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Blood groups and human groups: Collecting and calibrating genetic data after World War Two



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ABSTRACT

Arthur Mourant's *The Distribution of the Human Blood Groups* (1954) was an "indispensable" reference book on the "anthropology of blood groups" containing a vast collection of human genetic data. It was based on the results of blood-grouping tests carried out on half-a-million people and drew together studies on diverse populations around the world: from rural communities, to religious exiles, to volunteer transfusion donors. This paper pieces together sequential stages in the production of a small fraction of the blood-group data in Mourant's book, to examine how he and his colleagues made genetic data from people. Using sources from several collecting projects, I follow how blood was encountered, how it was inscribed, and how it was turned into a laboratory resource. I trace Mourant's analytical and representational strategies to make blood groups both credibly 'genetic' and understood as relevant to human ancestry, race and history. In this story, 'populations' were not simply given, but were produced through public health, colonial and post-colonial institutions, and by the labour and expertise of subjects, assistants and mediators. Genetic data were not self-evidently 'biological', but were shaped by existing historical and geographical identities, by political relationships, and by notions of kinship and belonging.

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1. Introduction

In 1954, British haematologist Arthur Mourant finished a book that constituted the largest single collection of human genetic data ever published: *The Distribution of the Human Blood Groups*. Mourant, a physician, serologist and geneticist, was director of the Blood Group Reference Laboratory in London, an institution internationally recognized as a centre for expertise on blood grouping techniques. During the previous few years, Mourant had carved out a successful research programme collecting data on the blood-group frequencies of people around the world. Blood groups were almost the only human traits with clear-cut Mendelian inheritance, and for Mourant and many others, blood-group genetics offered a promising set of methods for the study of racial diversity. Published by Blackwell Scientific Publications in Oxford, *The Distribution of the Human Blood Groups* was 400 pages long and contained the results of tests done on half-a-million people represented in nine maps, 40 tables and a vast bibliography. The *American Journal of Physical*

Anthropology described Mourant's book as "indispensable", the *American Anthropologist* called it "brilliant", and the Royal Anthropological Institute journal *Man* considered it to be "the most important" contribution to "the anthropology of blood groups" to date (Birdsell, 1956; Boyd, 1955; Kherumian, 1954). The book's opening page explained Mourant's confidence in what blood groups could offer the study of race:

[a] study of the blood groups besides having many purely scientific advantages over most other bases of classification has the merit of providing objective criteria far removed from the traditional marks of 'race'. We may plausibly though wrongly hold that fair or dark hair is the nobler; we may consider that a long face or a small foot is a mark of aristocracy—but the blood groups have so far remained almost completely free from the effects of such subjective judgements. (Mourant, 1954, p. 1)

The objectivity of blood groups was rendered visually in the foldout maps at the back of the book (example in Fig. 1). On these maps, superimposed on an outline of the world's countries, isolines

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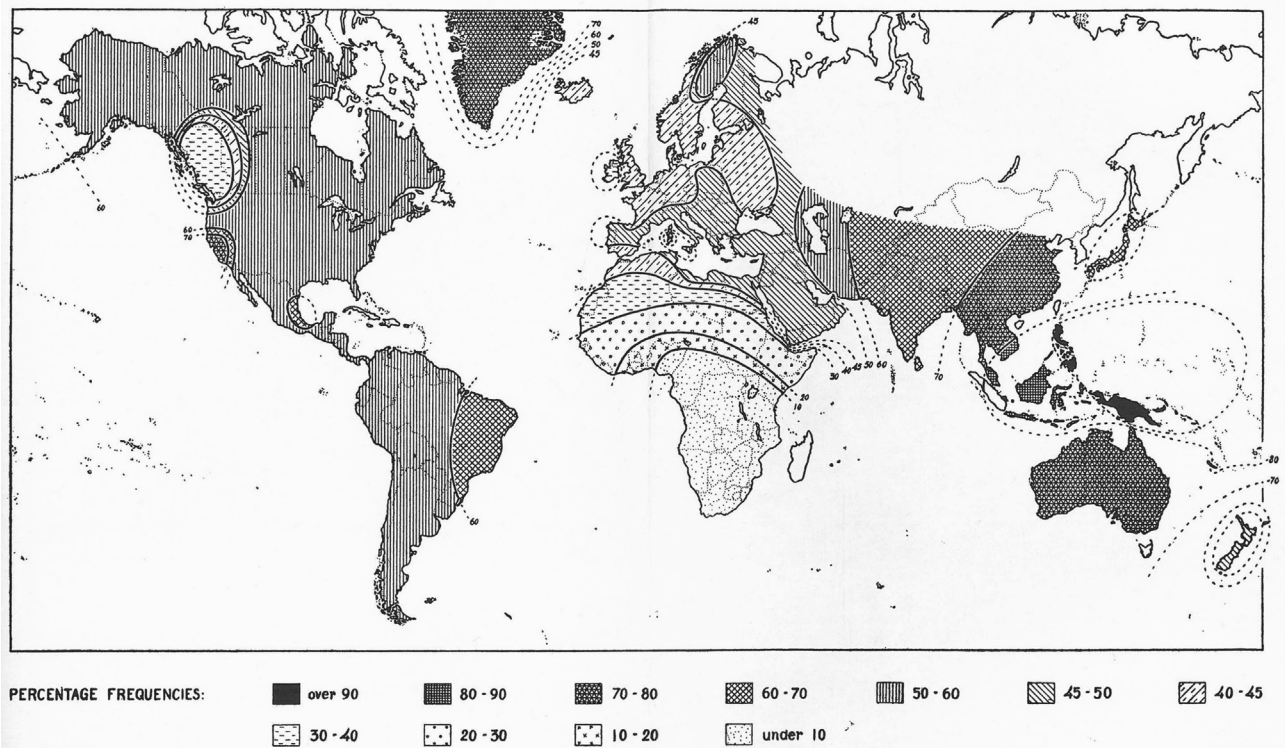
APPROXIMATE DISTRIBUTION OF THE R_H BLOOD GROUP GENE C IN THE ABORIGINAL POPULATIONS OF THE WORLD

Fig. 1. One of nine fold-out maps in *The Distributions of the Human Blood Groups* (1954). It shows the percentage of individuals carrying blood-group allele C in different geographical regions of the world, and uses isolines and shading to indicate threshold frequencies across space. This obscures evidence of the patchiness of sampling, the circumscription of geographical boundaries, and the political borders that structured collections. Permission to reproduce the image could not be obtained because the copyright holder, Blackwell Scientific Publications Oxford, no longer exists. The image is reproduced under provisions of 'fair dealing' for purposes of research, criticism, and review.

indicate threshold blood-group frequencies and the density of shading depicts their magnitude. These graphical techniques offer the impression of a smooth diffusion of blood-group alleles across geographical space, and obscure the different kinds of population represented in the data. It is one of the main purposes of this paper to reflect on the construction of these populations and to follow the social, political and institutional relationships that shaped Mourant's genetic data.

For many decades blood groups had been used to articulate multiple political discourses. Briefly, that history begins in 1901 when immunologist Karl Landsteiner observed that mixing samples of blood from different individuals sometimes caused red cells to clump together, or 'agglutinate'. Landsteiner accounted for patterns of agglutination by categorizing people into groups, eventually standardized to A, B, O and AB. Landsteiner understood agglutination to be a simple immunological reaction: soluble 'antibodies' (anti-A, anti-B) in the serum of one sample reacting with 'antigens' (A, B) on the red cells of the other. Blood groups were simultaneously antigens and categories accounting for agglutination patterns. Their rising significance in transfusion medicine after the First World War led to a vast proliferation of studies on the blood-group frequencies of different racial and national populations, which were mobilized to serve post-First World War discourses on nationalism, colonialism, race and ancestry.¹ By 1939

research on the geographical distributions of blood groups had involved tests on an estimated 1.3 million people.² No less political, in Britain especially, blood groups were promoted as Mendelian traits, emblematic of a 'reformed' and 'quantitative' human heredity (Bangham, 2013a; Mazumdar, 1992). By the postwar period, the notion that blood-group genetics exemplified a modern, 'scientific' and 'objective' method for studying human diversity was perfectly in line with larger-scale postwar arguments about genetics and the purification of race science, elevated onto the international stage most publicly by UNESCO (Brattain, 2007; Gormley, 2009; Reardon, 2004). By the 1950s, blood groups were seen by many as the pre-eminent traits for the study of human diversity, and Mourant had established himself as a worldwide expert on their study.

Mourant's success was closely associated with his institutional positions (Misson, Bishop, & Watkins, 1999; Mourant, 1995). After the Second World War he took charge of the Blood Group Reference Laboratory (BGRL), which was responsible for producing standardized reagents ('antisera') for blood-grouping tests in transfusion depots across Britain. In 1950 the World Health Organization (WHO) sanctioned the BGRL as its centre for antisera production. This appointment placed Mourant at the centre of a large international community of blood grouping laboratories. He provided reagents and technical advice to transfusion specialists, doctors, missionaries, geneticists and anthropologists around the world.

¹ For Germany see Mazumdar (1990) and Boaz (2012); for Hungary and Romania see Turda (2007); for valuable overviews see Schneider (1995, 1996).

² This estimate comes from Schneider (1996).

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