



The emergence of human population genetics and narratives about the formation of the Brazilian nation (1950–1960)



Vanderlei Sebastião de Souza^a, Ricardo Ventura Santos^{b,c}

^a Universidade Estadual do Centro-Oeste, Paraná, Brazil

^b Escola Nacional de Saúde Pública, Fundação Oswaldo Cruz, Rua Leopoldo Bulhões 1480, sala 617, Rio de Janeiro, RJ 21041-210, Brazil

^c Departamento de Antropologia, Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil

ARTICLE INFO

Article history:

Available online 20 June 2014

Keywords:

History of genetics
Racial crossing
Physical anthropology
Evolutionary theory
Brazil
Latin America

ABSTRACT

This paper discusses the emergence of human population genetics in Brazil in the decades following World War II, and pays particular attention to narratives about the formation of the Brazilian nation. We analyze the institutionalization of this branch of genetics in the 1950s and 1960s, and look at research on the characteristics of the population of Brazil, which made use of new explanatory models of evolutionary dynamics. These developments were greatly influenced by the activities of the Rockefeller Foundation and by the presence of North American geneticists in Brazil, especially Theodosius Dobzhansky. One of the main points of this paper is to show that explanations of Brazilian human genetic diversity constructed in the mid-twentieth century closely followed interpretations that had been produced since the end of the nineteenth century, in which notions of 'racial mixing' played a central role. Even as population genetics was conditioned by nationalist concerns that had long marked Brazilian history, we argue that its emergence and institutionalization was closely associated with global, post-World War II socio-political contexts, especially with regards to modernization projects and growing scientific internationalization.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

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

1. Introduction

"In terms of racial mixing, no colonizing people in modern times has surpassed, or even equaled, the Portuguese. From the first contact on, the colonizers happily coupled with dark-skinned women and multiplied through mestizo children" (Freyre, 1933, p. 9)

"The frequency of hybridization is probably variable in Brazil, according to the [Brazilian] states, as a consequence of the different attitude towards intermixture of the European immigrants settling in different places. [The] Portuguese, in contrast to most Europeans, are very fond of crossbreeding" (Saldanha, 1957, p. 307)

The above statements, which refer to the effect of the Portuguese tendency toward 'racial mixing'¹ on colonization, were written approximately a quarter century apart. Although the two quotes seem similar, they are based on interpretations constructed in different fields of research, each of which led its authors to reflect on the process through which the Brazilian nation was formed. The first comes from a classic work of anthropology/sociology from 1930s, the book *Casa-Grande & Senzala*, which later appeared in English with the title *The Master and the Slaves*; the second was published in the *American Journal of Human Genetics* in the 1950s. In the interpretation of sociologist Gilberto Freyre, the tendency for

¹ In this paper, we use such terms as 'race,' 'racial mixing,' 'racial crossing,' and 'racial mixture' because they were important to our actors, even though we do not regard them as useful for classifying groups of people. From this point forward we do not place them in quotes.

E-mail address: santos@ensp.fiocruz.br (R.V. Santos).

racial blending was a primordial characteristic of the Portuguese people. For the geneticist Pedro Henrique Saldanha, the racial attitudes of the Portuguese, compared to those of other European immigrants, explained the widespread racial mixing and genetic diversity of the country.² For both writers, miscegenation was a foundational paradigm for understanding the Brazilian reality.

As is widely recognized, themes related to race and racial mixture are central when thinking about the formation of Brazil (Fry, 2000; Maio & Santos, 1996; Santos, Kent, & Gaspar-Neto, 2014; Schwarcz, 1993; Skidmore, 1974). Since at least the mid-nineteenth century, travelers and scientists, both foreign and Brazilian, have known the country as a 'racial laboratory' (Bildén, 1929; Freire-Maia, 1973; Lacerda, 1911; Roquette-Pinto, 1933). Despite having arrived at their conclusions in different ways, both Freyre's sociological interpretation and Saldanha's genetic perspective derived from the principle that the Brazilian 'mixture' may be explained by the intense racial interaction that had marked Brazilian history since the colonial period. In this way, Saldanha the population geneticist—whose field from the 1950s expanded greatly in Brazil and in the world—read Brazil similarly to Freyre, the social scientist.

The aim of this essay is to examine how, from the 1950s, population genetic narratives about the formation of Brazilian society came into being. We analyze how a branch of science that proposed to investigate human biological diversity on a population scale became institutionalized in the country.³ We shall see that this

process was not only closely associated with the development of human population genetics on a global scale, but also, specifically, with the activities of the Rockefeller Foundation in Latin America. This foundation promoted visits of foreign geneticists to Brazil in the 1940s and 1950s and funded research and the training of new researchers. Geneticists from different parts of the country, who had trained with *Drosophila* in the techniques and theories of experimental evolutionary biology, began to reframe the history of the biological formation of the Brazilian population, with an emphasis on questions of racial mixing.

We will see that, through the use of new models and scientific perspectives, population geneticists offered explanations that closely followed socio-anthropological interpretations of Brazil that had appeared at the end of the nineteenth century. In accordance with this intellectual tradition—in which race was a central theme to understand the country—the geneticists of the mid-twentieth century focused their attention on the significance of miscegenation, but from the perspective of biological diversity. At the same time that population genetics was conditioned by nationalist concerns that had long marked Brazilian history, we argue that its emergence and institutionalization was closely associated with global post World War II socio-political contexts, in particular with regards to modernization projects and growing scientific internationalization.⁴

2. Rockefeller and the institutionalization of genetics in Brazil

At the beginning of the twentieth century, genetics increasingly captured the interest of scientists and institutions from different countries. Initially dealing with variation and heredity in plants, genetics soon began to be applied in agricultural research to improve seeds and farm animals (Carlson, 2004; Mayr, 1982; Ruse, 1996). In the early decades of the twentieth century, genetics was also used in the fields of medicine, eugenics, and physical anthropology to study heredity, evolution, and racial differentiation in different parts of the world (Adams, 1990; Barkan, 1992; Bashford & Levine, 2010; Kevles, 1985; Muller-Wille & Rheinberger, 2005).

In Brazil, the first genetic studies were carried out between 1910 and 1920 in agronomy schools such as the *Escola Superior de Agricultura Luiz de Queiroz* (ESALQ or Luis de Queiroz Agricultural School) and the *Instituto Agrônomo de Campinas* (IAC or the Campinas Institute of Agronomy), both located in the interior of São Paulo state. These institutes emphasized the teaching and researching of plant and animal genetics (Habib, 2010). At this time, as in other countries, the Brazilian eugenics movement also promoted genetics in Brazil (Hochman, Lima, & Maio, 2010; Santos, 2012; Souza, Santos, Coelho, Hannesch, & Rodrigues-Carvalho, 2009; Stepan, 1991).

Throughout the 1930s and 1940s, the founding of the first Brazilian universities gave scientific activities a fresh impulse in the country. Through the initiatives of André Dreyfus, the *Universidade*

² Although it is not our aim in this paper to discuss the gendered and sexualized imagery that abound in the genetic narratives on the formation of the Brazilian society, it should be stated from the outset that this is a central topic that deserves further investigation. The biological processes that have interested geneticists, such as gene flow, involved elements of sexual violence and coercion that, in the biological narratives, are often associated with what were regarded as specific psychological and moral attributes of the colonizers and the colonized (such as Portuguese men's 'natural' affinity for indigenous and African women). In the genetics literature we analyze in this study, these elements tend not to be problematized, although they closely pertain to sexual subjugation. While there have been recent efforts to explore these issues in the context of early twenty-first century human population genomic research in Latin America (see Wade, Beltrán, Restrepo, & Santos, 2014), attention is yet to be given to the gendered and sexualized imagery in human genetics research carried out in the post World War II context.

³ This paper is based on the analysis of published sources, archival research, and interviews with key Brazilian and foreign human geneticists. In developing our bibliography of published sources, we used the Lattes Platform (<http://www.lattes.cnpq.br>), created and managed by the Brazilian Research Council (CNPq), the main federal research funding agency in Brazil. This database was an important point of departure in identifying the publication records of Brazilian geneticists who carried out research in the late 1950–1960s, the main period of interest for this paper. It contains self-maintained *resumés* by most active scientists in Brazil, since Lattes CVs have been required for most applications for Brazilian federal research funding over the past 20 years. This database proved particularly useful in the initial stage of mapping the scientific output of scientists like Eliane Azevedo, Francisco Salzano, Henrique Krieger and Pedro Henrique Saldanha. We then requested interviews with some key geneticists. Eliane Azevedo and Francisco Salzano not only agreed to be interviewed but also kindly provided us with published material from their bibliographic archives. In Salzano's office at the *Universidade Federal do Rio Grande do Sul*, we were granted access to his large collection of reprints, which is particularly rich for the period 1950–1970. Open-ended interviews were based on a pre-defined set of topics: training in science, and in human genetics in particular; participation in human population genetics projects in the 1950s and 1960s; involvement in international collaborations in human population genetics of Brazilian populations; their perspective on issues related to race and racial relations and their interface with genetic research; funding conditions for Brazilian science over the past decades and for genetics. The interview with Eliane Azevedo was held at the *Universidade Federal da Bahia*, in Salvador, Brazil, on July 31, 2012, lasting approximately four hours. Salzano was interviewed at the *Universidade Federal do Rio Grande do Sul*, in Porto Alegre, Brazil, on April 12–13, 2012, and lasted approximately seven hours. Due to time limitations on their part and/or health problems, we engaged in shorter conversations with Eduardo Krieger (in Rio de Janeiro, Brazil, on October 27, 2012) and Newton Morton (in Salisbury, UK, on January 13, 2013). All interviews were recorded and passages related to their scientific activities in the time period of interest to this paper were transcribed. We should mention that all original quotations in Portuguese were translated into English by the authors.

⁴ In this volume, Suárez-Díaz (in this issue) presents a study on the development of genetics in another Latin American country, Mexico, which shows both parallels and differences with the Brazilian case. On one hand, we see in both countries how complex transnational processes in post World War II context helped to shape the production of knowledge on human biological diversity, often under the influence of modernizing sociopolitical agendas. On the other, the Brazilian and Mexican cases illuminate how different epistemic values were allocated to local Latin American populations with regard to the development of human population genetics. Whereas in Mexico genetic studies of indigenous populations were very much aligned with 'indigenismo' and its emphasis on the incorporation of indigenous peoples in the national context, those in Brazil in the 1950s and 1960s tended to focus on the 'isolate' and the 'primitive,' viewed as away from the influences of the socioeconomic and demographic influences of the nation state (see also Santos, Linde, et al., in press).

Download English Version:

<https://daneshyari.com/en/article/7552640>

Download Persian Version:

<https://daneshyari.com/article/7552640>

[Daneshyari.com](https://daneshyari.com)