispanics about 2 million had been diagnosed with diabetes.¹ A third of all diabetics are undiagnosed which means that about 10 percent of all Hispanics have diabetes
- For those age 50 or older, about 25 to 30 percent have either diagnosed or undiagnosed diabetes.
- Diabetes is twice as common in Mexican American and Puerto Rican adults as in non-Hispanic whites.¹
- As in all populations, having risk factors for diabetes increases the chance that a Hispanic will develop diabetes. Risk factors seem to be more common among Hispanics than non-Hispanic whites. These factors include a family history of diabetes, gestational diabetes, impaired glucose tolerance, hyperinsulinemia and insulin resistance, obesity, and physical inactivity.

As these figures indicate, it is hard to find a presentation, popular or scientific, about Type 2 Diabetes without a discussion of its differential impact on people of color. CDC bulletins, journal articles and patient magazines make the obligatory linkages between diabetes and ethnicity, and in many instances to Chicano/Latinos specifically. For example, in the September 2000 issue of *Newsweek* magazine, the cover story entitled, "An American Epidemic: Diabetes," tells the story of the rise of Type 2 Diabetes among Americans. It featured (in the online version) a photograph of **Yolanda Benitez**, a middle aged woman with diabetes. The photo shows Sra. Benitez heating a tortilla on a cast iron comal.—The main health concerns for people with diabetes, as the story of Se★ora Benitez illustrates, are the complications. The NIH estimates the costs of diabetes at around \$100 billion annually if the costs of lost wages and disability are factored in to the health related ones.

In spite of the NIH's endorsement of the genetics model and the pervasiveness of diabetes framed as an ethnic disease, race and ethnicity have been by no means been uncontested in biomedical literature. For

example, over a decade ago anthropologist Robert Hahn and colleagues (1992) showed that there was inconsistent coding of race and ethnicity of infants at birth and death casting doubt on nearly all ethnic and racial labeling practices. Disproving the race blind mythology within medical practice, Schulman and collaborator's (1999) landmark study confirmed that race and sex independently cloud physician's judgments when referring men and women of color for cardiac catheterization (622). These and similar findings are corroborated by the widely publicized Institute on Medicine's report on Health Disparities (2002). On the genetics front, over the past six years there have been a steady stream of editorials and special commentaries – some by social scientists and some drawing upon the American Anthropological Association statement on Race - reiterating that race is a social construct and not a biologically meaningful taxonomic system, (Nature Genetics 2000; Goodman 2001; Schwartz 2001; Duster 2001; Chaturvedi 2001; Anderson et al 2001). To argue that race as a social construct is not the same as arguing for a race-blind proposition. Rather, these editorials have attempted –unsuccessfully - to halt the use of census categories as proxies for biological differences between persons attached with census labels.

In an era where genomic medicine is now being introduced into Medical School curricula, these debates are increasingly relevant. (And institutionally, there is a cadre of new basic scientists trained during the rise of the Human Genome Project searching for ways to translate their genetic training into lifelong careers.) For example, a meta- analysis I conducted of the abstracts from the American Diabetes Assoc scientific sessions of 1998, 1999 and 2000 shows that the use of populations in diabetes research jumped 15% and that there was a 36% increase in the overall use of data which researchers felt compelled to mark with ethnoracial labels, from 191 uses to 305 uses, (Figure 1). The greatest increase in ethnoracially labeled populations occurred among geneticists whose use of such labels jumped 60%, followed by epidemiologists whose use jumped 30% over the three years surveyed.

Aboriginal, African, African American, Afro-American, Afro-Caribbean, Alaskan Native, American, American Indian, American White, Amish, Anglo, Arab, Ashkenazi Jewish, Asian, Asian American, Asian Indian, Bedouin-Arab, Belgian, Black, Black African (French) Brazilian, British, British Caucasian, Canadian, Caribbean Latino, Castilla, Piura (Peru) Caucasian (White) Cherokee, Chilean, Chinese, Cunumbuque, Lamas, San Martin (Peru) Danish, Danish Caucasian, Desano (Amazonian Jungle, Colombia) Dominican, Dutch, East Canadian First Nation, Eastern , European, Egyptian, "Ethnicity", European, Europid, Ethiopian, Fijian, Filipino, Finnish, First Nation, French, French , Canadian, French Caucasian, German, Ghanian, Hispanic, Hispanic American, Hispanic Black, Hispanic White, Huaras, Ancash (Peru) Icelandic, Indian, Indian Asian, Ingeneria, Urbanization, Lima (Peru) Islamic, Israeli Arab, Italian, Japanese, Japanese-American, Japanese-Brazilian, Jewish, Korean, Kuwaiti, Latin , Latino, Lebanese, Malay, Maori, Mapuche, Mauritian, Mexican, Mexican-American, Mexican-Born, Montana/Wyoming, Muslim , Muslim/Bedouin, Native, Native American, Native Canadian, Native Hawa2an, Nauru, New Zealander (European Descent) Nigerian, Non-Caucasian, Non-Hispanic, Non-Hispanic African-American (Virgin Islands) Non-Hispanic , lack, Non-Hispanic White, Non-White, North African, North American, North Dakotan, North European, North , European Caucasian, North Indian, North Indian Asian, Norwegian, Ontario, Canada, "Other", Pacific Islander , Pakistani, Pima, Pirutapuyo (Amazonian Jungle, Colombia) Polish, Portugese, Puerto Rican, "Race", Romanian, San Antonio, Sardinian, Saudi, Saudi Arabian, Scandinavian, Scottish, Singaporean, Slavic, South Asian, South Indian, South Indian Asian, Spanish (Mediterranean Caucasian) Swedish, Swiss, Taiwanese, Tarapoto, San Martin (Peru) Tohono O'odham, Trinidad, West Indies, Tukano (Amazonian Jungle, Colombia) Turkish, United Arab Emirates, United Kingdom , United Kingdom Caucasian, United Kingdom Origin (In Australia) United States, United States , lack, United States Caucasian, United States White, Vietnamese, Wayko, Lamas, San Martin (Peru) West African , Ancestry, West Indian, Western, Western (French) Western European, White, White Caucasian, White European, Yemenite Jew.

Figure 1. Complete list of population labels used in ADA abstracts 1998, 1999, 2000

Most interestingly anthropologically are that there are 30 different labels for “white” populations, eight for Chicano/Latinos, and 7 for African Americans and so on. Continents, nations and religions are also represented including Jewish, Islamic, Muslim, African, Asian, Amish, French, German, Japanese and an archaic form of Caucasian, Europid. The point of course is that the labels for global populations are imprecise at best and meaningless in biomedical terms at worst. It is curious that at the moment “race” is everywhere pronounced scientifically dead, researchers need population based specificity in order to advance their research agendas.

Part II: Biological Subjectification and the Re-Making of the Immigrant Menace.

When we step away from these debates, and situate them within the social history and life conditions of the Mexicana DNA donors, a different but troublingly familiar story emerges. It is a story that draws upon notions of population purity and of the dangers of immigrants to Anglo society. Of the cultural constructs of purity and danger, Mary Douglas (1966) writes, “Defilement ...cannot occur except in view of a systematic ordering of ideas,” (1966:54). I wish to suggest that the emergent ideas about the genetic causes of diabetes are part and parcel of the processes of subjectification and population stratification between Anglos and Mexicanos along the border and elsewhere. Let me explain.

The science behind this assertion that Mexicanos/as have an increased susceptibility to type 2 diabetes was derived from the bodies of Mexicanas/os of “Sun County,” the (fictitious) jurisdictional name³ of the Texas side of this area. Sun County is one of the poorest regions in the US and is known as one of the roughest drug portals on the US-Mexico border, (coca, marijuana, peyote). It is also known for its close multigenerational families, generous hospitality, and indifference to the formalities of border crossings reflecting the persistent tenuousness of the US nation-state along the border and elsewhere (see Acuña 1981; Almaguer 1994; De Genova 1998; Montejano 1987). The US Census figures estimate that half of Sun County’s population lives in poverty and that as much as 69 percent of the county’s children do (US Census 1997). Per capita income is a 3rd of the state average, 20% of Sun County are unemployed. With fewer than 1 direct care physician for every 3400 people – the state average is 1:661, being seen by a doctor is a luxury for most. A woman must leave the county to find an ob/gyn.

The US/Mexico border is also known as a zone of often violent conflict and a region that has endured two wars, three if the fallout from the US Civil War is included (Montejano 1987). The region also has a long history of Anglo domination of purportedly inferior Mexicano/a peoples. In a poignant depiction that brings us to the present, **Jose Limón** summarizes the transformation of the political economy of Texas thusly:

(Anglo) Americans came to a new environment to create a new politically and militarily sanctioned culture and economy. The latter would be based on commercializing south Texas into a major agribusiness sector responsive to the demand for food in industrializing America. Based on the “appropriation” of mexicano land, more often by foul than fair means, this impoverishing social imposition on mexicano society continued to be ideologically sanctioned by the same continuing racism, religious prejudice, and linguistic xenophobia that had been introduced with the (Mexican American) war. [de Leon 1982, 1983; Montejano 1987 in Limón 1994:24]

It is in this historical space, under these political circumstances, that Mexicana/o DNA donation and the knowledge derived from our DNA must be understood. That Mexicanas/os are now used for genetic research, is also, it would seem, an almost predictable progression from our use as cheap labor, as Other whose rights to own land or vote varied according to Anglo needs for land and political power, and as national enemy in the context of war and capitalist expansion along the border over the past century and a half. But this is neither conspiracy nor overt racism. The researchers in Sun County care deeply about their community and practice their science in strict accordance with the human subjects protections required by funders and the state.

However, if we are to understand the consequences of the genetics of diabetes, how it troubles the boundaries of science and society, the local context of DNA acquisition must be considered. But to include the sociohistorical context of diabetes genetics knowledge production makes a raft of troubles for the humanistic rhetoric of screening, treating, preventing or curing type 2 diabetes, rhetoric that appears in every article and grant application related to diabetes genetics. For example, Mexicanos/as like Sr. Lopez, the grapefruit harvester from the opening vignette, are not willing participants in research. This does not mean they are screened against their will, rather, that participation in research screening for a debilitating condition that occurs

³ The protection of the research subjects mandates that the exact location and identities of those involved in the diabetes enterprise remain anonymous in this thesis.

in a space of 150 years of political and economic subjection, when no viable alternate means of blood glucose monitoring surveillance is available, can hardly be deemed voluntary. Who would *not* participate in a research project if it was the only way to gain life saving knowledge for you and your family.

But the context of DNA sampling also matters if we are to understand the ways genetic sciences elide etiological theories of diabetes that point toward the social context and life conditions of DNA donors and other impacted groups. Though there is not time to argue it fully here, the incidence of diabetes in the Mexicana/o populace must be viewed as the embodied multigenerational expression of the national, political and economic transformations on the border over at least the last three decades; transformations that themselves reflect new regimes of labor control and the deployment of new production technologies⁴ as well as enormous environmental changes that such transformations entail. No evolutionary theory supports genotypic transformation within a 30 year let alone even 300 year period. It doesn't work that way.

Public health researchers, not surprisingly, do take context, life conditions and political circumstances seriously. Homedes and Ugalde in the December issue of the American Journal of Public Health note that the border's 11.5 million people live with more than their share of environmental pollution, hepatitis, TB, and 3 times the national rates of seropositivity. Animal control, traffic accidents, workplace injuries, salmonella and a host of other conditions flourish. Or as one Sun County public health worker complained of the ignorance of Anglo health professionals, "Es que, people are always saying that we should exercise more. But where are we supposed to do that? The roads aren't safe to walk on, snakes and dogs are everywhere, and for much of the time it is too hot to be outside." (Walmart is the largest air conditioned space within an 85 mile area.) Further, it is widely understood by social epidemiologists that "socioeconomic and racial/ethnic disadvantages affect all forms of disease; all behavioral, psychosocial and environmental risk factors producing diseases; and also (affects) access to the most appropriate and effective forms of medical care," (House and Williams 2003: 122). Keeping this alternative framework in mind, let us revisit the scientific rationale for the use of Sun County DNA.

Based largely on Carl's sampling enterprise, scientists consider Mexicanas/os as a sufficiently biologically informative population group so as to merit DNA sampling for the past 20 plus years. Recall that the community was selected for its presumed ethnic homogeneity. However the homogeneity of Sun County Mexicanas is not a simple issue.

On the causes of diabetes, the NIH website reads;

Having American Indian or African genes (populations with a high prevalence of diabetes) is also thought to be a factor that causes the higher rates of diabetes in Hispanics. Hispanics, like all populations, inherit their susceptibility to diabetes from their ancestors. Hispanics have three groups of ancestors--Spaniards, American Indians, and Africans. Both American Indians and Africans have high rates of diabetes

Recall that scientists state that the use of Mexicanas/os in Sun County helps limit the amount of genotypic information through which they must sift. They also explain that this enables the comparisons of established genetic admixture estimates with the genetic patterns found in the Sun County DNA data sets. Admixture estimates are central to the increasingly popular susceptibility models crafted by the scientists within the diabetes enterprise.

The complicated model for the polygene requires heterozygous haplotypes, that is, the interaction of two versions of the same pattern of genetic material in order to confer susceptibility. The heterozygosity is important, say the scientists, because this model of inheritance is presumed to be the result of ethnic admixture -

⁴See Montejano (1997), *Anglos and Mexicans in the Making of Texas, 1936-1986*.

- one part from the Mexican American's Asian-Native ancestry and the other from the "Spanish-Caucasian."⁵ The susceptibility profile is common, 14% in Mexican Americans, hypothesize researchers, and uncommon in Finns and Germans 4% because the allelic frequencies of the "Caucasians" reflect homozygosity more often than the heterozygosity required for the diabetes causing affect.

Bracketing for now the not so subtle degeneracy trope this model resurrects, what does all this mean? It means that by comparing the expected inheritance patterns based upon Mexicano/a admixture with those found within the sampled group establishes a population's purity. However, in this case, the purity in question is the purity of the admixture. Thus, data set purity references a kind of population homogeneity on the one hand (Sun County Mexicanos are like all Mexicanos) and heterogeneity on the other (Mexicanos are genetically comprised of more than one ethnic group). At the root of this rationale, then, is the idea of a pure Mexicana/o.

Admixture, Mongrels, and Half Breeds

Admixture narratives have a history. Menchaca's (1993) analysis of federal and state racial laws from the 19th to the mid 20th century showed that particular legal statuses and discriminatory treatments were congruent with the color coding of Mexicans based upon our Indian ancestors. Similarly, Horsman's (1998) analysis of the period leading up to the Mexican American War, 1830s – 1840s, showed that beliefs in Anglo-Saxon superiority were used to explain Anglo successes in the northern Mexican territories. Dispossession, the taking of land from Mexicanas/os, was justified on account of the inferiority of Mexicans as a weak race who, "like Indians, were unable to make proper use of the land . . . because they were a mixed, inferior race with considerable Indian and some black blood" (Horsman 1998:150). Thus, to understand the region's Anglo Mexicana/o relations we must understand the long-standing "problem" of Mexicana/o Indian ancestry.

While some have argued that old tensions based upon the early hatred and suspicions of the Mexican American War have transformed into a Texan Mexican reconciliation, (Montejano 1987: 297), there is ample evidence that Anglo-Mexicano relations are still inflected with racialized fear. For instance, contemporary ideologues draw upon the idioms of inferiority in anti-immigration rhetoric. In a 2004 issue of "Foreign Policy," the Director of the Harvard Academy for International and Area Studies, Samuel Huntington wrote, "In the final decades of the 20th century, the United State's Anglo-Protestant culture and the creed that it produced came under assault by the popularity in intellectual and political circles of the doctrines of multiculturalism and diversity," (32). Huntington's widely debated piece entitled "The Hispanic Challenge" paints an alarming picture of the dangers of Mexicans in the US. The rhetoric is disturbingly consistent with the earlier historical periods. Hispanics are establishing "beachheads," "failing to assimilate," and exhibit a "contempt of culture." Hispanics lack ambition, have little use of education, and increasingly "marry each other," (37).

Thus, to understand the implications of the diabetes genetic research enterprise requires the acknowledgement that the selection and sampling of Mexicanas for diabetes genetic research occurs in a region whose social history is freighted with racialized violence and where nativist concerns of Mexicanas/os persist. Importantly, Anglos take the threat seriously personal. For example, in some parts of the US, Mexican immigrants are rhetorically held up as responsible for Anglo health suffering. "Can't afford medical care? Thank an illegal alien," reads one bumper sticker on an anti-immigrant website. "Illegal immigration handicaps our nations' medical providers," reads another. Such slogans are emblazoned on bumper stickers and t-shirts that are sold along with more violent ones depicting Mexicana/o immigrants in the sights of rifle crosshairs or those that read, "50 Caliber Border Control" that depict the cross hairs of a rifle. The medical suffering slogans depict the twin dangers of and toward Mexicanas/os by an image of a single heart beat EKG motif followed by a flatline that underscores the threat.

A further instance of Mexicanas/os as biosocial threats to Anglo society includes California's (2003) Proposition 54, which would have nearly eliminated noting ethnicity from a vast array of public records. Prop

54, was defeated two-to-one because as one expert on National Public Radio said, ‘We need to be able to trace the heritability of diseases by ethnicity.’ He could have said, ‘To trace the unequal exposures to toxics and workplace hazards by ethnicity, the unequal access to healthcare by ethnicity, the unequal health impact of poverty and discrimination by ethnicity.’ But he didn’t. He said “heritability,” which is code for biology if not genetics specifically. It is in this historical space, under these political circumstances, that Mexicana/o DNA donation and the knowledge derived from their DNA must be understood.

So, then does this science create a biological race out of Mexicanos? Yes and no.... and that is really not the point anymore. In a process I call “bioethnic conscription,” by selecting Mexicanos for this research, the conditions of a DNA donors’ life, those events that shaped their physiological condition and the social and political history that attached itself to their lives in the form of an ethnic identity, are deployed in service to the biogenetic disease enterprise. Recall that Carl’s sampling efforts were explicitly designed to target Mexicana/os, that type two diabetes is enframed as a racialized disease, and that geneticists explain the increased susceptibility in Mexicanas/os to our degree of ethnic admixture. It must be noted that it is not “(R)ace,” the fictive biological concept that is being conscripted. Rather, it is the social and political conditions that configure donors’ bodies as different, in this case “98% Mexican American” that are conscripted into the diabetes genetic enterprise. The social configuration of Mexicanos, as distinct from other social groups, (most notably Anglos in the Southwest), is thus drafted into the material and symbolic service of the biogenetic enterprise as a necessary part of preparing diabetes knowledge. Further, by using “Mexicano” as a fixed category and not one attached to specific social conditions, researchers and consumers of such knowledge reiterate biological difference and thus construct Mexicano as a biological racial category.

More troubling is that in using racially identified DNA in this manner, researchers produce knowledge that conceals the very possibility that health disparities could be the result of experiences of racism, of differential access to resources, of exposures to socioeconomic distress, to hunger or to housing insecurity. As Jonathan Kahn argues of the case of BiDiI, health disparities are now transmuted into genetic differences writ large, (Kahn 2006). This leaves us with no recourse but to wait for a drug marketed to – because specifically formulated for – racially defined groups. The very public debates about health disparities, life expectancies and social equality are erased by the powerful authority of genomic science for which only the individual, market, and private response seems possible.

What To Do?

Is there a way to avoid the always already creation of scientifically validated biological difference which systematically conceals social inequality? Fortunately, yes.

- 1 - Policy makers and consumers alike must examine the production of racialized science carefully, not just the final product and certainly not its embellished representations in the press.
- 2- When race is used as a fixed variable bearing no connection to lived conditions of bodies in context, researchers should be enjoined by funders to direct energies to discover the biological consequences that are the result of different social conditions, not different biologies typologically marked by ethnoracial labels.
- 3 - Informed consent is not enough. Researchers will accrue tremendous rewards for their data sets and publications long before a drug is developed, therefore universal health care access should be a condition of participation in biomedical research.
- 4 – The social distance between the laboratory and the street should be eliminated. Different kinds of science should be nurtured and community leaders and those that work with them should direct health disparity research trajectories.
- 5 – Health disparities are a public problem that we cannot pretend will be solved by private interests. These measures cannot succeed if national policy for research and development continues to allow market forces to direct intellectual energy.

To imagine such measures means they are within our grasp conceptually and hence materially. What is missing is only political will.

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