Andrea Ceccon:
“Blood Group Race”

in: Eric Hounshell, Ruth Amstutz (eds.):

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BLOOD GROUP RACE Cartesian Anthropology

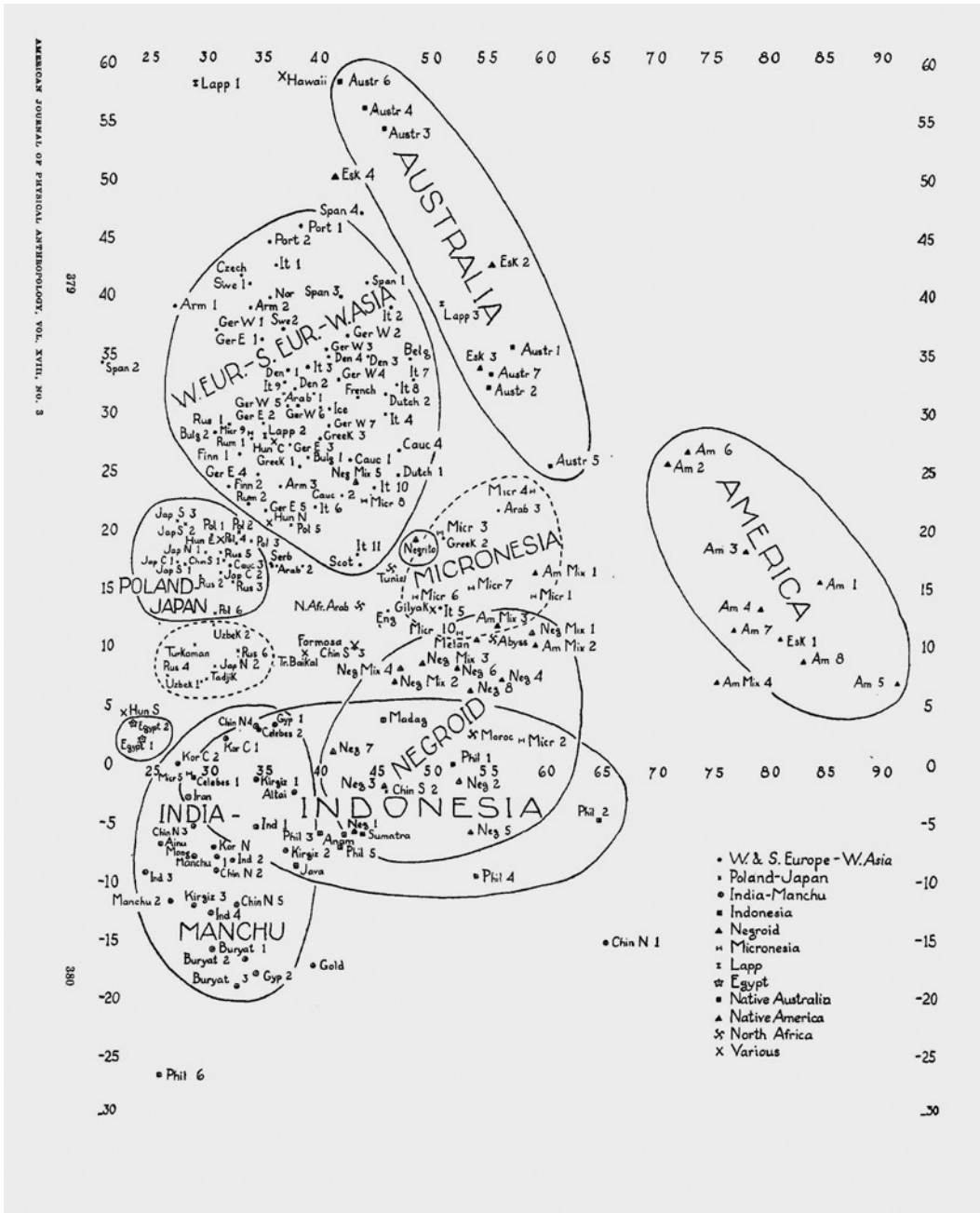
After the discovery of human ABO blood groups by Viennese immunologist and serologist Karl Landsteiner in 1900,[1] German physician Emil von Dungern and Polish microbiologist and serologist Ludwik Hirszfeld confirmed the hypothesis of their heritability in 1910.[2] Building on these contributions, in 1919 Hirszfeld and his wife Hanka published the first, influential paper on the "Serological Differences Between the Blood of Different Races."[3] This publication, which was long considered a classical paper in the field of anthropology, is often seen as signifying the rise of "sero-anthropology," a new, fast-growing discipline that aimed at establishing blood group determinations on different peoples and, ultimately, tried to prove blood groups as "racial" – if not even national – characteristics.
From the very outset of the enterprise, it was clear that synoptic tools such as eloquent graphical representations would have been very important in order to translate the set of investigations that were conducted under the banner of the new field of study into a meaningful and understandable message. As a result, different kinds of visualisations were proposed.

"One does not have to be visually predisposed to understand that pictorial representations can illustrate the results of large statistical surveys in a much more effective way than tables filled with numbers. Thus, it does not come as a surprise that we encounter attempts at an early stage [of the development of sero-anthropology] to graphically illustrate the blood group material, collected in form of numerical data, for the purposes of racial science."

Paul Steffan: "Die Bedeutung der Blutgruppen für die menschliche Rassenkunde", in: Paul Steffan (ed.): *Handbuch der Blutgruppenkunde*, München: J. F. Lehmann (1932), p. 434. Translation by the author.

Geographical and "racial" distribution of blood groups was conveyed into different kinds of graphical representations. Geographical maps plotting blood group gene frequencies by means of contours were probably the most obvious examples, but other more abstract diagrammatic conceptualizations were proposed.

The following diagram is an example of these efforts to express graphically the relation of populations in regard to blood-group frequencies. Published in 1934 by the American anthropologist Alfred Louis Kroeber, it makes use of ABO gene frequencies, which Kroeber extracted from data compiled by the German naval surgeon Paul Steffan and the Austrian engineer Siegmund Wellisch.[4] Kroeber's choice was to chart gene frequency data in a Cartesian space.



Alfred Louis Kroeber: "Blood Group Classification", in: *American Journal of Physical Anthropology* 18 (1934), pp. 377–393, diagram on pp. 378–382.

The scale of both x- and y-axis is the proportion of allelic frequency for the ABO blood group system. The horizontal axis expresses "the strength of the O factor" and the vertical axis expresses "the A to B relation" in terms of the ratio of A–B.[5] This allowed Kroeber to pinpoint populations as three-parameter entities into a two-dimensional space. The diagram conceptualizes populations as points in the shape of symbols that are explained in a legend in the bottom right-hand corner. These points are then grouped into larger sets by drawing contours around those that are represented by the same symbol.

The choice of the x- and y-axes is particularly significant because Kroeber explicitly refused to use indexes such as the then-famous "biochemical race index" – a brainchild of the Hirszfelds – on the basis of which the couple proposed the notion of "biochemical race" or "serological race."

"Indeed, it is now possible to distinguish serological races within species. This can be obtained thanks to isoantibodies, and therefore a constitutional consideration of serological processes should be derived from the isoantibodies and the blood structures that can be determined by them."

Ludwik Hirszfeld: "Die Konstitutionslehre im Lichte serologischer Forschung", in: *Journal of molecular medicine* 3/26 (1 January 1924), pp. 1180–1184, p. 1180. Translation by the author.

In spite of the rejection of the Hirszfelds' "biochemical races," in the text accompanying the diagram Kroeber treats the groups that he drew in the chart as "blood-group races," a category that seems to closely resemble the one proposed by the couple. On the other hand, Kroeber also pointed out that the blood-type classification of his diagram crosscut what at that time was considered "the usually accepted race classification" and that the distributions were not even geographically consistent.[6] Indeed, the blood-type assemblage thus defined cuts across "races" as they were then described through anthropometry, as is well exemplified by the Poland-Japan cluster or by the overlap of "types" that were generally considered quite different, such as what Kroeber defined as the "Negroid type" and the "Indonesian type."

BLOOD GROUP RACE (Un)cultural Anthropology

Kroeber's somewhat conflicting considerations – using his diagram to define "blood-group races" while at the same time pointing out the problems of the category just defined – reflect what seems to be Kroeber's main concern: to show that such diagrams do not in themselves allow to draw any clear conclusions about the relationships of the world's population. However, we should not be led to believe that Kroeber was questioning the very concept of "human race" – a questioning for which anthropology would need to wait a few more decades. Far from it.

"A race is a valid biologic concept. It is a group united by heredity: a breed or genetic strain or subspecies. It is not a valid sociocultural concept; the term 'race' is usually ambiguous and is best not used in sociocultural situations [...]. But physical anthropology being concerned with man's organic features, is properly and necessarily concerned with the human races."

Alfred Louis Kroeber: *Anthropology: Biology & Race*, New York: Harcourt, Brace & World (1963), p. 78.

Kroeber was Franz Boas's first doctoral student and the founder of the department of anthropology at Berkeley. More to the point, he is often considered one of the fathers of cultural anthropology. His short involvement with blood-group-based raciology seems to have been directed primarily at making sure that the discipline he was developing could operate on phenomena free from the grip of the biological sciences. Highlighting the problems of "race" as defined by sero-anthropology while adopting and officially approving the overall approach of the discipline was deemed apt to facilitate the establishment of disciplinary boundaries between physical and cultural anthropology and of major autonomy from biology for the latter. In particular, Kroeber aimed at undermining the theory for which blood groups could explain human history. In Kroeber's opinion, "race" was a category that worked very well in physical anthropology, but human history could only be explained through the lens of culture.

"When one has spoken a dozen times of 'the French race,' one tends inevitably to think of the inhabitants of France as a biological unit, which they are not. The basis of the error is confusion of organic traits and process with super organic or cultural ones, of hereditary or heredity with tradition or imitation [...]. The inherently great difficulties which beset the understanding and solution of what are generally called race problems [...] are considerably increased by a confusion between what is and what is not racial, organic, and hereditary."

Alfred Louis Kroeber: *Anthropology: Biology & Race*, New York: Harcourt, Brace & World (1963), p. 130.

"If there is nothing beyond the organic, let us quit our false and vain business [(cultural) anthropology] and turn biologists."

Alfred Louis Kroeber, "Heredity without Magic", in: *American Anthropologist* 18 (1916), pp. 294–296, p. 296.

Kroeber – who had never dealt with serology before his 1934 foray – was an ardent advocate of the fundamental importance of culture and (non-biological) history in the formation of group differences as the basis for the establishment of cultural anthropology as an independent field of study with its own founding and disciplinary arsenal.

BLOOD GROUP RACE Triangular Anthropology

Since 1926, Finnish physician and blood researcher Oswald Streng tried to represent blood group data with a diagrammatic depiction that became known as "Streng's triangle" *(Streng'sches Dreieck* or *Rassedreieck),* the first of a long series of graphical devices that were immediately well-received, especially by German-speaking scientific communities. As mentioned, the data on which Kroeber's diagram was built is a selection from the data collected by Steffan and Wellisch, which is not accidental. In the 1930s, Steffan was the author of some of the most widely reproduced, Streng-inspired diagrams aiming at determining the history of human populations. As all sero-anthropologists, he believed that, thanks to blood group investigations, migratory movements and racial crossings could be reconstructed. This was the goal of those diagrams. Kroeber's own diagram made explicit reference to that tradition of research.

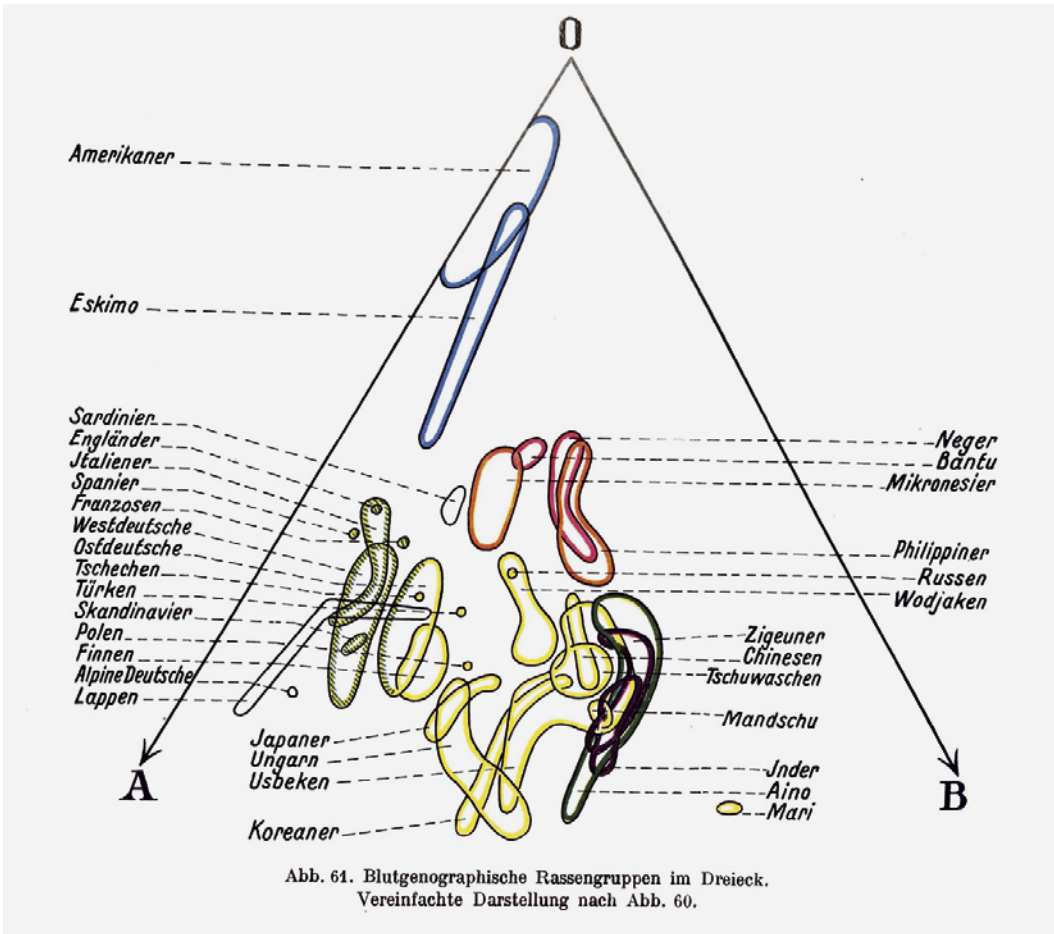


Abb. 61. Blutgenographische Rassengruppen im Dreieck. Vereinfachte Darstellung nach Abb. 60.

Paul Steffan: "Die Bedeutung der Blutgruppen für die menschliche Rassenkunde", in: Paul Steffan (ed.): *Handbuch der Blutgruppenkunde*, München: J. F. Lehmann (1932), pp. 382–452.

By the means of diagrams such as this – in addition to his famous "race maps" – Steffan aimed at showing Felix Bernstein's idea that the O blood group was the "original" blood type of the human species and the type A blood and type B blood occurred later as two distinct, independent mutations. Furthermore, following the Hirszfelds, Steffan claimed that the "cradle" of the A "factor" had to be found in northwestern Europe, while the B "factor" was likely coming from East Asia. As a result, he asserted that it was possible to define two geographical "agglutination poles" – from which the two factors spread through migration and admixture – and two matching primeval races: the "Atlantic race" (the cradle of type A) and the "Gondwanic race" (the cradle of type B). Significantly, Steffan also maintained that the western and eastern elements met in correspondence of Germany's eastern frontier.
Steffan published the diagram reproduced here in his then-celebrated 1932 *Handbuch der Blutgruppenkunde* specifically as a way to suggest that type B was characteristic of the East and type A of the West. As the two arrows on the sides of the triangle show, the diagram is specifically conceived to illustrate the descent of two lines: from the original, unmutated type O blood on the top corner – represented by populations that "went into isolation" before the two mutations – the "Atlantic race" descends down towards the "geographical" left side of the triangle and the "Gondwanic race" towards the right side.

When devising his own diagram, Kroeber seems to have aimed at employing the same data used by Steffan and Wellisch and a similar but different diagrammatic tool to show a different account, one that does not allow any grounded conclusion – thereby implicitly arguing that such grand claims as Steffan's incorporate "more interpolations than data" and could not have actual solid bases.[7] He suggested instead an alternative and vaguer hypothesis assuming that the A and B "factors" arose independently several times in several places and populations. This could undermine the idea that the A and B "factors" could be traced back to a common ancestor, thereby making them unreliable as a means for reconstructing migratory movements.

Indeed, if diagrams are generally used to find coherence in the complexity of the data to make sense of a phenomenon, in this case Kroeber's goal seems rather to emphasize the intricacy of the picture.

Notes

1 Karl Landsteiner: "Zur Kenntnis der antifermentativen, lytischen und agglutinierenden Wirkung des Blutserums und der Lymphe", in: *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten* 27/10/11, (23 March 1900), pp. 357–362; Karl Landsteiner: "Über Agglutinationserscheinungen normalen menschlichen Blutes", in: *Wiener Klinische Wochenschrift* 14/46 (14 November 1901), pp. 1132–1134.

2 Emil von Dungern, Ludwik Hirszfeld: "Über Vererbung gruppenspezifischer Strukturen des Blutes", in: *Zeitschrift für Immunitätsforschung und Experimentelle Therapie* 6 (25 April 1910), pp. 284–292.

3 Ludwik, Hanka Hirschfeld [sic]: "Serological Differences Between the Blood of Different Races", in: *The Lancet* 194/5016 (18 October 1919), pp. 675–679.

4 Paul Steffan, Siegmund Wellisch: "Die geographische Verteilung der Blutgruppen", in: *Zeitschrift für Rassenphysiologie* Vol. I (1928), pp. 46–60, 80–81, 154–159; Vol. II (1929), pp. 114–145; Vol. III (1930), pp. 184–187; Vol V (1932), pp. 180–185; Vol. VI (1933), pp. 28–35 was not used by Kroeber; obviously, the same applies to the data that Steffan and Wellisch compiled in the same series after 1933.

5 Alfred Louis Kroeber: "Blood Group Classification", in: *American Journal of Physical Anthropology* 18 (1934), pp. 377–393, pp. 377–378.

6 Alfred Louis Kroeber: *Anthropology: Race, Language, Culture, Psychology, Prehistory*, New York: Harcourt, Brace (1948), p. 160.

7 Alfred Louis Kroeber: "Blood Group Classification", in: *American Journal of Physical Anthropology 18* (1934), pp. 377–393, p. 377.

Further Readings

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Myriam Spörri: *Reines und gemischtes Blut: Zur Kulturgeschichte der Blutgruppenforschung, 1900–1933*, Bielefeld: Transcript (2013).