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This is the published version of a paper published in *Hereditas*.

Citation for the original published paper (version of record):

Saura, A. (2014)

A tale of two papers.

Hereditas, 151(6): 119-122

<http://dx.doi.org/10.1111/hrd2.00073>

Access to the published version may require subscription.

N.B. When citing this work, cite the original published paper.

Permanent link to this version:

<http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-100155>

Forum

A tale of two papers

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Saura, A. 2014. A tale of two papers. – *Hereditas 151*: 119–122. Lund, Sweden, eISSN 1601-5223. Accepted 1 October 2014.

Two papers published in HEREDITAS between 1921 and 1939 show how the attitude towards race biology changed in the course of the interwar period in the Nordic countries. In the early 1920s race biology was seen to constitute a legitimate science. Ordinary human genetics prevailed, however, over race biology already in the very beginning on the pages of HEREDITAS. Population thinking was introduced into the study of human heredity around the year 1930. It effectively contradicted the concept of the race. Interestingly, HEREDITAS does not carry a single paper on eugenics and sterilization. In 1939 we see a final repudiation of the doctrines on race. Times had changed and the National Socialists had usurped the doctrines of race in Germany.

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Martin P. Nilsson (1874–1967) was the professor of Ancient Greek, classical archaeology and ancient history at Lund. In addition, he was the President of the University 1936 through 1939. In 1921 he published in HEREDITAS an essay with the title “The race problem of the Roman Empire” (NILSSON 1921). He attributed the decline and fall of the Empire to unlimited bastardizing that “conveys perils that cosmopolitanism did not acknowledge but which modern science has shown to be real... There are races of more and lesser value. Bastardizing between two races that differ to more than a certain degree results in the deterioration of the race, at least viewed from the standpoint of the better of the two.”

In 1939 Nilsson published in HEREDITAS a sequel to the above essay, now in German (NILSSON 1939). He effectively contradicted everything written in 1921. Times had changed and the National Socialists were in power in Germany. In addition, the conceptual framework of genetics had changed during the 18 years that had elapsed between the two papers. Here I attempt to describe the change as seen on the pages of HEREDITAS.

HEREDITAS had been founded in 1920 on an appeal sent to Swedish benefactors of science and culture in 1919. The tone of the appeal was patriotic. It stressed the importance of applied science: plant breeding and race biology. The latter was characterized as a branch of genetics that has social applications of utmost importance in the near future. Obviously a critical and strictly scientific treatment will be needed in this field (TUNLID 2004).

Herman Lundborg (1868–1946), the director of the State Institute for Racial Biology at Uppsala since 1922, was a member of the first Editorial Board of HEREDITAS. In the beginning of the 20th century he had

published an extensive study describing myoclonus epilepsy that bears his name (LUNDBORG 1901, 1913). Cousin marriages had evidently contributed to an increase of an otherwise extremely rare trait. The study of Lundborg-Unverricht epilepsy is, in several ways, a pioneering contribution. Lundborg had clearly understood the value of the Swedish church records in the study of human heredity.

In addition to epilepsy LUNDBORG (1913) had observed and recorded debauchery and vagabondism in his genealogical material. He argued that a Mendelian interpretation would help in understanding behavioral deviations (LUNDBORG 1914). As a consequence, he drifted from genetics to social science. BÉNÉDICT AUGUSTIN MOREL (1857) and JOSEPH ARTHUR DE GOBINEAU (1853–1855) had in the 1850s developed the concepts of degeneration (i.e. a cumulative deterioration in the hereditary constitution of humankind) and the inequality of human populations, respectively. Degeneration was seen to constitute a menace (LUNDBORG 1922, 1934) that may be considered equal in importance with the way we perceive the climate change today. As a consequence, race biology emerged as a leading direction of sociology in the early twentieth century so that Lundborg was contributing to a respectable position.

Nilsson's evidence in 1921

M. P. Nilsson did not include any references in either of his essays (NILSSON 1921, 1939). We can, however, locate the source of his assertion that modern science had confirmed the negative effects of “bastardizing” in his paper of 1921 (NILSSON 1921). Herman Nilsson-Ehle, a member

of the editorial board of HEREDITAS and a friend of Nilsson propagated such a view (BENGTSSON 1999, TUNLID 2004). LUNDBORG (1920a, 1921) advanced proof for the above argument in HEREDITAS. He had observed the consequences of interbreeding between the three races of northern Sweden: the Swedes, the Finns and the Sami (Lapps) using eye color as a criterion for race. The offspring of mixed marriages were somewhat taller than their parents. He observed that mortality in tuberculosis is higher in the north than in the rest of Sweden. The large cities of Stockholm and Gothenburg show a high TBC mortality as well. At the same time they stand out as localities with racially mixed populations.

LUNDBORG (1920a) stated that the proneness to be afflicted with TBC is polygenic. People with a uniform genetic background are, therefore, less liable to succumb in TBC than folks with a mixed parentage. Red hair is, likewise, associated with diseases and criminality. The conclusion is straightforward: individuals heterozygous for many genes may be tall but they are disease-prone (LUNDBORG 1921). The condition results from genetic chaos (Genwirrwarr); i.e. mixing genes from different races does not result in a balanced phenotype.

LUNDBORG (1923) analyzed the racial composition of northern Sweden further. He studied the interbreeding of three races, the Nordic, Finnic and Lappic using eye color and cephalic and facial indices as criteria for race. The Finns have a Lappic component attributable to an admixture with the Sami (Lapps). A nomadic lifestyle characterizes the Sami. When they settle down they become Finns, i.e. they acquire their mode of life and do not consider themselves being Sami any more.

HEREDITAS carries a single paper on archaeological anthropology. RIBBING (1926) compared the morphology of two skulls found at Vellinge in Scania with the cranial characteristics of the folks of his day as well as with corresponding material from Denmark. One of Ribbing's skulls hailed from the Stone and the other from the Iron Age. On the basis of this limited sample size RIBBING (1926) argued that the cranial characteristics peculiar to the Vellinge population had persisted through thousands of years. He even ventured to assert that the ancient bearers of the skulls had been highly intelligent.

Human heredity in HEREDITAS

In addition to the above contributions to race biology, Lundborg authored two papers in HEREDITAS (LUNDBORG 1920b, 1927). They dealt with the inheritance of deaf mutism and ichthyosis simplex, i.e. with normal human genetics.

Halfdan Bryn and Kaarlo Hildén observed the expression of characters in isolated human populations. Bryn was a district surgeon at Trondhjem in Norway. In the first

issue of HEREDITAS (BRYN 1920) he recorded the inheritance of eye and hair color and indices of width-length of the head and height-width index of the face in the isolated districts of Selbu and Tydalen.

Kaarlo Hildén, professor of cultural geography at Helsinki, published a series of papers in HEREDITAS starting in 1922 (HILDÉN 1922). Using church records he traced the inheritance of single characters on the Estonian island of Runö (Ruhnu) in the middle of the Gulf of Riga in the Baltic Sea. The inhabitants speak (or rather spoke, since they moved to Sweden during the Second World War) a unique dialect of old Swedish and they were both strongly isolated and inbred.

Starting in 1923 Kristine Bonnevie of Oslo published several papers on the inheritance of papillary ridge patterns of fingers (BONNEVIE 1923). In 1925 Fridtjof and Jon Alfred Mjøen of the private Winderen Laboratory at Oslo attempted to elucidate the inheritance of musical talent (e.g. MJÖEN 1925). Oluf Thomsen of Copenhagen described new blood group subdivisions (THOMSEN 1930) that gave rise to a correspondence and subsequent contributions. PETTERSSON and BONNIER'S (1937) record of an inherited human sex mosaic was criticized by Solomon G. Levit (LEVIT 1937, BONNIER 1938). The latter, a distinguished Soviet specialist of children's diseases, was soon thereafter shot as a traitor by the henchmen of Trofim D. Lysenko in the name of proletarian biology (BENGTSSON 1999).

Genetics of human populations

The two contributions of SVEN WAHLUND (1928, 1929) represent the rising science of population genetics. Their stringent argumentation stands in stark contrast to the loose hypothesizing of RIBBING (1926) cited above. WAHLUND (1928) is one of the truly classical papers published in HEREDITAS. He treated exactly the effect of structuring within a population, i.e. a case that it is divided into isolated subpopulations. The allele frequencies among the latter may diverge, in particular if the subpopulations are small. The variance in allele frequencies among subpopulations is known as *Wahlund's principle* or *Wahlund effect*. In comparison with a randomly mating large population the proportion of heterozygotes is lower and homozygotes higher in a subdivided population of equal size. WAHLUND (1928) discussed the effect in some detail.

Wahlund was employed as a statistician at the Institute of Race Biology in Uppsala. He used the material collected by the Institute to analyze the effects of social mobility (WAHLUND 1929). He expressly states that there is no proof for the alleged superiority of the Nordic race. He analyzed the anthropological measures (cephalic index and five other variables) of students belonging to different

social strata. His null hypothesis was that they will conform to the anthropological differentiation observed among the strata. The students were found to be, on an average, 3 cm taller than the population at large. Representatives of the higher classes of society were known to be somewhat taller than average height. The students differed from the population mean in all measures. Evidently the differences were attributable to environment rather than selection, in particular since the samples were taken from the homogenous population of Sweden.

Gunnar Dahlberg served as Lundborg's assistant at the State Institute for Racial Biology from 1922 through 1924. He published then a single contribution to *HEREDITAS*. DAHLBERG (1923) is a compilation of statistics on twins based mainly on records from Germany and Norway. His next two papers in *HEREDITAS* on the effect of inbreeding and methodology in the use of pedigree data (DAHLBERG 1930a, 1930b) represent the work of a mature scientist well acquainted with statistics and population genetics. The former paper elicited a critical response from Wilhelm Weinberg, the grand old man of human population genetics (WEINBERG 1931) in *HEREDITAS*.

The decline and fall of race biology

The funding of the State Institute for Racial Biology under the leadership of Herman Lundborg was decreased in the early 1930s. Nevertheless, Lundborg continued to make field trips to Lapland in order to collect more data. In 1934 he authored a popular book on the decline of the west (LUNDBORG 1934). That was his swan song. He retired in 1935. Dahlberg was appointed as his successor, something that Lundborg objected strongly against. He was so embittered that he withdrew from his cherished project on the Sami. DAHLBERG and WAHLUND (1941) completed the treatise by a volume that was much thinner than the preceding books issued by the Institute but shared the giant format of Swedish anthropological studies. The book constituted a direct attack on race biology; a view that WAHLUND and DAHLBERG had shared already for over ten years (WAHLUND 1929, BENGTTSSON 1999, BROBERG 2002). Dahlberg continued, however, advocating eugenics. Research on eugenics had been an original obligation entrusted to the State Institute along with race biology. Interestingly, *HEREDITAS* does not carry a single paper on eugenics and/or sterilization, even though the internationally known eugenicists Lundborg and Jon Alfred Mjöen contributed to the journal.

In 1933 the National Socialists ascended to power in Germany. They soon began implementing policies and laws grounded on a doctrine based on a hierarchy of races with the Nordic one on the top. The races were defined by anthropological measures, i.e. the size and proportions of the human body (see e.g. HUTTON 2005). In addition to an

alleged anthropometric legitimacy, the race doctrine included a strong dose of old European anti-Semitism. The result was a virulent mix that would lead to gas chambers and the Holocaust.

Nilsson's essay of 1939 in *HEREDITAS* (NILSSON 1939) shows the depth of revulsion felt towards the National Socialist race doctrines. He states that the concept of race has been massively abused. Consequently he now uses "variety" instead of race. Selection operating on skin and hair color has caused the phenotypic differences among human varieties. Given isolation and inbreeding, interbreeding or "bastardizing" in his 1921 essay (NILSSON 1921) will lead to a stable outcome. In 1939 Nilsson argues that the cultures of antiquity all were the result of interbreeding among varieties and had a mixed background. He lists ancient Egypt, Babylon, the Akkadians, the Assyrians, the Greeks and, in particular, the Jews and Rome as evidence. The Jews, in particular, are mixed to a degree greater than the others. NILSSON (1939) argued that the Aryans are a destructive element. They impose themselves as masters of the others and act as a ferment that may lead to the birth of a new culture.

In retrospect, we can see that race biology was subjected to "a critical and strictly scientific" scrutiny in *HEREDITAS* through the 1920s and 1930s. Papers on normal human genetics outweighed the few treatises on race of the first years. Eugenics and sterilization were completely absent. In the service of the State Institute of Racial Biology, Wahlund and Dahlberg introduced population thinking into human genetics. The Nordic community of geneticists had largely adopted their view when the National Socialist usurpation of science came.

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