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# The decline of race in American physical anthropology

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*ABSTRACT* This paper is a review of how and why the race concept has changed in the United States during the 20th century. In the 19th century the concept of race provided the unchallenged folk taxonomy and the prevailing scientific paradigm for placing human biological and cultural variation into categories called races. At the height of the eugenic and anti-immigration movement of the early decades of the 20th century, Boas and his students began the critique of racism and aspects of the race concept. In the early 1950s Washburn proposed that the modern synthesis replace race typology with the study of processes and populations. In the 1960s new data on clinal genetic gradations provided tools for studying human variation while challenging the race concept. We present several kinds of documentation of the decline of the race concept over the 20th century, and place the above changes in the context of the essential development of new genetic evidence. We also relate the decline of race to historical developments, the growth of the culture concept, and the biographies of the participants. We reject political correctness and view science as a self-correcting endeavor to relate concepts to the empirical world.

*KEY WORDS* race, cline, population, Boas, Washburn

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## Race decline: The evidence

Several lines of evidence indicate that a majority of physical anthropologists in the United States have rejected the concept of biological races. Since 1968 my several colleagues and I have been carrying out a series of empirical studies demonstrating the decline of the race concept [LIEBERMAN 1968; LIEBERMAN and REYNOLDS 1978; LITTLEFIELD *et al*. 1982; LIEBERMAN *et al*. 1989, 2003]. A documented source of evidence of the decline of support for the race concept is seen in a content analysis of the frequency of articles in the *American*

*Journal of Physical Anthropology* (*AJPA*) using either the race concept or the traditional taxonomy of Caucasoid, Mongoloid, Negroid from 1918–2001 (in odd-numbered years). In 1918 the *AJPA* began publishing and 60 percent of articles on human variation used the race concept or race taxonomies. In odd-numbered subsequent years (see Fig. 1), among 1,636 articles, the percentage varied but gradually declined to 4 percent in 2001 ($r$ = -.89, $p$ = .01). Viewed in three periods (see Table 1) the percentages using race were: 61 percent in 1918–1943; 42 percent in 1945–1973; and 21 percent in 1975–2001 (chi-square = 179.48, $df$ = 4, $p$ < .01).

This change is reflected in introductory textbooks of physical anthropology published from 1932 to 2003. Up to 1969 only one author of three of 20 texts rejected race [MONTAGU 1945, 1951, 1960]. A turning point came in the 1970s when ten texts rejected race while five continued to accept the concept [LITTLEFIELD *et al*. 1982]. In the 1980s the trend increased, and in the 1990s nine texts rejected race [LIEBERMAN *et al*. 2003] and only one accepted the concept [CAMPBELL 1998]. The pattern of 1932–1969 had been completely reversed.

A third source of information also indicated changes in the status of the race concept. A series of three questionnaires was mailed to members of the American Anthropological Association. Over the course of 21 years the survey responses indicated increasing rejection of the race concept. In the 1978 series [LIEBERMAN and REYNOLDS 1978] the questionnaire was mailed to college and university researchers and teachers of physical anthropology. One of the questions asked them to agree or disagree with this statement: "Races do not exist because isolation of groups has been infrequent, populations have always interbred." Thirty-seven percent of 374 respondents agreed (48 percent response rate). In a second study in the series 42 percent ($N$ = 148) of responding physical an-

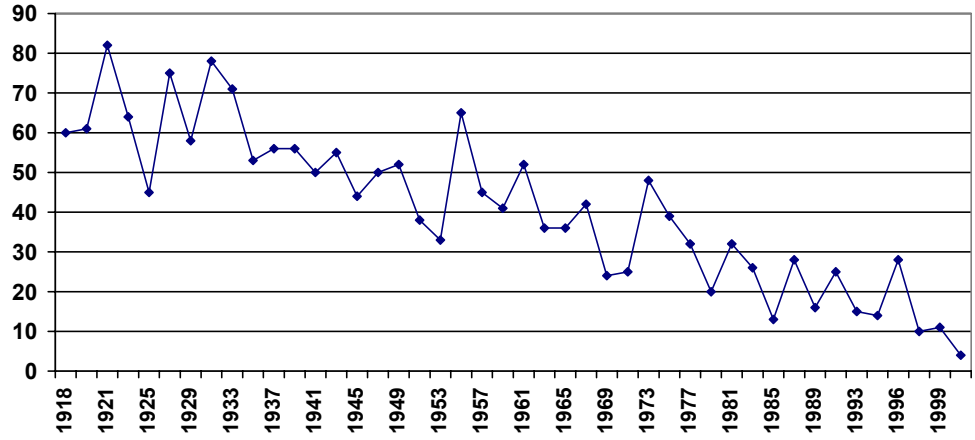


Fig. 1. Race articles as percent of human variation articles. *AJPA*, 1918–2001. Mostly odd numbered years ($r$ = .89, $p$ = .01)

**Table 1.** Race articles in the *American Journal of Physical Anthropology* in three periods, as a percent of articles on human variation

| Race | Period | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | 1918–1943 | | 1945–1973 | | 1975–2001 | | |
| | % | (N) | % | (N) | % | (N) | (N) |
| Used | 61 | (172) | 42 | (189) | 21 | (193) | (554) |
| Undecided | 5 | (15) | 6 | (25) | 5 | (44) | (84) |
| Not used | 33 | (93) | 52 | (236) | 74 | (669) | (998) |
| Total human variation articles | 99* | (280) | 100 | (450) | 100 | (906) | (1,636) |

Chi-square = 179.48, $df = 4$, $p < .01$
*Some totals vary from 100 due to rounding

thropologists rejected the race concept by disagreeing with this statement: "There are biological races in the species *Homo sapiens*" (71 percent response rate; LIEBERMAN *et al*. [1989]). The third study occurred in 1999 and presented the same statement, and 69 percent of responding physical anthropologists rejected the concept (46 percent response rate; LIEBERMAN *et al*. [2003]).

As noted, the period of change measured in different types of studies seemed to occur at different times and rates. There was a gradual decline after 1935 in the *AJPA* (Fig. 1). The textbook decline begins in the 1970s, and the surveys indicated a change in the 1980s. In part, this is because somewhat different populations are involved. Those who published in the *AJPA* were engaged in research and were more often members of the American Association of Physical Anthropology (AAPA). Those responding to surveys were listed in the *American Anthropological Association Guide to Departments and Members* (1973, 1985, 1999), less likely to be members of the AAPA and possibly more likely to be teachers of the subject than researchers. Authors of texts included both sources. It is noteworthy that the first population to evidence decline of race were the researchers. The timing of the changes varied, but over the course of the 20th century, acceptance of the race concept inherited from the 18th and 19th century had undergone significant decline.

## Explaining the decline in an accepted truth

Concepts embedded in scientific disciplines and in public opinion do not just fade away, they must be critiqued, challenged with data, and replaced by more useful concepts. It would require about half of the 20th century for the essential development of concepts and data relating to heredity and genetics to enable rejection of the thinking of the 19th century. G.W. STOCKING [1968: 163] states that "physical anthropology around 1900 had wandered far into a blind alley from which it was not really to emerge for another fifty years."

STOCKING [1968] summarized the 19th century idea of race as it was used in 1900:

> Physical anthropologists had started from a preevolutionary polygenist conception of "pure race" as an assemblage of traits manifest in every individual race member, essentially unchanged by time or circumstance. They had carried on their investigations in a period when there was much speculation about heredity but no generally accepted theory of its processes (p. 163).

At the start of the 20th century belief in race and racism were established truths in American folk beliefs and in the beliefs and publications of scientists. In 1918, in the preface to the first issue of the *American Journal of Physical Anthropology*, the editor and founder, Aleš HRDLIČKA [1918] described an important objective of physical anthropology as "the study of the more primitive human races" (p. 19). He added the "effects of racial mixtures" (p. 20), and "the growing science of eugenics" (p. 21). In 1915, he stated that those who cannot keep pace are being eliminated by nature (quoted by RANKIN-HILL and BLAKEY [1999: 115]) and, in 1927, he concluded that "the real problem of the American Negro lies in his brain" (1927: 208-9, quoted by RANKIN-HILL and BLAKEY [1999: 115]). In the early decades of the 20th century, Hrdlička was expressing the widespread views of society and the scientific community.

In the early decades of the 20th century the idea of eugenics appealed to the public and to early geneticists. The influential ideas of the time included race, racism, race purity, social Darwinism and a very simple view of dominant and recessive genes that could be used to bring about race improvement. Slowly, beginning early in the 20th century, research would challenge and qualify or disprove the elements of the race concept, but the influence of new genetic knowledge would not begin until a new paradigm, the modern synthesis, was established, starting in the 1930s, with change possibly reflected in the decline of race articles in the *AJPA* beginning in 1935 (see Figure 1).

## Influence of the modern synthesis and genetics

The period of the modern synthesis is one of rapid change in evolutionary biology from approximately 1936 to 1947 [MAYR 1980]. HUXLEY [1942] identified the evolutionary synthesis in terms of an interaction of "small genetic changes … and recombination and the ordering of this genetic variation by natural selection" [MAYR 1980: 1]. The synthesis had two effects. First, it brought to an end the conflict between those who believed evolution was the result of mutations and those who utilized natural selection as the prime mover. Second, and crucial in relation to this paper, it opened the door to an expansion of genetic analyses of populations that would in time bring an end to the viewing of races as homogeneous typologies. It did not lead directly to a rejection of the race concept, but made possible a rejection of parts of that concept that in time would contribute to the decline of race.

The thinking of T. DOBZHANSKY [1937], one of the leaders and supporters of the synthesis, illustrates the influence

of genetics on the race concept without yet rejecting it:

> In classical morphology and anthropology, races are described usually in terms of the statistical averages for all the characters in which they differ from each other… The difficulty is however that from the point of view of genetics such an attempt to determine to which race a given individual belongs is sometimes an unmitigated fallacy. The fact which is very often overlooked in making such attempts is that racial differences are more commonly due to variations in the relative frequencies of genes in different parts of the species population than to an absolute lack of certain genes in some groups and their complete homozygosis in others (p. 61).

DOBZHANSKY [1937] states that the "fundamental units of racial variability are populations and genes, not the complexes of characters which connote in the popular mind a racial distinction" (p. 62). In this way Dobzhansky led the way from typologies of racial similarity to genetic thinking. MONTAGU [1942] made early use of genetics and the modern synthesis in his proposal to replace the race concept with that of ethnicity which referred to an ethnic group as a population whose genetic makeup changed in relation to geographic and cultural barriers. He also made use of the principles of gene flow and independent assortment in meiosis to disprove the myth of racial homogeneity and purity [MONTAGU 1941].

The wide-spread belief that races were separate homogeneous populations was analyzed in the study by geneticist LEWONTIN [1972] of 17 hereditary traits in which he found that only 6.3 percent of genetic diversity is accounted for by differences between races (see also RELETHFORD [2002], BROWN and ARMELAGOS [2001]). This research was summarized in the phrase that there is more variation within populations than among them. It became a widely-used genetic fact to refute the notion that races were discrete and different from each other and that their members had very similar traits.

The belief in the lesser intelligence of African-Americans and European superiority, was a companion to the idea of race in the 19th and much of the 20th century [HERRNSTEIN and MURRAY 1994]. Did European ancestry mean greater intelligence? Intelligence tests were given to 350 African American school children in Philadelphia [SCARR *et al*. 1977]. Each person's degree of African and European ancestry was estimated from blood samples indicating 12 hereditary traits that were more likely to have either African or European ancestry, corroborated by degree of skin color. The researchers found that "Blacks who had a large number of European ancestors did no better or worse than blacks of almost total African ancestry" [SCARR and WEINBERG 1978: 32].

The complete rejection of the existence of race was extended back hundreds of thousands of years by geneticist TEMPLETON [1998]:

> Because of the extensive evidence for *genetic interchange* through population movements and recurrent gene flow going back at least hundreds of thousands of years ago, there is only one evolutionary lineage of humanity and there are no subspecies or races under either the traditional or phylogenetic definitions. Human evolution and population structure have been and are characterized by many locally differentiated populations coexisting at any given time, but with sufficient

> genetic contact to make all of humanity a single lineage sharing a common long-term evolutionary fate (p. 647, emphasis added).

TEMPLETON [2002] also summarized the arbitrariness and lack of empirical consistency in race categories:

> …if the frequency of blood types is used as a marker, the Irish and Nigerians would be placed in the same biological race (see Boyd 1950). Because Melanesians and some Africans "share dark skin, hair texture, and cranial-facial morphology, they have sometimes been placed in the same race, but genetically Europeans are closer to Africans and Melanesians than Africans and Melanesians are to each other (p. 46).

Late in the 20th century when studies of apes had accumulated it was possible to compare the amount of genetic variation with variation among chimpanzees, which were 98 percent similar to humans. The comparisons to the "great apes indicated that humans are unique in having little genetic variation as well as little genetic structure in their gene pool" [KAESSMAN and PÄÄBO 2002: 1].

Further evidence of the influence of the 20th century concepts and data is present in 1996 in the American Association of Physical Anthropologists' statement rejecting the 19th century idea of race. The statement, presented as a revision of the 1964 UNESCO statement on race (see MONTAGU [1972]) asserted that (*AAPA Statement on biological aspects of race* [1996: 569-70], emphasis added):

> As scientists who study human evolution and variation, we believe that we have an obligation to share with other scientists and the general public our current understanding of the structure of *human variation* from a *biological perspective*. Population conceptualization of race was derived from 19th and early 20th century scientific formulations. These old racial categories were based on externally visible traits, primarily skin color, features of the face, and the shape and size of the head and body, and the underlying skeleton. They were often imbued with non-biological attributes, based on social constructions of race.

The *AAPA Statement* [1996] goes on to emphasize biological variation:

> …much of the biological variation among populations involves modest *degrees of variation* in the frequency of shared traits…
>
> …There is great genetic diversity within all human populations. Pure races, in the sense of *genetically homogeneous populations, do not exist* in the human species today, nor is there any evidence that they have ever existed in the past…
>
> …The geographic pattern of genetic variation within this array is complex, and presents *no major discontinuity*. Humans cannot be classified into discrete geographic categories with absolute boundaries…
>
> …The human features which have universal biological value for the survival of the species are not known to occur more frequently in one population than in any other. Therefore it is *meaningless from the biological point of view to attribute a general inferiority or superiority to this or to that race*.
>
> …For many millennia, human progress in any field has been *based on culture* and not on genetic improvement…
>
> Partly as a result of *gene flow*, the hereditary characteristics of human populations are in a state of perpetual flux. Distinctive local populations are continually coming into and passing out of existence.
>
> The biological consequence of mating depend only on the individual genetic makeup of the couple, and not on their racial classifications. Therefore, *no biological justification* exists for restricting intermarriage between persons of different racial classifications.

> There is *no necessary concordance between biological characteristics and culturally defined groups*. On every continent, there are diverse populations that differ in language, economy, and culture. There is no national, religious, linguistic or cultural group or economic class that constitutes a race. However, human beings who speak the same language and share the same culture frequently select each other as mates, with the result that there is often some degree of correspondence between the distribution of physical traits on the one hand and that of linguistic and cultural traits on the other.
>
> …genetic capacity is known to differ among individuals. *The peoples of the world today appear to possess equal biological potential for assimilating any human culture*. Racist political doctrines find no foundation in scientific knowledge concerning modern or past human populations (pp. 569-70, emphasis added).

## The influence of clines

Strong genetic influence weakening the race concept is also seen growing out of the concept of clines and supporting data. Clines referred to gradations of genotypes or phenotypes over a geographic area, and were distributed within and across racial and national boundaries. In 1938 HUXLEY proposed the concept of clines, but clarified that it was not a taxonomic entity, otherwise it might be confused with race. At about the same time HUXLEY and HADDON'S [1936] book, *We Europeans*, presented one of the early maps of a cline showing gradations in the B blood type starting at a low frequency in Spain and increasing towards Moscow. They advocated replacing the concept of race with that of ethnic groups, yet they also presented phenotypic description of the traditional human races, illustrating the difficulty of abandoning racial labels and their morphology.

The presence of gradations and their discordance had been noted even earlier in research by Boas. In Sweden "the most striking point is the lack of agreement between [hair color and stature] among themselves [and] with the variability of the cephalic index" [BOAS 1918: 425]. The concept of cline began to enter anthropological awareness in the 1950s when LIVINGSTONE [1958] published data indicating that the clinal distribution of the sickle-cell allele ($Hb^s$) corresponded to the distribution of malaria throughout West Africa, the Mediterranean, and South Asia, demonstrating that $Hb^s$ is not confined to one so-called race and that alleged boundary lines between so-called races are really continuous gradations, not merely transitions between one race and another. In the early 1960s LIVINGSTONE [1962] participated in the debate over the validity of race and declared that "there are no races, there are only clines" (p. 279).

C.L. BRACE [1964] made use of the clinal concept urging the study of one trait at a time in order to identify the explanation for its geographic distribution. He also published several clinal maps of skin pigmentation, nasal index, hemoglobin S, and tooth size, showing their discordant distribution did not support the idea of racial boundary lines. Over several decades J. BIRDSELL [1993] used the cline concept for analyzing data on Australian aborigines which also illustrated discordant distribution. In 1975 he rejected his earlier use of the race concept [BIRDSELL 1972], and announced that "The use of

**Table 2.** Of those who agree with the following criticisms of the race concept, what percent agree/disagree that "There are biological races in the species *Homo sapiens*"?

| With what dimensions critical of the concept of biological race do you agree? | Agree % (N) | Neutral % (N) | Disagree % (N) | Total* % (N) |
|---|---|---|---|---|
| 1. Human biological variation is best understood in terms of continuous gradations (clines) not races. | 13 (72) | 8 (43) | 79 (440) | 100 (555) |
| 2. Pure races, in the sense of genetically homogenous populations, do not exist in the human species today, nor is there any evidence that they ever existed in the past. | 15 (84) | 7 (39) | 78 (425) | 100 (548) |
| 3. There is more variation within traditionally conceived biological races than among them. | 13 (67) | 7 (36) | 80 (406) | 100 (509) |
| 4. Gene flow between populations invalidates labeling them as distinct races. | 6 (72) | 6 (27) | 88 (395) | 100 (451) |

*Total numbers vary because of no answers to same items.
Chi-square = 21.96, $df = 6$, $p = 0.002$

the term race has been discontinued because it is scientifically undefinable and carries social implications that are harmful and disruptive" [BIRDSELL 1975: 505].

The foregoing genetic and natural science research studies were developed increasingly during the 20th century and continued into the 21st. They made it progressively more unproductive to use the race concept for research. As the century moved on, and as the above data and concepts were presented, more and more anthropologists were using them to develop their critique of the idea of race. Lieberman and Kirk's survey of 1999 asked respondents about their support or rejection of biological race and found that among those who rejected the race concept 79 percent supported analyzing variation in terms of clines rather than races, 78 percent rejected the idea of homogeneous populations, 80 percent supported more variation within so-called races than among them and, for 88 percent, gene flow invalidated labeling distinct races (Table 2).

## Development of the culture concept: Boas and Columbia

Early in the 20th century belief in the fixed and unchanging nature of race traits was another idea accepted by many anthropologists. Possibly the first to challenge it with empirical data was F. Boas. His 1912 research using metric evidence demonstrated small but significant changes in stature and head shape of second-generation children of immigrants, thus disproving the idea that race characteristics do not change, and demonstrating that race biology was

influenced by environment. Although the changes were relatively small, it was an idea that ran contrary to the idea of fixity of race and racial determination that prevailed at that time [GRAYLEE *et al*. 2003]. Boas had begun the critique of the race concept that gave both heredity and environment a role to play. The critique of race would be led by his students at Columbia University for almost half a century as they developed the culture concept.

The quotations cited earlier from the AAPA statement on race are based on the genetic research of the 20th century and on the development of the concept of culture, as seen in the several references to culture: that human progress is based on culture and is not derived from genetic improvement; that there is no necessary concordance between biological characteristics and culturally defined groups, and any individual or group may learn any culture. This idea of each society having a culture grew out of the research of Boas. From 1897 to 1902, through his leadership of the Jessup North Pacific Expedition, he gathered the data to disprove the biological determinism that linked race, language, and culture. He did this by showing that regional cultures exchange myths, customs, and language. Through his critique of unilineal evolution he demonstrated that the hierarchy of racial superiority was fallacious. Boas confronted race and racism using ethnographic explanations of cultural differences [BOAS 1911, 1927]. The idea of culture provided an alternative to biological race as a way of analyzing differences between societies. Cultures, as different ways of living, could only be explained by looking at the ecological setting of a population, its contact with other cultures, the exchanging of myths, customs and language, all of which were parts of that society's complex history. The comparative empirical evidence was readily available. The Dutch in South Africa built racial apartheid, unlike their cousins in the Netherlands who developed a pluralistic society in which Africans occupied a wide range of occupations despite being perceived as inferior [BLAKELY 1993]. Each of the empires of the 16th to the 20th centuries developed diverse colonial cultures in relation to differing circumstances, but none were free of racism.

Also illustrative is the notion that any individual could learn any culture, yet can help bring about change in the culture they are learning. During the 20th century, students of Boas included more women, immigrants, African Americans, Puerto Ricans, and Jews. They had experienced discrimination based on their alleged biological inferiority. In the context of discrimination and historical change they would take the new data seriously and examine its empirical validity. These new recruits into anthropology would become part of the leadership that would reject race and racism.

We have reviewed the scientific influences on race from Boas at Columbia University and, from the accumulation of genetic knowledge during the 20th century, from the new concept of culture and the entry of persons from different backgrounds into the anthropological discipline. Another major source of new knowledge and new influence came from the students of Hooton at Harvard and, as we will see, especially S. Washburn.

## A new physical anthropology: Hooton and Washburn

While Boas was studying changes in head form and had begun training doctoral students in cultural anthropology at Columbia University, Hooton, starting in 1913, was training physical anthropologists at Harvard. Hooton's research was dedicated to reconstructing racial histories from skeletal populations. In *The Indians of Pecos Pueblo*, he classified several prehistoric skulls to which he assigned racial labels. For Hooton there were 29 races and subraces [STASKI and MARKS 1992]. He was also committed to explaining behaviors as an expression of biology.

From 1926 to 1951 Hooton had 28 doctoral students who completed dissertations. There were 10 dissertations that included race in their title. A few of these authors would be lifelong defenders of the concept, i.e., C. Coon 1928, A. Brues 1940, and S. Garn 1948 (dates listed here and below are for dissertations listed in GILES [1997: 500]). In various ways many of Hooton's doctoral students used the concept of race but qualified the 19th century ideas about it. J.L. Angel (1942) studied ancient Greek skeletal material and demonstrated that the idea of racial purity was disproved by the diverse ancestry reflected in those bones. J. Birdsell (1942) demonstrated three ancestral sources of Australian Aborigines, developed extensive clinal data on them and, as stated earlier, would later completely reject the race concept. W. Howells (1934) would utilize the race concept, but gathered worldwide cranial measurements that illustrate both diversity and "descriptive typology" [ARMELAGOS and VAN GERVEN 2003], and eventually came to prefer the term population [OUSLEY and JANTZ 1996]. F. Hulse (1934) would later write on races as changing episodes over time. G. Lasker (1945) was a critical skeptic about race. In one way or another most of these students of Hooton qualified the race concept making it easier for others to reject it.

A link between the influences of Columbia and Harvard can be seen in H. Shapiro's 1926 study of the descendants of Tahitian and English mutineers on the Bounty disproving the idea that racial admixture was harmful. Shapiro produced the first Ph.D. thesis under Hooton, and was much influenced by the Boasian orientation. He also was an adjunct faculty member at Columbia for many years.

The most influential of Hooton's doctoral students would be S. Washburn. His dissertation "A Preliminary Study of the Skeletons of Langurs and Macaques" (1940, in GILES [1997]), in part, reflected Hooton's interests. Among the dissertations by Washburn's students (listed in SPENCER [1997]) were R. Holloway 1964; R. Tuttle 1965; A. Almquist 1972; F.C. Howell 1953; and A. Mann 1968. Eleven of his doctoral students worked on primate and animal behavior. Among them were I. DeVore 1962; P.J. Dolhinow 1963; P. Simonds 1963; J.B. Lancaster 1996; A. Zihlman 1966; S. Chevalier-Skolnikoff 1970; K.R. Gibson; and R.B. Lee. Of all of these, it should be made clear that most did not finally reject race, and did not do research using it or write in defense of it. Two of Washburn's doctoral students who completed dissertations on molecular anthropology were V. Sarich (1967) and M. Weiss (1969).

Sarich would be a lifelong defender of race, but M. Weiss would join with A. Mann to reject it in their introductory physical anthropology textbooks [WEISS and MANN 1975, 1978].

Washburn's indirect impact on race is seen in that the research of most of his students at Harvard, Chicago, and Berkely concerns primate biology and/or primate behavior, part of the trend away from the study of races made possible by new specializations. His direct influence on the race concept started in the late 1940s and the 1950s. WASHBURN [1953] encouraged physical anthropologists to "replace typological constructs with the core ideas of the new synthesis of evolutionary theory – the genetic diversity of populations and the modification of gene frequencies through selection, mutation, and drift" [PATTERSON 2001: 121]. In 1953 WASHBURN declared that "the goal of physical anthropology should not be the classification of human diversity but rather explanation of the processes and mechanisms that gave rise to it" [PATTERSON 2001: 123, WASHBURN 1963].

WASHBURN [1951, 1953] emphasized process. "Natural selection, he insisted, operates on functional complexes, not on isolated traits" [ZIHLMAN 2001: 182]. Washburn's view stemmed from his efforts to analyze processes of skeletal evolution and function. His work was related to the major shift in biology occurring during the 20th century based on thinking increasingly in context of the neo-Darwinian synthesis. Washburn co-sponsored with Dobzhansky the 1950 symposium on the "Origin and Evolution of Man" held at Cold Spring Harbor attended by 129 persons, helping to diffuse the modern synthesis of genetics and Darwinian theory to prominent anthropologists and geneticists.

Washburn's activities extending beyond the classroom and beyond his work with his students included the Summer Seminars in Anthropology from 1945 to 1952, and organizing two major Wenner-Gren Conferences – "The Social Life of Early Man" in 1959 and "Classification and Human Evolution" in 1962. He was active and influential in the Wenner-Gren Foundation which was a major source of funding and institutionalization of the "new physical anthropology" in part, by sponsoring 47 research projects and conferences from 1951 to 1961 [HARAWAY 1988].

PATTERSON [2001] summarized several forces at work in the race controversy in the 1960s, including the thinking of Washburn:

> In 1962, Washburn (1963: 521) was asked by the Executive Board of the American Anthropological Association to address the subject of race in his presidential address to that body. The issues of race and racism were once again making front-page headlines in the United States because of the school integration mandated by the American Supreme Court's 1954 decision in *Brown v. Board of Education*. Race and racism were also debated in virtually every number of *Current Anthropology* published between October 1961 and October 1963. These issues were provoked initially by Juan Comas's (1961) critique of articles in the first issue of *The Mankind Quarterly* which had recycled old eugenic arguments that purported to support claims regarding the mental inferiority of non-Whites. The publication of Carleton Coon's (1904-81) The Origin of Races in 1962 added fuel to the fire (p. 122).

WASHBURN [1963] explained his view, putting race into a minor key, unlike the emphasis on race as a core concept that had prevailed in the first decades of the 20th century.

> Since races are open systems which are intergrading, the number of races will depend on the purpose of the classification. This is, I think, a tremendously important point. It is significant that as I was reviewing classifications in preparing this lecture, I found that almost none of them mentioned any purpose for which people were being classified. Race isn't very important biologically (p. 524).

Washburn was not directly rejecting race, but reducing its biological importance, possibly a strategic approach to what in the 1960s was a widely accepted concept.

The diverse interests of Washburn's students illustrates the change occurring as physical anthropology came to rename itself biological anthropology. S. GARN [1982] commented on this diversification as an explanation for the decreasing frequency of the study of races as reflected in textbooks of introductory anthropology in the 1970s.

> …physical anthropologists have found many new directions of interest, such as bone biology, primate behavior, dental anthropology, demography, epidemiology, and human nutrition. These newer interests are reflected in contemporary texts and especially in the several journals that physical anthropologists support (p. 649).

We believe this broadening of research areas to be a significant factor. Physical anthropologists research and publish less on race because they attend to other areas of inquiry where the concept is of little or no use. Illustrative of this is that at its annual meetings, the AJPA "collaborates with seven other organizations" including the Human Biology Association, Paleopathology Association, Dental Anthropology Association, American Association of Dermatoglyphics, and the Primate Biological Behavior Interest Group [LARSON 2000]. Paleoanthropology and genetic or molecular anthropology must be added to Garn's list of new specializations.

The rejection of the 19th century race concept became evident late in the 20th century, but it had begun much earlier and taken most of the century for the research that would make the concept untenable to develop. Boas had began that research late in the 19th century, many subsequent studies (examples listed above) built up momentum, and WASHBURN [1963] supported the neosynthetic framework that consolidated these developments and allied the new physical anthropology with the Boasian contributions. G. STOCKING [1968] noted this connection:

> …when a "new" physical anthropology emerged around 1950, it bore marked, if only analogical, similarity to Boas' thinking … the main similarity is a common evolutionary dynamic. …He had a definite idea of what a rigorous evolutionism required in terms of process on the population level. …Viewed as a whole, his critique of racial formalism in physical anthropology undercut many of the traditional hierarchical assumptions of racial thinking in its broader and more popular forms (pp. 188-9).

A similar view is expressed more recently by R. CASPARI [2003]:

> To some extent, the new physical anthropology espoused by Washburn represented a re-alliance with the Boasian parts of anthropology that had questioned the assumptions of the race concept since the 1890s. (p. 68).

## What is left of biological race?

According to CASPARI [2003], American physical anthropologists have heeded Washburn's call for a new physical anthropology in that they have moved from making types (races) their subject matter to populations as the object of study. Caspari also notes that two of the three most salient attributes or dimensions of the race concept have "been less amenable to change" (p. 66). The dimension that has changed the most is *biological determinism* (i.e., racism) of which CASPARI [2003] writes that: "Biological determinism is not a necessary part of racial typologies and can be rejected without the rejection of the race concept as a whole" (p. 67).

According to CASPARI [2003], the two dimensions of race that have changed least are *essentialism* and *evolutionary essentialism* (clades). Essentialism refers to the "intrinsic biology of the race" (p. 66). Evolutionary essentialism is based on subspecific taxonomic categories that are conceptualized as discrete groups whose essences (racial traits) had separate evolutionary histories, and "races like species categories, were depicted as branches on an evolutionary tree… [with] independent evolution, at different rates." CASPARI [2003] explains that "clades, defined as monophyletic groups… include an ancestral taxon and all its descendants; clearly, races are *not* monophyletic and their depiction as clades is inappropriate" (p. 67, emphasis in original). We agree that many research papers inappropriately present essentialism of human races and cladistic diagrams based on genetic or morphometric distances like species on a tree.

We also agree that there has been a shift from race to populations as described by Caspari. We add one qualification to that based on examining all issues of the *AJPA* for the year 2001. In those issues we found only two articles using the race concept, and eleven using the term population. However, we found 17 papers referring to the people studied by some form of group name: Tibetan, Samoan, British, Maya, Cape colored, etc. The name may be a nation, geographic location, an ethnic label, or possibly "race", or population.

We had expected to find more explicit use of concepts of ethnicity and cline in the *AJPA*, but in the 2001 issue we found little of either, and one reference to ethnicity stated that the two ethnic groups studied have remained distinct breeding populations [MADRIGAL *et al*. 2001]. As in the history of the *AJPA* from 1918 onward, the subject matter, be it race, population, or some other entity, is not adequately defined. In general, we agree that we are in a state of transition from race to population, with need for greater clarification of the concept of population.

## Science and history, not political correctness

Are some scientific concepts influenced by history? Does the inevitable historical association of race and racism allow scientists to study race but ignore that connection? The 1996 AAPA statement quoted above, examines both race and racism. The developing genetic knowledge of the 20th century did not give scientific basis to racism and its eugenic companion, but neither did it

suddenly bring down the hierarchy of racism that ruled the thinking of the public and most scientists in the first decades of the 20th century:

> …in the 1930s a number of geneticists began to realize that heredity was more complex than had been previously thought. As Provine has shown, however, there was no new scientific evidence introduced in the crucial period between 1939 and 1949, the period of decisive shift in attitudes toward race in most western countries. As Provine points out, it was the war – and (especially) postwar revelations of Nazi genocide – that brought about the end (insofar as it ended) of the racialist consensus (PROCTOR [1988: 175], citing Provine 1973).

In 1945 the Second World War ended and according to the historian, G.M. FREDRICKSON [2002]:

> The Second World War… was the climax and turning point in the history of racism in the twentieth century. It, and the Cold War that followed quickly on its heels, revolutionized the context within which groups thought of as "races" confronted each other and interacted. Events in the 1940s and 1950s would establish patterns of thought and action concerning race and racism that would endure for the rest of the century. The specific results of the war that most shaped attitudes toward race were the Holocaust and the beginning of decolonialization in Asia and Africa. The first aroused widespread soul-searching and moral revulsion by revealing what happened when extreme racism was carried to its logical outcome. The second eventually gave geopolitical significance to many new independent nations that were composed of people whose skin color made them abhor and denounce the persistence of white supremacy (p. 127).

FREDRICKSON [2002] adds that "the horrible truth revealed by the liberation of the death camps in 1945 could not be evaded" (p. 128). For example, the eugenics movement that had benefited from scientific respectability in the United States and Britain in the first decades of the 20th century "did not survive the revelation of what the Nazis had done in its name" (p. 128).

As stated, according to several sources the developing genetic knowledge did not diminish the race concept, but at first stimulated "the quest for new and more *scientific* racial traits. …The impact of genetics had to wait until the development of a synthetic theory of evolution in the 1930s" (ARMELAGOS and VAN GERVEN [2003: 55], emphasis in original). That full impact of the synthetic theory did not occur until the 1950s, and followed the revelations of the Nazi atrocities of World War II. We argue that the increasingly significant impact of genetics occurred following these events. Some aspects of genetics had been available in the early 1940s in the writing of A. MONTAGU [1941, 1942], but their significance was not widely recognized until the more complete awareness of genocide later in the 1940s.

It would be naive to reject the influence of history and equally naive to accept its influence without considering the accumulating genetic knowledge. Many of the supporters of eugenics in the 1920s and 1930s were from the political left, they would become opponents of racism in the 1940s, and they would have the support of the accumulating scientific research, and would thus have been sensitized to its significance by historical events.

Occasionally a student will suggest that the race concept has been rejected

because of political correctness arising from the horrified reaction to the holocaust in World War II Nazi Germany. We must acknowledge that political correctness is a generic aspect of human behavior. Without conformity to group expectations human societies would be anarchies devoid of cultural patterns. An example of the negative consequences of political correctness is seen in the widespread belief that there were superior and inferior races. Colonialism, involving the conquest, exploration and slaughter of millions of people in the Americas, Africa and parts of Asia was rationalized by the belief in the inferiority of the alleged races inhabiting those areas [COCKER 1998]. The rejection of the race concept by most anthropologists beginning most recently in the 1960s, was based on the genetic evidence reviewed earlier. Conformity to political correctness was not the cause of these changes; rather awareness of the uses of race in colonialism, slavery, segregation, and in the holocaust stimulated reexamination of the race concept using the new genetic data that was accumulated throughout the 20th century. The presence of new genetic data does not guarantee that the data will be given careful consideration. This consideration came about as a new generation of anthropologists with new biographical experiences entered the discipline and examined the new data that developed during the century. Those who characterize these developments as political correctness are using simplistic reductionism, and a naive conception of science in an ivory tower. Scientists must struggle with and develop new data in the context of biography and history.

## Summary

The concept of biological race has declined significantly in frequency of use in physical anthropology in the United States during the 20th century. We present three kinds of evidence of this rejection of what was a core concept: (1) The frequency of articles using the race concept in the *AJPA* declined from 60 percent in 1918 to 4 percent in 2001 ($r$ = -.89, $p$ = .01). (2) Content analysis of university level textbooks of introductory physical anthropology for 1980-99 found only one textbook which supported the race concept. (3) A series of mailed questionnaires to members of the American Anthropological Association found that while 37 percent of responding physical anthropologists rejected the race concept in 1978, this rose to 69 percent in 1999.

Explaining this conceptual revolution requires consideration of three kinds of changes. First, new theory and clinal data, second, the context of history (see WEISS [2003]), and third, new biographical experiences of anthropologists that connect the other two kinds of change.

The new theory developed in two phases. In the first decades of the 20th century F. BOAS [1911] and his students develop the theory of culture, explaining why societies differ and at the same time rejecting racial determinism, and racial hierarchy. Beginning in the early 1950s S. WASHBURN [1951] rejects racial typology and advocates the study of population processes, bringing the modern evolutionary synthesis into physical anthropology. The new data consists of the many detailed studies, early in the

century, of the culture of various human societies demonstrating how change occurs, and the fact that people of apparently similar race have many different cultures and that environment may alter biology (BOAS 1912). After mid-century, F. LIVINGSTONE'S [1958] study of sickle cell gene frequencies provided a clinal geographic (gradations) alternative to discrete and homogenous races, and C.L. BRACE [1964] persuasively held that the study of each clinal distribution provides a useful approach to the study of human variation. R. LEWONTIN [1972] utilized genetic data that demonstrated that most human variation existed within populations (races), and very little between them.

These and other studies provided the basis for challenging the race concept. But change would be accelerated by historical developments that helped overcome the power of thinking in terms of race and racism. The Great Depression, beginning in 1929, provided persuasive evidence that poverty was not controlled by genetic heredity, despite the continued eugenic orientation of scientists. More influential was the knowledge of the use of race to justify extermination of Jews, Gypsies, and Poles in World War II [FREDRICKSON 2002]. There is a tendency for some to dismiss the decline of race as the result of political correctness. That position allows those who favor the race concept to continue to do so. In fact, the fall of race is due the development of solid empirical evidence, new theoretical approaches, and the sensitizing assistance of historical events.

## References

*AAPA Statement on biological aspects of race*, 1996, Am. J. Phys. Anthropol., **101**, 569-70

*American Anthropological Association*, *Guide to Departments and Members*, 1973, 1985, 1999, Am. Anthropol. Assoc., Arlington, VA

ARMELAGOS G.J., D.P. VAN GERVEN, 2003, *A century of skeletal biology and paleopathology: Contrasts, contradictions, and conflicts*, Am. Anthropol., **105**, 53-64

BIRDSELL J.B., 1972, *Human Evolution, an Introduction to the New Physical Anthropology*, Rand McNally, Chicago

BIRDSELL J.B., 1975, *Human Evolution, an Introduction to the New Physical Anthropology*, (2nd ed.), Rand McNally, Chicago

BIRDSELL J.B., 1993, *Microevolutionary Patterns in Aboriginal Australia: A Gradient Analysis of Clines*, Oxford Univ. Press, New York

BLAKEY A., 1993, *Blacks in the Dutch World: The Evolution of Racial Imagery*, Indiana Univ. Press, Bloomington

BOAS F., 1911, *The Mind of Primitive Man* [1924], Macmillan, New York

BOAS F., 1912, *Changes in the bodily form of descendants of immigrants*, Am. Anthropol., **14**, 530-62

BOAS F., 1918, *Notes on the anthropology of Sweden*, Am. J. Phys. Anthropol., **1**, 415-26

BOAS F., 1927, *Primitive Art* [1955], Dover, New York

BOYD W.C., 1950, *Genetics and the Races of Man, An Introduction to Modern Physical Anthropology*, D.C. Health & Co., Boston

BRACE C.L., 1964, *A nonracial approach towards the understanding of human diversity*, [in:] *The Concept of Race*, A. Montagu (ed.), Free Press, New York, pp. 103-152

BROWN R.A., G.J. ARMELAGOS, 2001, *Apportionment of racial diversity: A review*, Evol. Anthropol., **10**, 34-40

CAMPBELL B.G., 1998, *Humankind Emerging*, (5th edition), Little, Brown, Glenview, Illinois

CASPARI R., 2003, *From types to populations: A century of race, physical anthropology and the American Anthropological Association*, Am. Anthropol., **105**, 65-76

COCKER S., 1998, *Exterminate All the Brutes*, New Press, New York

DOBZHANSKY T., 1937, *Genetics and the Origin of Species*, Columbia Univ. Press, New York

FREDERICKSON G.M., 2002, *Racism: A Short History*, Princeton Univ. Press, Princeton, New Jersey

GARN S.M., 1982, *Comment*, Curr. Anthropol., **23,** 649

GRAVLEE C.C., 2003, *Boas's changes in bodily form: The immigrant study, cranial plasticity, and Boas's physical anthropology*, Am. Anthropol., **105**, 326-32

HARAWAY D.J., 1988, *Remodeling the human way of life: Sherwood Washburn and the new physical anthropology*, 1950-1980, [in:] *Bones, Bodies, and Behavior: Essays in Biological Anthropology*, G.W. Stocking Jr. (ed.), Univ. of Wisconsin Press, Madison, WI, pp. 206-59

HERRNSTEIN R.J., C. MURRAY, 1994, *The Bell Curve: Intelligence and Class Structure in the United States*, Free Press, New York

HOOTON E., 1930, *The Indians of Pecos Pueblo: A Study of Their Skeletal Remains*, Yale Univ. Press, New Haven, CT

HRDLIČKA A., 1918, *Physical Anthropology, Its scope and aims; Its history and present status in America*, Am. J. Phys. Anthropol., **1**, 3-33

HUXLEY J.S., 1938, *Clines: An auxiliary taxonomic principle*, Nature, **142**, 219-20

HUXLEY J.S., 1942, *Evolution, the Modern Synthesis*, Allen and Unwin, London

HUXLEY J.S., A.C. HADDON, 1936, *We Europeans: A Survey of "Racial" Problems*, Cambridge Univ. Press, New York

KAESSMANN H., S. PÄÄBO, 2002, *The genetical history of humans and the great apes*, J. Int. Med., **251**, 1-18

LARSON C.S., 2000, *A view on the science: Physical anthropology at the millennium*, Am. J. Phys. Anthropol., **111**, 1-4

LEWONTIN R.C., 1972, *The apportionment of human diversity*, Evol. Biol., **6**, 381-98

LIEBERMAN L., 1968, *The debate over race*, Phylon, **29**, 127-41

LIEBERMAN L., L.T. REYNOLDS, 1978, *The debate over race revisited: An empirical investigation*, Phylon, **39**, 333-43

LIEBERMAN L., R.C. KIRK, A. LITTLEFIELD, 2003, *Perishing paradigm: Race 1931-99*, Am. Anthropol., **105**, 110-13

LIEBERMAN L., B.W. STEVENSON, L.T. REYNOLDS, 1989, *Race and anthropology: A core concept without consensus*, Anthropol. Ed. Quart., **20**, 67-73

LITTLEFIELD A., L. LIEBERMAN, L.T. REYNOLDS, *1982, Redefining race: The potential demise of a concept*, Curr. Anthropol., **51**, 797-802

LIVINGSTONE F.B., 1958, *Anthropological implications of sickle cell gene distribution in West Africa*, Am. Anthropol., **30**, 533-62

LIVINGSTONE F.B., 1962, *On the non-existence of human races*, Curr. Anthropol., **3,** 279-81, 470

MADRIGAL L., B. WARE, R. MILLER, G. SAENZ, M. CHAVEZ, D. DYKES, 2001, *Ethnicity, gene flow, and population subdivision in Limón, Costa Rica*, Am. J. Phys. Anthropol., **114**, 99-108

MAYR E., 1980, *Prologue: Some thoughts on the history of the evolutionary synthesis*, [in:] *The Evolutionary Synthesis: Perspectives on the Unification of Biology*, E. Mayr & W.B. Provine (eds.), Harvard Univ. Press, Cambridge, Massachusetts, pp. 1-48

MONTAGU A., 1941, *The concept of race in the light of genetics*, J. Heredity, **23**, 243-48

MONTAGU A., 1942, *Man's Most Dangerous Myth: The Fallacy of Race*, Columbia Univ. Press, New York

MONTAGU A., 1945, *An introduction to physical anthropology*, C.C. Thomas, Springfield (1951 2nd edition, 1960 3rd edition)

MONTAGU A., 1951, *Statement on race*, Henry Schuman, New York

MONTAGU A., 1972, *Statement on Race. The Four Statements by UNESCO*, (3rd ed.), Oxford Publ., New York

OUSLEY S.D., R. JANTZ, 1996, *Fordisc 2.0: Personal Computer, Forensic Discriminant Functions*, Univ. of Tennessee Press, Knoxville, TN

PATTERSON T.C., 2001, *Social History of Anthropology in the United States*, Berg Publ., Oxford

PROCTOR R., 1988, *From anthropologie to rossenkunde in the German anthropological tradition*, [in:] *Bones, Bodies, and Behavior: Essays in Biological Anthropology*, W. Stocking Jr. (ed.), Univ. of Wisconsin Press, Madison, WI, pp. 138-79

PROVINE W., 1973, *Genetics and the biology of race crossing*, Science, **182**, 790-96

RANKIN-HILL L.M., M.L. BLAKEY, 1999, *W. Montague Cobb: Physical anthropologist,*

*anatomist, and activist*, [in:] *African American Pioneers in Anthropology*, I.E. Harrison & F.V. Harrison (eds.), Univ. of Illinois Press, Urbana and Chicago, pp. 101-36

RELETHFORD J.H., 2002, *Apportionment of global genetic diversity based on craniometrics and skin color*, Am. J. Phys. Anthropol., **118**, 393-98

SCARR S., A. PAKSTIS, S.H. KATZ, W.B. BARKER, 1977, *The absence of a relationship between degree of white ancestry and intellectual skills within the black populations*, Human Genetics, **39**, 69-86

SCARR S., R.W. WEINBERG, 1978, *Attitudes, interests, and IQ*, Human Variation, **1**, 29-36

SPENCER F., 1997, *History of Physical Anthropology, An Encyclopedia*, Vol. 2., Garland Publishing, New York and London

STASK E., J. MARKS, 1992, *Evolutionary Anthropology: An Introduction to Physical Anthropology and Archaeology*, Harcourt Brace Jovanovich, Fort Worth

STOCKING G.W., JR., 1968, *Race, Culture and Evolution: Essays in the History of Anthropology*, Free Press, New York

TEMPLETON A.R., 2002, *The genetic and evolutionary significance of human races*, [in:] *Race and Intelligence: Separating Science from Myth*, J.M. Fish (ed.), Lawrence Erlbaum Association, Mahwah, NJ, pp. 31-56

TEMPLETON A.R., 1998, *Human races: A genetic and evolutionary perspective*, Am. Anthropol., **100**, 632-50

WASHBURN S., 1951, *The New Physical Anthropology*, Transactions of the New York Academy of Sciences, Series II, **13**, 298-304

WASHBURN S., 1953, *The strategy of physical anthropology*, [in:] *Anthropology Today, an Encyclopedic Inventory*, A.L. Kroeber (ed.), Univ. of Chicago Press, Chicago, pp. 714-27

WASHBURN S., 1963, *The study of race*, Am. Anthropol., **65**, 521-31

WEISS, K., 2003, *Ludwick Fleck and the Art-of-Fact*, Evol. Anthropol., **12**, 168-72

WEISS, M.L., A.E. MANN, 1975, *Human Biology and Behavior: An Anthropological Perspective*, Little, Brown, Boston (1978, 2nd ed.)

ZIHLMAN L., 2001, *In memoriam, Sherwood Washburn, 1911-2000*, Am. J. Phys. Anthropol., **116**, 181-83

## Streszczenie

Częstość posługiwania się pojęciem rasy biologicznej w Stanach Zjednoczonych systematycznie malała w ciągu XX wieku. W pracy przedstawiamy trzy rodzaje dowodów na wzrastającą tendencję do odrzucania tego fundamentalnego pojęcia: (1) Udział artykułów w oficjalnym czasopiśmie Amerykańskiego Towarzystwa Antropologów Fizycznych (AAPA) – *American Journal of Physical Anthropology*, w których wykorzystywano pojęcie rasy, spadł z 60 % w 1918 r. do 4 % w roku 2001 (Rys. 1, Tab. 1) ($r$ = -0,89; $p$ = 0,01). (2) Analiza zawartości podręczników akademickich do kursów antropologii fizycznej, z lat 1980–99, wykazała, że tylko w jednym z nich uznano istnienie ras. (3) Kolejne kwestionariusze przesłane pocztą do członków *American Anthropological Association* pozwoliły na wyciągnięcie wniosku, że odsetek antropologów fizycznych odrzucających pojęcie rasy wzrósł z 37 % w 1978 r. do 69% w 1999 roku (patrz też Tab. 2).

Aby wyjaśnić tę rewolucję pojęciową należy rozważyć trzy kategorie przyczyn: po pierwsze nowa teoria i rozwój koncepcji zmienności klinalnej, po drugie kontekst historyczny (patrz WEISS [2003]) i, po trzecie, nowe doświadczenia osobiste antropologów, które stały się pomostem łączącym przyczyny biologiczne z historycznymi.

Nowe podejście do problemu zróżnicowania człowieka rozwijało się w dwóch fazach. W pierwszej dekadzie XX w. F. BOAS [1911] i jego uczniowie rozwijali teorię kultury, wyjaśniając przyczyny różnic między społecznościami i odrzucając determinizm rasowy i poglądy o hierarchii ras. We wczesnych latach 50. S. WASHBURN [1951] odrzucił typologię rasową i stał się rzecznikiem badań procesów populacyjnych, wprowadzając postulaty nowej syntezy ewolucyjnej do antropologii fizycznej. Nowe dane pochodzące z licznych badań

przeprowadzonych w początkach XX wieku na różnych społeczeństwach reprezentujących rozmaite kultury pokazały zachodzące w nich zmiany, ujawniły również, że ludzie tej samej „rasy" tworzą wiele odmiennych kultur, a środowisko ma wpływ na biologię badanych grup ludzkich [BOAS 1912]. W drugiej połowie wieku F. LIVINGSTONE [1958] badając częstości występowania genu sierpowatości krwinek wykazał, że zmiany tej częstości mają charakter gradientów geograficznych (klin), a nie nieciągłych rasowych skupień. C.L. BRACE [1964] przekonywał, że badanie klinalnej zmienności poszczególnych cech jest przydatnym i właściwym podejściem do opisu zmienności człowieka. R. LEWONTIN [1972] wykorzystał dane genetyczne by wykazać, że większość zmienności genetycznej człowieka realizuje się wewnątrz populacji (ras), a tylko jej cząstka między nimi.

Wszystkie te badania dały podstawę do zakwestionowania pojęcia rasy. Zmiany te zostały przyspieszone przez wydarzenia historyczne, które ułatwiły pokonanie potęgi myślenia w kategoriach ras i rasizmu. Wielki Kryzys, zapoczątkowany w 1929 r. wyraźnie pokazywał, że ubóstwo nie jest kontrolowane przez geny, wbrew przekonaniom zwolenników eugeniki. Jeszcze większy wpływ miało ujawnienie wykorzystania koncepcji rasowych do uzasadniania eksterminacji Żydów, Romów czy Polaków podczas II Wojny Światowej [FREDRICKSON 2002]. Istnieje tendencja do przypisywania spadku popularności ras wymogom politycznej poprawności. Taki pogląd pozwala zwolennikom koncepcji rasowych pozostać przy swoim. W rzeczywistości upadek pojęcia rasy jest wynikiem nagromadzenia rzetelnych danych empirycznych, rozwoju wiedzy teoretycznej i syntetyzującego działania faktów historycznych.