

Contents lists available at ScienceDirect

Studies in History and Philosophy of Biological and Biomedical Sciences

journal homepage: www.elsevier.com/locate/shpsc

Indigenous populations in Mexico: Medical anthropology in the work of Ruben Lisker in the 1960s



Edna Suárez-Díaz

Facultad de Ciencias, Universidad Nacional Autónoma de México, Circuito Exterior, Cd. Universitaria. Avenida Universidad 3000, Coyoacan. 04510, Mexico D.F., Mexico

The central problem in population genetics today is the understanding of the biological significance of the genetic polymorphisms. James V. Neel Genetics has given much to medicine, but medicine, especially since the early 1960s, has given to genetics focus, direction, and purpose. Victor McKusick¹

ARTICLE INFO

Article history: Available online 8 July 2014

Keywords: Ruben Lisker Medical anthropology Indigenismo Hemoglobin variation G6PD deficiency International cooperation

ABSTRACT

Ruben Lisker's research on the genetic hematological traits of Mexican indigenous populations illustrates the intersection of international health policies and the local modernizing nationalism of the Mexican post-revolution period. Lisker's surveys of blood group types, and of G6PD (glucose-6-phosphodehydrogenase) and hemoglobin variants in indigenous populations, incorporated linguistic criteria in the sampling methods, and historical and cultural anthropological accounts in the interpretation of results. In doing so, Lisker heavily relied on the discourse and the infrastructure created by the *indigenista* program and its institutions. Simultaneously, Lisker's research was thoroughly supported by international and bilateral agencies and programs, including the malaria eradication campaign of the 1950s and 1960s. As a member of the scientific elite he was able to make original contributions to the postwar field of human population genetics. His systematic research illustrates the complex entanglement of local and international contexts that explains the co-construction of global knowledge on human variation after WWII.¹

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When citing this paper, please use the full journal title Studies in History and Philosophy of Biological and Biomedical Sciences.

1. Introduction

Latin American, and in particular Mexican, contexts, always raise the question of the relevance of what is seen as marginal science for the construction of scientific knowledge. However, the rise of postcolonial studies and the recent interest in transnational histories have shown that hegemonic views are always the result of a wide array of agents, acting across local and national borders and providing alternative views that often become incorporated in standard interpretations of nature (De Greiff & Nieto, 2006; Sivasundaran, 2010; and Turchetti, Herran, & Boudia, 2012). Following Sanjay Subrahmanyam (1997, p. 745), Gisela Mateos and I have pointed to the need for connected histories, as opposed to comparative histories (Mateos & Suárez-Díaz, 2012). Overall, this produces two different but interrelated demands. First, it puts an emphasis on the ways in which people, materials, and tools travel, and on the practices that make national boundaries selectively permeable and transnational histories possible.² Second, it makes desirable a symmetrical perspective in the treatment of agents and places. A symmetrical *perspective* does not entail the erasing of crucial differences and countless asymmetries (economic, political)

E-mail address: ednasuarez@ciencias.unam.mx.

¹ James V. Neel stated his position in the context of his contribution to the Wenner-Gren Symposium at Burg Wartenstein, Austria, that took place in August 9–18, 1969 on *The Ongoing Evolution of Latin American Populations* (Neel, 1971, p. 563). Victor McKusick's Opening Comments on the 5th International Congress of Human Genetics, that took place in Mexico City 1976 (Armendares & Lisker, 1977, p. 133).

² I am avoiding the common expression of the "circulation of knowledge", substituting it with the notion of travel, which better expresses the difficulties of moving across national borders (particularly if one thinks of US–Mexican border and customs), and the economic and political constraints on what can and cannot travel across them. In this, I am following Maria Jesus Santesmaes's reflections ("Circulation of knowledge and practices in the atomic age: radioisotopes and chromosomes in Spain", at the International Colloquium "Peaceful Atoms: Science During the Cold War", October 18–19, 2012. Mexico City).

existing between different partners. Instead, it means the recognition that processes affecting the global realm—for instance, the construction of a new postwar order—intersect with local contexts and processes which are themselves crucial for an interconnected transnational history.

The study of the genetic variation of Mexican indigenous populations by hematologist and medical geneticist Ruben Lisker illustrates the overlapping contexts of the postwar internationalization of science and the post-revolutionary construction of the Mexican state. Lisker's research reveals how US and European trends in the study of the genetics of human populations were incorporated and reconfigured in the Mexican context, in connection with international health programs and science policies after WWII. Extensive blood surveys of human populations and intensive use of the technologies of postwar biology characterized Lisker's contributions to the field of human population genetics. Though Lisker did not participate in the World Health Organization programs set up in this period, nor was he a formal participant of the International Biological Program, he did belong to the informal regional and international networks of blood surveys of human populations (see Bangham's & Radin's papers, in this issue).

The decades following the Mexican Revolution (1910–1917) constituted an intensive period of creation and transformation of institutions, public policies and Mexican ways of life. This period includes the Cardenist nationalism of the mid-late 1930s, as well as the economic optimism of the 1950s, with its ensuing modernization programs. It also includes a moment of political instability in the late 1960s. Nevertheless, this long period was marked by a sustained economic growth (the "Mexican miracle") and relative political stability-compared with other countries of the region (Katz, 2004). Though the impact and meaning of the Mexican Revolution continues to be reassessed, the post-revolutionary administrations promoted the growth of an incipient welfare state that included medical research institutions (Agostoni, 2013; Soto-Laveaga & Agostoni, 2011) as well as a national system of public education. Moreover, after the Second World War, a combination of nationalism, development and modernization (or modernizing nationalism), constituted the prevailing discourse of the political and scientific elites in Mexico; simultaneously, however, the foreign-educated scientific elite shaped their practices in order to accommodate postwar international trends.⁴

This complex set of conditions provided the framework for a peculiar approach to the study of the genetics of human indigenous populations should not, however, be evaluated only on the basis of its peculiarities. The Mexican case offers a view to the very different meanings to which human population research was put to service after WWII. In doing so, it helps us to broaden the historical narratives we have constructed for postwar health programs and the medical and anthropological genetics of human populations in this period, which are mostly based on the United States (for recent examples see Comfort, 2012 and Lindee, 2005). Thus, while we recognize in Lisker's research the common pattern of biochemical analysis of blood samples and the search for variations in human populations, we are also confronted with different research designs and goals. Lisker's program cannot be cast as individualized medicine or as a search for individual or familial improvement or therapy. Also distinctive was the fact that there was not a diseased community for Lisker to sample, or a lineage to interview, but a social group, an indigenous community, which was primarily defined by cultural and linguistic traits. Though there were certainly other approaches to human and medical genetics in Mexico at the time, and they were more in tone with contemporary US developments (see Barahona, 2009; Barahona, Pinar, & Ayala, 2005), the *indigenista* agenda provided a state intervention whose explicit goal was the socio-economic improvement of marginal populations, while its overarching aim was the incorporation of such communities into a purportedly homogenous ("mestizo") nation

In what follows, I will introduce a brief history of the indigenista movement, or indigenismo, which will provide the local context for the peculiarities of Lisker's research (Section 2). Section 3 explores Lisker's relation to cultural anthropology, and how this affected the research design of his extensive surveys for blood sampling of indigenous populations, while allowing him to contribute to the global mapping of human blood variation. I argue that Lisker's incorporation of the *indigenista* agenda was not restricted to his use of the state's infrastructure, but helps to explain the systematic, detailed nature of his results (including the extension and correction of previous reports). Section 4 focuses on his research on the distribution of G6PD deficiency and hemoglobin variants. While this project took place simultaneously with the one described in Section 3, the emphasis of this section is on the means by which practices and materials travel between Mexico and other countries (mostly, the United States, but also Britain and other Latin American countries), and on the practical consequences of Lisker's research for the malaria eradication program set up by the Mexican government and international agencies during this period. Lisker's work may well be one of the first field applications of the then newly defined field of pharmacogenetics (Motulsky, 1957). Finally, I end this essay (Section 5) with a reflection on how Lisker's research, while broadening the spectrum of human populations genetics and public health programs after the war, also illuminates the multilayered process of the construction of hegemonic scientific knowledge.

2. Indigenismo

One of the distinctive elements of modernizing nationalism in post-revolutionary Mexico was the movement known as *indigenismo*. In the late 1940s this doctrine was transformed into a powerful political instrument of state intervention and assistance to indigenous communities, the poorest fraction of the Mexican nation. The basic tenet of *indigenismo* was the need to incorporate the indigenous people to the modern, "mestizo" (mixed) nation, via the availability of health and education services to the rural communities. As many critical commentators and historians of Mexican anthropology have pointed out since the mid-1970s, the idea that indigenous people had to be somehow assimilated or integrated into the rest of the country relied on the perceived inferiority of contemporary indigenous cultures and a paternalistic conception of the Mexican state (Medina, 1996; Vergara-Silva, 2012). Moreover, according to Urias (2007) the *indigenista* agenda was the post-

³ Lisker received blood anti-sera from different laboratories around the world, including that of Arthur Mourant. He met Mourant in Mexico City in October 1976, at the Fifth International Congress of Human Genetics organized by cytogeneticist Salvador Armendares and Lisker. The Latin American human geneticists (headed by Brazilian Francisco Salzano) pushed for a Third World venue at the previous conference (personal communication, January 15, 2014). For previous research on "blood group anthropology" see Boyd (1950), Mourant (1954) and Jenny Bangham's paper (2014); on previous and contemporary studies in Mexico see Suárez-Díaz & Barahona (2013) and López-Beltran & Garcia-Deister (2013). In 1969, Lisker was invited by Brazilian geneticist Francisco Salzano to the Wenner-Gren Symposium on "The ongoing evolution of Latin American Populations" (Salzano, 1971; Ventura-Santos, 2002; Joanna Radin's paper, 2014, for the overall context of research at the WHO and the IBP).

⁴ To speak of "modernizing nationalism" is almost a contradiction in terms. After the 1950s modernization meant *development* for Third World countries, that is, projects designed and financed beyond their national borders. This is not the place, however, to review and confront the development programs for Asia, Africa and Latin America that defined the broader context of national and international policies for this period. See Arturo Escobar (1994) for a detailed account.

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