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Shifting paradigms in anthropology: from racial classification to the natural history of humanity

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Summary - *Anthropology emerged as an informal field of inquiry during the 18th century, in the intellectual milieu of the Enlightenment, yet it was only in the following century that it became an institutionalized discipline. The historical context is far from incidental: European colonialism and imperialism, predatory extractive capitalism, and the rise of nationalism profoundly shaped the political, social, and cultural environment within which anthropology took shape as an academic discipline. This article offers a concise account of anthropology's development from the 18th to the 20th century, examining the intertwining of scientific inquiry and imperialist ideologies, with particular attention to the Italian case, from the unification to the end of World War II, including the Fascist period. We then discuss the deconstruction of the concept of "race" in contemporary anthropology and survey the current debate surrounding human biodiversity as a contested terrain at the intersection of biology and politics. The article concludes by advocating for renewed interdisciplinary dialogue between biological and cultural anthropology, grounded in scientific integrity and a humanistic commitment to social justice.*

Keywords - *Colonialism, Racism, Genetics, Bioarcheology, Anti-racism.*

Physical anthropology has often been associated with the development of racist doctrines, particularly white supremacism (Beliso-De Jesús et al. 2023; Geroulanos 2024). Although it is simplistic to reduce anthropology to an instrument of power constructed in the age of imperialism to justify and legitimize colonial and discriminatory practices, the fact remains that the history of anthropology is intertwined with these historical phenomena. In this contribution, we first briefly outline the development of anthropology as an academic discipline, situating it within the broader historical context. Subsequently, we focus on the Italian case study, articulating the relationship between anthropological research within this country and some historical phenomena pertaining to the history of Italy between 1860 and 1945, such as colonialism and fascism. Finally, we articulate the process through which, during the second half of the 20th century, anthropology experienced a paradigm shift in its methodology and research trajectory. We show that, historically, two processes were instrumental in encouraging this paradigm shift: the adoption of a naturalistic concept of humanity, fostered by the elaboration and spread of the so-called new synthesis of evolutionary theory (or neo-Darwinism); and the development of a relativistic approach in cultural anthropology, whose foundations were built in the inter-war period, but became dominant only in the decades following the end of WWII. We also show that both aspects were not completely absent in European anthropology before this time but were a minority view during the 19th and part of the 20th century, when the dominant paradigm in anthropology was built on a strong sense of anthropocentrism (the opposite of naturalism) and eurocentrism (the opposite of cultural relativism), signs of which we can observe

in other domains of knowledge, such as history and geography. Therefore, we suggest that an approach based on naturalism — that is, conceptualizing the human species as part of nature, not something special and detached from it — and cultural relativism may help us counteract the surge of racism, nationalism and xenophobia we are experiencing today.

Historical context

The period between the sixteenth and nineteenth centuries was a time of significant cultural change, referred to as the "Scientific Revolution" (Bernardoni and Segala 2024), which affected not only such disciplines as physics and astronomy, but also the so-called "life sciences", facilitated in part by access to novel sources of data from diverse geographical contexts. The elaboration of the scientific method exerted an extraordinary influence upon research, opening new horizons of knowledge, substantially enhancing our comprehension of the living world, and contributing to the enrichment of human knowledge. Undoubtedly, much of this inquiry was an end, although some historians, highlighting the existence of a link between the technological-military needs functional to colonial conquest, on the one hand, and scientific development, on the other, proposed to conceive the sciences also as "tools of empire" (Headrick 1981).

During the 17th and 18th centuries, some philosophers — such as Voltaire (1694-1778) and Turgot (1727-1781) — contributed to the elaboration of a philosophy of history predicated upon the idea of progress, conceived both as gradual emancipation from superstition and the perfection of reason, and as the amelioration of human material conditions (Rossi 2012). According to some historians, the normative and moral charge of the mainstream Enlightenment historiography would have implied a closure with respect to alternative visions of history, by imposing stereotypes that saw in non-European societies different "stages of development" within a single direction of progress of civilisation and reason (Carey and Festa 2009; Di Fiore and Meriggi 2011). Although this judgement may be true for most of the scholars of the 18th century, the Enlightenment was also the intellectual milieu within which the earliest instances of anti-colonialism are found (Muthu 2009; Israel 2011). In addition, philosophers such as Denis Diderot, Paul Henri Thiry d'Holbach and Claude-Adrien Helvétius developed a naturalistic view of human nature, focused on the material aspects of the human experience (Ferrone 2019): a perspective that can indeed be considered foundational to the discipline which we call biological anthropology. In fact, before anthropology was born as an academic discipline, various scholars had dedicated themselves to the study of the human species from a biological point of view, for example Georges-Louis Leclerc, Count of Buffon (1707-1778) and Johann Friedrich Blumenbach (1752-1840). Discussions on human nature were not all centered on classification and separation, but also emphasized what is common and shared among all human beings. For instance, Blumenbach asserted that all human beings as such are endowed with reason and language, can construct tools, and thanks to their ingenuity are able to adapt to any environment (Blumenbach 1795).

Within a context of profound socioeconomic changes and rapidly progressing mundialization, the arguments in support of the idea of equality, one of the slogans of the French Revolution, could be counteracted by asserting the existence of fundamental differences between human beings, thus supporting the existence of hierarchies and asymmetries of power. In fact, scholars of every kind, from jurists to ecclesiastics, produced social and institutional descriptions in the form of nomenclature, thereby lending support to highly rigid social discriminations. The fundamental idea underlying all these classifications is their purported "naturalness" and ineluctability, from which it inevitably follows that they cannot be called into question (Schaub 2015). Classifications of humanity into "races" were influenced by doctrines such as physiognomy, phrenology (i.e., inferring a person's character and intelligence based on the morphology

of their skull), and aesthetics (Bindman 2002; Mosse 1978). Regrettably, the naturalistic and materialistic approach would have been left aside in mainstream anthropology, in favor of a rigid classification system, such as that presented by Swedish botanist Carl Linnaeus (1707-1778), who subdivided humanity into five "races" (Linnaeus 1767) and arbitrarily attributed them fixed physical and intellectual characteristics.

Anthropology as an academic discipline was born with the establishment, in Paris, of the chair dedicated to this discipline in 1855. Armand de Quatrefages (1810-1892) would preside over this teaching until 1891, orienting it toward the systematic study of similarities and differences among human beings ("raciology"). Four years later came the founding, by Paul Broca (1824-1880), of the Societé d'Anthropologie de Paris. Skeptical of the idea proposed by Darwin of an evolutionary kinship between humans and anthropomorphic apes, in his Mémoires d'Anthropologie (1871), Broca showed full adherence to the Lamarckian vision of nature as an ascending ladder of greater complexity, which also contemplated a hierarchy among human "races". The theory of evolution by natural selection by Charles Darwin (1809-1882) and Alfred R. Wallace (1823-1913), on the other hand, entails an entirely natural mechanism to explain changes in living forms over time. Darwin's theory (Darwin 1859) rests upon the assumption that natural selection can act only upon pre-existing variability, selecting favorable variants over unfavorable ones; therefore, variation in the Darwinian model is central — no longer constituting merely "background noise" that is superimposed upon the pure essence of a species, but rather an indispensable element in the natural process of adaptation (Biondi and Rickards 2011). In the same year of Broca's *Mémoires*, Darwin dedicated a book, *The Descent of* Man (1871), to the natural history of the human species, hypothesizing a single origin in Africa, since the non-human primates most similar to the human species still live on that continent. Although Darwin in his writings used the term "race", proposing that inter-racial differences may be maintained by sexual selection, it is debated whether he can be properly considered racist, since he spoke out against racial essentialism, that is, the idea that the physical and intellectual characteristics of each "race" would be congenital and fixed (Rutherford 2021). Throughout the nineteenth century and the first part of the twentieth century, for anthropologists, both monogenist and polygenist, methods for identifying "pure racial types" and establishing a classification of "races" occupied the center of scholarly interest (Zagatti 2024), whereas the investigation of human biology in terms of adaptation and bio-cultural relationships with the environment had been relegated to the background.

Anthropology in Italy from the unification to the Fascist period

Darwinian evolutionism was introduced to Italy by scientists such as Giovanni Canestrini (1835-1900), Michele Lessona (1823-1894), and Filippo de Filippi (1814-1867), and in the same period the first chairs of anthropology in Italy were also founded. The first was established in Pavia in 1860 by physician and psychiatrist Cesare Lombroso (1835-1909), one of the leading exponents of Positivism, who became famous especially among the public for his theories of "criminal anthropology". As a young physician, Lombroso was a staunch advocate of science, medicine and education as engines of economic and social development, he embraced the notion of biological evolution (although he misunderstood Darwinism, often confounding it with Lamarckism; Mazzarello 2024) and gave impulse to social medicine. Later, working within psychiatric hospitals, where he conducted research on the convicts, he developed his theory of "atavism", along with numerous other notions of criminal anthropology (e.g. the "born criminal") that are now widely discredited. Based on untestable and contradictory assumptions, and drawing on a superficial reinterpretation of Darwinian evolution, Lombroso's theory of

atavism purported to explain the behaviours of criminals and other marginalized figures through the concept of evolutionary regressions — that is, as the re-emergence, as developmental anomalies, of physical and psychological traits inherited from "less evolved" ancestors (Mazzarello 2024; Teti 2025). Regarding criminal anthropology, we should highlight that Lombroso was one of the first thinkers — at least in the Italian context — to adopt a systematic and scientific approach in the study of criminality and social deviance, shifting the focus from the religious concept of sin and the moral-juridical concept of guilt, and placing the discussion on the terrain of human behavior as a natural phenomenon, that can be approached empirically. In this sense, despite the fact that Lombroso's method can hardly be defined scientific, his research can indeed be considered at the root of modern forensic science.

One of the most prominent figures in Italian anthropology was Paolo Mantegazza (1831-1910), a convinced Darwinist and very committed to scientific dissemination for the purpose of improving health conditions of the population (Barsanti 2010). In 1869, Mantegazza founded the chair of anthropology in Florence, established within the faculty of letters because it was considered closer to history than to medicine. Two years later, also in Florence, the "Società di Antropologia ed Etnologia" was founded, whose purpose was to be "contributing to the study of somatic, psychic, and cultural characteristics of man in their [*sic*] ethnic variations" (https://www.antropologiaetnologia.it/statuto/). Giuseppe Sergi (1841-1936), who had studied literature and philosophy, after a period of teaching anthropology in Bologna (1880-1884) obtained the first chair of anthropology at the university of Rome in 1884, and later contributed to the foundation of the "Società Romana di Antropologia". Sergi questioned the usefulness of anthropometric measurements and indices in anthropological classification and proposed a new method, which he defined as "natural" (Manzi 2022). Consistent with the notion of pure racial type, Sergi proposed that the so-called Mediterranean "stock" had a single, common origin in East Africa, subsequently spread across North Africa, the Levant and Southern Europe (Sergi 1895), and inhabited these regions throughout the Neolithic period, developing some of the earliest civilizations. Subsequently, Europe would be swept by the invasion of violent peoples from the Asian steppes, the so-called Aryans, speaking proto-Indo-European languages. The Mediterranean peoples, Sergi claimed, were inclined toward individualism and rebellion, ill-disposed toward authority, whereas the Aryans were inherently disposed to submit to authority, willing to sacrifice individual needs for the good of the community (Cerro 2017). Sergi criticised the myth of racial purity in contemporary Europe, arguing that a long history of interbreeding had irreversibly mixed the original, pure "races" — or "stocks" (*stirpi*), a term that Sergi preferred because he considered the word *razza* to be excessively imbued with the supremacist ideology of the supporters of Aryan superiority (Cerro 2025). It is important to emphasize that Italian anthropology during this period was also engaged in a debate concerning the alleged "racial" diversity between northern and southern Italians, and the supposed inferiority of the latter. Alfredo Niceforo (1876-1960), who claimed to be reiterating positions widely held among scholars in the field, attributed the particularly widespread delinquency in southern Italy to the nature of the "Mediterranean stock", in which an African element was purportedly prevalent, and ascribed criminal phenomena such as the Mafia and brigandage to a "primitive" character of these populations (Niceforo 2022). By identifying race as an explanation for phenomena that had originated from history, Niceforo attributed a natural and immutable character to this supposed inferiority, thereby precluding any concrete possibility of change.

Meanwhile, in 1867 the "Società Geografica Italiana" was founded, which was to play a crucial role in encouraging Italian colonial initiatives, despite the fact that most of the ruling class and public opinion were hostile to the idea of an imperialist policy, contrary to the still strong ideals of the Risorgimento (Del Boca 1976) and

unattainable given the difficult financial conditions of the newly unified kingdom. Only at the beginning of the 1880s were the first modest colonial initiatives undertaken in Africa, starting with the acquisition of the bay of Assab (1882) and the port of Massawa (1885) in Eritrea. Initially, the government line remained cautious, but starting from the end of the 1880s, especially with prime minister Francesco Crispi (1818-1901), it became increasingly aggressive, and expansion toward the interior began. According to Crispi and supporters of vigorous colonial policy, the creation of Italian colonies in East Africa would solve the emigration problem, offering emigrants land and work, but would also have conferred international prestige on Italy (Labanca 2025). The plan to use Eritrea as a destination for Italian emigration failed, but the colony began to be intensively exploited for its natural resources. The indigenous inhabitants, viewed merely as a labor force to be exploited, did not enjoy the status of citizens but were relegated to that of subjects, thereby enduring a form of racism that was legally institutionalized (Deplano and Pes 2024). In 1911, the conquest of Libya was also initiated, initiating a long and bloody guerrilla war, which ended only in 1931 with the conquest by Rodolfo Graziani (1882-1955). The colonial experience profoundly influenced Italian society from many points of view (Deplano and Pes 2014), including scientific research and teaching. Aldobrandino Mochi (1875-1931), Mantegazza's successor to the chair of anthropology at the University of Florence, participated in two expeditions to Eritrea (1904-1905) to collect anthropometric data, although his main interest was the ethnography of Italian regions rather than racial anthropology. Nello Puccioni (1881-1937), Mochi's successor, carried out a series of anthropological missions in the Italian colony of Cirenaica (1928-1929), of which he also left personal diaries (Puccioni 2024). At the time, the idea of a radical inferiority of sub-Saharan Africans — as compared with Europeans, but also with Levantines and Maghrebi — was widespread among Italian anthropologists, including Paolo Mantegazza, Giuseppe Sergi, Cesare Lombroso and Enrico Morselli (1852-1929). Anthropological inferiority was attributed to three causes: the interruption of a people's evolution at an early stage; atavism (i.e., the re-emergence of ancestral characters, with the reversal of evolution), and degeneration (i.e., a particular mode of "incomplete adaptation" entailing the deviation of a character from its "normal" state). Notwithstanding the profound rooting of the anti-black prejudice among Italian anthropologists, many of them — particularly Sergi and Lombroso, both of whom had socialist sympathies — argued vehemently against Crispi's imperialist foreign policy, primarily because it would have been an expensive endeavor, while the kingdom had more urgent problems to address; but also, because war and violence are themselves "barbaric" and contrary to civilization (Cerro 2025).

The two anthropological societies, the Florentine and the Roman, were at odds with each other over various issues, including the disciplinary structure of anthropology. Paradoxically, Sergi, who had a humanistic background, pushed for the adoption of a strictly "naturalistic" and "positivistic" approach, contributing to the divorce between physical and cultural anthropology, which characterized the Italian context for decades. During the first Congress of Italian Ethnology (1911), the divorce between physical and cultural anthropology was definitively established (Puccini 1991), as Morselli defined *etnologia* as the discipline that "should lead to a comprehensive knowledge of the development — mainly physical and subordinately psychic — of the *Hominidae* as a natural group", and maintained that it should be distinct from *etnografia*, "the description of peoples and nations", which in turn "are not strictly antropozoological [concepts], but rather linguistic, geographical, historical and social [concepts]" (Morselli 1911). Moreover, Fabio Frassetto (1876-1953), one of the most preeminent students of Sergi and himself professor of anthropology in Bologna during the first half of the 20th century, defined himself as "convinced supporter of the need to differentiate anthropology in the

morphological and biological sense, to deviate it from that rather confused direction that in the past made it a bad mosaic of anthropological, ethnographic, ethnological, paleo-ethnological and historical research" (Zagatti 2024). Interestingly, anthropology was also influenced by the surge in nationalism, which became profoundly intertwined with racism, sometimes in peculiar ways. In 1921, Sergi and Frassetto conducted an anthropological analysis of the skeleton of the national poet Dante Alighieri (1265-1321), whom Frassetto defined "the most authentic and glorious type of the Mediterranean stock" (Frassetto 1933; see also Avalli 2024). In the same years, positive eugenics also received great impetus, predicated on the purported need to increase birth rate and defend the traditional family model, while the Catholic Church acted as a barrier against negative eugenics, based on contraceptive practices (Israel and Nastasi 1998). A key figure of eugenics in Italy was Corrado Gini (1884-1965), founder in 1926 of the "Istituto Nazionale di Statistica", who believed that a nation that wants to be free and strong must maximize fertility and birth rate (Cassata 2006). Crucially, Mussolini would fully embrace this ideology within the context of his policies, aimed at "strengthening" the nation through the quantitative increase of the Italian "race". The Fascist natalist policy received virtually unanimous active approval from demographers and could therefore present itself as a fully rational project, in essence as something "scientific". Beginning in the 1910s, and then throughout the two decades of the regime, a racist rhetoric was thus being constructed, which accustomed Italians to the idea that the government was committed to a policy of safeguarding the quality of the race, and that this was a highly important and meritorious objective of great humanitarian value (Maiocchi 2004).

Meanwhile, starting from the beginning of the 1920s, the colonial enterprise gained renewed impetus, and this influenced profoundly academia, including anthropology and ethnography. A pro-colonial academic commitment, aimed above all at studying the colonized populations in racial terms, developed among many scholars, and the Florentine "Società di Antropologia ed Etnologia" held a preeminent position in this. On the other hand, the inter-war period was relatively poor in original research projects in Italian anthropology, with scholars concentrating mainly on classification and systematics (Zagatti 2024). The foremost representative of colonial anthropology in Italy was undoubtedly Lidio Cipriani (1892-1962), who realized numerous exploratory expeditions to collect anthropometric data, ethnological artefacts, skeletal remains, and botanical and zoologic samples (Moggi-Cecchi 1990; Moggi-Cecchi and Stanyon 2014; Verducci et al. 2024). Cipriani is particularly notorious for the plaster masks he produced on living people, using indigenous intermediaries and cheap means of payment (cigarettes, clothes, ornaments, sometimes even weapons) to persuade people to submit themselves to this clearly unpleasant — as is evident from the facial expressions — procedure, often adopting a dominant attitude towards them (Nicolosi et al. 2024); the profound asymmetry in political, economic and military power between the anthropologist and the individuals who were subjected to this procedure obviously implies that there was no genuine informed consent, even in the absence of physical coercion. The practice of facial casting, already practiced in Antiquity to capture and preserve the traits of deceased individuals, acquired a scientific significance only between the 19th century and the early decades of the 20th century, in the framework of phrenology and racial typology. Cipriani considered these masks to be "scientific documents of the first order, preferable to any metric data or photographs" (Cipriani 1941), but they obviously possessed a fundamentally ideological significance within the context of fascist hyper-nationalism and imperialism: in fact, their display in exhibitions — for instance, the *Mostra Triennale delle Terre Italiane d'Oltremare*, i.e. "triennal exhibitions of the Italian overseas territories", in 1940 — served to emphasise the purported physical and moral differences between Italian conquerors and African subjects (Verducci et al. 2024).

Cipriani also brought from Africa thousands of photographs and authored dozens of articles on popular newspapers, such as "Il Corriere della Sera" and "Il Popolo d'Italia"; on one hand, this dynamic approach towards anthropology and his strenuous commitment to the collection of original data "in the field" (rather than in university's libraries) had the potential to renew the discipline, but on the other hand Cipriani's fundamentally racist paradigm meant that his contribution to contemporary anthropology was almost none.

Cipriani authored numerous monographs devoted to the Italian struggle to gain a position among the imperial powers in Africa, such as *Un assurdo etnico: l'impero etiopico* (1935) and *Fascismo razzista* (1940), in which he advanced overtly and crudely racist positions. He likewise left an extensive and detailed handwritten diary (Dell'Era 2014), yet unpublished, where we can gain insights regarding his views in the evolutionary theory. Although he occasionally mentions Darwin, it is evident that he understands his theory only superficially; indeed, in some passages, he explicitly rejects Darwinism, because he considered untenable to attribute a fundamental role in evolutionary change to random inter-individual variations — that is, to chance. Instead, Cipriani subscribed to the doctrine of Daniele Rosa (1857-1944), a professor of zoology in Florence from 1905 to 1912. According to this theory, which Rosa himself named "hologenesis", every species possesses a so-called "idioplasm" that directs its evolution along a specific path, much as an individual's genetic makeup guides embryonic development (Luzzatto et al. 2000). Consequently, this doctrine presupposes strict determinism, regards interspecific variability as mere "background noise" unrelated to the evolution of the species, and makes no provision for the concept of adaptation. Furthermore, in certain passages of his diary, Cipriani states that he shares Sergi's polygenist theory, which posits that the human genus comprises several distinct species of independent origin (Dell'Era 2014). In 1938, Cipriani was one of the signatories of the *Manifesto degli scienziati razzisti*, which was likely written at Mussolini's request and under his strict instructions and paved the way for the regime's racist policies (Cassata 2008). This document declared that "races do exist", and that "the concept of race is purely biological"; it also affirmed that "the population of present-day Italy is mostly of Aryan origin and its civilization is Aryan" and "the purely European physical and psychological characteristics of Italians must not be altered in any way". The *Manifesto* was published in a widely read newspaper and became rapidly very well-known and intensely discussed, although not all scientists agreed with its declarations, also given its eminently political, and not scientific, nature (Maiocchi 2004).

The paradigm shift

In 1922, in a book dedicated to the geography of history, French historian Lucien Febvre (1878-1956) critiqued the unsophisticated determinism of the so-called "anthropogeographers" of his time, their banal and reductionist generalizations — for example, the claim that certain "moral" characteristics of a population can simply be attributed to "race" or climate. At the same time, Febvre called on the scientific community to adopt a more sophisticated approach, one that considers the concrete, bidirectional relationships between human societies and the physical environment, and above all, one that uses a rigorous and intellectually honest scientific method (Febvre 1922). In the same year, one of the greatest works of the eminent German sociologist Max Weber, *Economy and Society*, was published posthumously. Weber argued that, from a scientific perspective, categories such as "race" and "ethnicity" are useless because they are inaccurate and do not correspond to concrete realities. However, they exist as social facts, to the extent that people believe in their existence (Weber 1922). A revolution within cultural anthropology, moreover, had begun in the same decades, with the seminal works of Franz Boas (1858-1942) and Bronisław Malinowski (1884-1942), which contributed to the deconstruction

of cultural evolutionism and advocated a new approach, based on a functionalist paradigm and founded on fieldwork (King 2019). The critique against the concept of race, therefore, was already present in academic discussion in the 1920s, but would become stronger after the rise of totalitarian regimes in Europe, between the mid-1930s and the mid-1940s.

British zoologist Julian Huxley (1887-1975), one of the protagonists of the modern synthesis of evolutionary theory, in 1935 published a popular science work designed for the public, written in simple language but scientifically accurate, which aimed to show European readers the fallacy of the concept of race. In *We Europeans, a Survey of 'Racial' Problems*, Huxley criticized the pseudoscientific approach of racist scientists, who indulged in unproductive speculations about "race", presenting them to the public as science before undertaking rigorous descriptive work and accurate statistical analyses. He wrote, "Migration and crossing have produced such a fluid state of affairs that no such clear-cut term, as applied to existing conditions, is permissible" (Huxley et al. 1935). Three years later, British anthropologist and statistician Geoffrey Miles Morant (1899-1960), who had previously conducted research on human biometry and raciology under the supervision of the eminent statistician Karl Pearson (1857-1936), published *The races of Central Europe: a footnote to history*, in which he demonstrated by means of biometric and statistical methods that the geographical distribution of some physical traits, including cranial indices, in the people of Central Europe was continuous rather than clustered (Clever 2023). Crucially, Morant showed that these traits correlated neither with national boundaries nor with the distribution of languages. Huxley played a major role in the theoretical development of the so-called "modern synthesis" of evolutionary biology, also known as neo-Darwinism, contributing to the formulation of a more sophisticated notion of biological species, which incorporated the notion of "cline" — i.e. the phenotypic variation within a species along geographical and/or ecological axes (Sommer 2016).

After the war, the United Nations Educational, Scientific and Cultural Organization (UNESCO) was founded, with the purpose of using science, education and culture as instruments of lasting peace (https://www.unesco.org/en/about-us/history). UNESCO's famous statement on race, published with the title *The* Race Question (1950), asserted that "scientists have reached general agreements in recognizing that mankind is one […] that all men are probably derived from the same common stock; and that such differences as exist between different groups of mankind are due to the operation of evolutionary factors […] A race, from the biological standpoint, may therefore be defined as one of the group of populations constituting the species *Homo sapiens*. These populations are capable of inter-breeding with one another but, by virtue of the isolating barriers which in the past kept them more or less separated, exhibit certain physical differences as a result of their somewhat different biological histories […] The scientific material available to us at present does not justify the conclusion that inherited genetic differences are a major factor in producing the differences between the cultures and cultural achievements of different peoples or groups. […] The one trait which above all others has been at a premium in the evolution of men's mental characters has been educability, plasticity. This is a trait which all human beings possess" (https://unesdoc.unesco.org/ark:/48223/pf0000128291). The document was the result of a complex and dynamic process of negotiation between social and natural scientists, but also between academic standards of intellectual honesty and the political willingness to produce assertive statements, capable of profoundly influencing civil society; the objective was to harmonise the scientific fact of inter-individual variability with the basic ideological tenets of liberal democracy — i.e. the universality of human rights, equality of opportunities, and meritocracy — and therefore the document was not intended to assert the sameness of human races on scientific grounds, but rather to demonstrate that the ideal of equality is perfectly tenable within the frame of physical anthropology

and human genetics (Selcer 2012). This dialectic between particularism and universalism, rooted in the polysemy of the notion of equality, sparked a long-lasting debate within the scientific community. In 1955, the Museum of Modern Art in New York curated an exhibition entitled *The Family of Man*, featuring photographs from all over the world, which portrayed "the universal elements and emotions and the oneness of human beings throughout the world", spanning themes such as family and social life, education and culture, consciousness and philosophy, and the relationship between the individual and their social and natural environment (https://assets.moma.org/documents/moma_press-release_325966.pdf). That same year, however, anthropologist Claude Lévi-Strauss (1908-2009) published his masterpiece *Tristes Tropiques*, a celebration of human diversity and, at the same time, a critique of universalism insofar as it threatens to reduce humanity to an undifferentiated and homogeneous mass. The tension between the oneness of humanity and the endless forms that the human experience can take was then, and remains today, at the heart of anthropology's reflection.

The "Harvard Solomon Islands Project", an extensive multidisciplinary study initiated in the early 1960s that integrated physical anthropology with cultural anthropology, demonstrated the absence of a clear correlation between protein structure, languages, customs, and cultural practices (Meier 2010). After decades of debate about human diversity, it finally became possible to go beyond craniometric indexes and quantify biological diversity also from a molecular perspective, a methodological shift that would profoundly reshape the life sciences in the second half of the 20th century. Crucially, in 1967 it was demonstrated, through immunological techniques, that humans, gorillas and chimpanzees shared a common ancestor approximately 5 million years ago (Sarich and Wilson 1967), which is approximately 20 times the divergence time within the human branch (Liu et al. 2021). This discovery contributed to debunking the common but erroneous idea, that there would be a continuous evolutionary gradation from great apes and humans, and that the former would be more closely related to some human populations than to others. On the contrary, Sarich and Wilson showed that the immune proteins of any modern human group present the same molecular distance (i.e., number of amino acid substitutions) from the homologous proteins in chimpanzees: hence, humans constitute a single lineage that branched off from the Hominin's tree once and for all, and no human group is more closely related to chimpanzees than the others. Some years later, geneticist Richard Lewontin (1929-2021) demonstrated that the vast majority (85.4%) of genetic diversity — measured in terms of the frequencies of variants in 17 genes — consisted in inter-individual differences within, rather than among, the purported "races". He therefore concluded, "Human racial classification is of no social value and is positively destructive of social and human relations. Since such racial classification is now seen to be of virtually no genetic or taxonomic significance either, no justification can be offered for its continuance" (Lewontin 1972).

Although, as late as 1962, American anthropologist Carleton S. Coon (1904-1981) in *The Origin of Races* maintained polygenism and the existence of distinct human races, by the end of the 1970s it had become evident that the myriad of different classificatory schemes that had been produced by raciologists depended more on socio-cultural prejudices than on empirical evidence (Biondi and Rickards 2011), which led to the abandonment of racial typology as a legitimate, recognized and practiced field of anthropology. As anthropologist Stanley M. Garn noted at the Fifth International Congress of Anthropological and Ethnological Sciences in Philadelphia in 1956, there is a fundamental contradiction between the approach based on racial classification (which assumes stability in traits) and evolutionism: if races do not change but humanity has a single origin, how did races differentiate? And if all organisms are subject to biological evolution through natural selection and genetic drift, does it still make sense to talk about races as taxonomic categories? Indeed, starting in the 1950s, anthropologists were

progressively losing interest in taxonomy, redirecting their studies to aspects such as adaptation and change (Pogliano 2005). Furthermore, the discovery of new fossils, which could be attributed to the human lineage but could not be easily ordered in a progressive, linear trajectory, has forced scientists to rethink theories of human evolution, leading to the adoption of a tree-like model to depict the complex evolutionary history of the genus *Homo*. An important conceptual breakthrough was the development of the "punctuated equilibria" paradigm, that highlights the importance of contingent, external factors, such as climatic shifts, changes in ecological pressures and so forth, in stimulating pulses of evolutionary change in different directions. The emerging model of human evolution, consequently, was a complex interplay of environmental changes, adaptation and extinction, with geographical expansions followed by allopatric speciation and often local extinction; in sum, a model of evolutionary "experimentation and decimation" (Vrba 1983,1993; Gould 1995), that is compatible with the graphical metaphor of an evolutionary bush or coral, rather than a ladder (Pievani 2012). During the same period, physical anthropology shifted its focus from the description of physical differences and the classification of human individuals based on these differences, to deeper research questions, such as the influence of culture and environment on the human body. Crucially, the physical characteristics observed in living bodies and skeletal remains were not reduced to mere "racial" characters, but rather attributed to biocultural factors, such as health and diet, activity and mobility patterns (Larsen 2015, 2018; Belcastro et al. 2022). For this new field of study, Jane Buikstra (b. 1945) coined the term "bioarcheology" (Buikstra 1977). Recent developments in the chemical analysis of skeletal tissues widened the scope of bioarcheological research and contributed to shifting the focus of research on different dimensions of human biodiversity, for instance patterns of mobility (i.e., trajectories of migration of individuals and groups) and various aspects of culture and biology, such as sex-related differences (e.g., Copeland 2011; Plug et al. 2025), subsistence strategies (e.g., Pigott et al. 2025), and social networking and trading (e.g., Sanchez de la Torre et al. 2026).

Meanwhile, in 1953 an epochal breakthrough in the field of genetics had been the discovery of the structure of DNA by James Watson (1928-2025), Francis Crick (1916-2004), and Rosalind Franklin (1920-1958). In the late 1970s, the first DNA sequencing technique was developed, known as Sanger sequencing after its inventor, Frederick Sanger (1918-2013). As increasingly more sequence data were being collected, significant advances were also made in the processing and interpretation of these data. Modern human evolutionary genomics has confirmed Lewontin's insight, showing that indeed, on an average, 99.9% of the human genome is identical in all individuals, the remaining 0.1% varies geographically, and this variability is greater within individual populations than it is between one population and another; hence, while genetic diversity is a fact grounded in empirical evidence, the term "race" has no valid taxonomic meaning in contemporary human biology (DeSalle and Tattersall 2018; Fuentes et al. 2019). Population admixture has played a significant role in shaping today's patterns of genetic and cultural diversity, as genomic and archaeological research is increasingly highlighting (e.g., Nielsen et al. 2017; Liu et al. 2021). This does not mean that all human beings are genetically identical, but rather that human genetic variation shows a complex, continuous and largely clinal distribution that transcends the boundary lines of political, social and cultural spaces (states, nations, linguistic groups, etc.), which are recent ideological constructs and have nothing to do with purported "blood heritage".

Human evolutionary genetics conceptualizes genomes as palimpsests that can be interpreted through sophisticated statistical methodologies, grounded in evolutionary biology and history, to test hypotheses about the history of migrations and demographic processes, the evolution of phenotypic variation in relation with culture and environment, and the coevolution of humans and pathogens (Jobling et al. 2026). The concept

of "human biodiversity", coined by Jonathan Marks in 1995, has established itself within the scientific community to indicate the inter-individual genetic, morphological and physiological differences in all their complexity, thus constituting a common conceptual ground for geneticists, palaeo-geneticists, bioarchaeologists and physical anthropologists.

Today, the most accepted model of human evolution, consistent with morphological and genomic data, posits a "pan-African" emergence of modern humanity, that would therefore be the result of a long and complex molding and melting of populations (Bae et al. 2017; Schlebusch et al. 2017; Bergström et al. 2020; Meneganzin et al. 2022; Ragsdale et al. 2023; Cousins et al. 2025). This recent common origin implies that humans constitute a single species, with much of our genetic makeup being the same for every individual, and the residual variation having accumulated recently and haphazardly in the last few tens of thousands of years, during a complex history of migration and local adaptation. A recent review has underscored that "human populations, including Neanderthals and Denisovans, are not neatly delineated into isolated groups: rather, we are all related in a complex tapestry of genetic threads, where gene flow is the rule and isolation the exception" (Williams and Huber 2025). A reconsideration of morphological, genetic and archaeological evidence of the last 50 thousand years of human evolution has led to the conclusion that "what we are seeing ever more clearly is a dynamic and fluid landscape of interaction whereby genes and cultural traits spread across the Old World regardless of the artificial boundaries" of Linnean taxonomic units framed on modern geography (Zilhão et al. 2024). In short, taxonomic categories are proving increasingly problematic. On the one hand, over the course of hundreds of thousands of years, human populations have accumulated substantial morphological and genetic variability, due to random processes of drift and to local adaptation; this variability risks being overlooked and underestimated through the simple use of monolithic taxonomic categories. On the other hand, the robust evidence of numerous instances of inter-species admixture urges paleoanthropologists to rethink the taxonomic status of Denisovans and Neanderthals as distinct species — although this is still a matter of heated debate among specialists. Significantly, this shift in lexicon might also prove instrumental in changing our whole framework of classification of human beings (as proposed by Zilhão et al. 2024), adopting a more sophisticated paradigm in which morphological and cultural traits are appreciated in their complex and ever-changing temporal and geographic variation.

Anthropology in post-Fascist Italy

In Italy, given the dark memories of the fascist regime and its overtly racist policies, the intellectual discussion on these topics is felt as particularly important. Nevertheless, the onset of debate on colonialism in post-war Italy was significantly delayed, partly due to an active attempt at historiographical revisionism, and partly due to the persistence of a certain myth of the "Italiani brava gente", i.e. the tendency to shift the blame to "bad" Germans and assume that Italians are inherently decent and humane (Del Boca 2003; Del Boca 2005; Focardi 2013). After the fall of the fascist regime and the end of World War II, the newborn Italian Republic tended to whitewash the "liberal" phase of colonialism in opposition to the fascist phase, in order to negotiate with the victorious allies (in particular Great Britain) the possibility of maintaining a trusteeship on Eritrea and Somalia. Nevertheless, eventually the United Nations granted to Italy only a temporary trusteeship on Somalia (1950-1960), whereas Libya became an independent state in 1951, and Eritrea was annexed to Ethiopia, as an autonomous region, in 1952. Significantly, the political discourse in Italy regarding its ex-colonies was in favor of a long-term process of decolonization, i.e., political independence and self-government, but only as the final outcome of a process of civilization, in which Italy should have had a prominent role. In other words, even in the earliest years of post-fascist Italy we can

clearly observe the persistence of the idea that Eritreans, Somalians, and Libyans would have been incapable of carrying out a process of state building independently (Deplano and Pes 2024).

A comprehensive and systematic examination of the continuities and discontinuities in the scholarly orientations, methodologies, and theoretical frameworks of physical anthropology after the fall of fascism and the establishment of the Italian Republic (1946) remains substantially lacking and should be a focus of research in the following years. On the other hand, some significant discontinuities can indeed be pointed out in the domain of cultural anthropology, mostly — but not exclusively — due to external influences. The post-war period in the Italian context witnessed a twofold turning point in the so-called social sciences. Firstly, the work of Ernesto de Martino (1908-1965) was foundational for an entire scholarly tradition that flourished at the international level — that of the so-called "subaltern studies" — the product of a fruitful encounter between a historicist matrix (which opposed the essentialization of cultural practices and ethnic identities) and the reflections of Antonio Gramsci (1891-1937) on the concept of cultural hegemony (Dei 2012). Secondly, from the 1950s onwards, new influences drawn from the American anthropological tradition — in particular the Boasian school — were introduced into Italy as well, most notably by Tullio Tentori (1920-2003); an original and critical reworking of these impulses led to the formulation of the memorandum *L'antropologia culturale* (1958), which mounted a strong critique of the ethno-anthropological schools of the Anglo-Saxon tradition, particularly globalism and naturalism, accused of paying insufficient attention to the historical dimension of culture and, above all, to the dialectics, dynamics and internal differences within each society (Signorelli 2012). It could be argued that, in the Italian context, the stagnation of physical anthropology and the concomitant renovation in the so-called demo-ethno-anthropological disciplines for some decades deepened the rift that still isolates biological and cultural anthropology today, missing the opportunity to collaboratively develop new and shared areas of study. Moreover, the neoidealist doctrine of Benedetto Croce (1866-1952), a liberal and anti-fascist historian and philosopher who extensively influenced the humanities during the 20th century, continued to constitute an obstacle to the adoption of a truly naturalistic approach in the study of human beings, first and foremost because he despised the very idea of social sciences (Dei 2025). Furthermore, Croce defined evolution as an "imaginative transfiguration" (Croce 1938) and affirmed that the study of prehistory "mortifies the soul, which asks history for a noble vision of human struggles and new nourishment for moral enthusiasm, and instead receives the image of humanity's fantastic, animalistic and mechanical origins, and with it a sense of despair and depression and almost shame" (Croce 1938).

The debate on racism commenced quite early in post-war Italy, during the consultations within the Constituent Assembly, specifically in the discussion of the third Fundamental Principle of the Republican Constitution, which literally affirms that "all citizens are equal before the law, regardless of their sex, race, language and religion, political opinions, personal and social conditions". An analysis of the debates among the members of the Constituent Assembly regarding the precise wording of this article makes it clear that the choice of the word *razza* — rather than, for instance, *stirpe* (lineage) or *etnia* (ethnical group), or the outright suppression of analogous terms — was by no means accidental. Indeed, the constituents "condemn racism as an ideology contrary to the principle of equality but accept the concept of 'race' as an objective criterion of morphological-geographical classification of the human species" (Cassata 2022). One of the most symptomatic figures of the persistence of fascist culture in the early years of the post-war period was the statistician and demographer Corrado Gini (1884-1965), professor of statistics and president of ISTAT (the Institute of Statistics), but also president of the Italian Society of Genetics and Eugenics and of the Italian Committee for the Study of Population

Problems. A convinced proponent of positive eugenics as a tool for strengthening a nation economically and militarily (Maiocchi 2004), in the 1950s Gini launched a fierce attack against UNESCO's *Statement on Race*, denouncing it as a dogmatic ideological device, forcibly imposed over and above the "politically neutral" study of biological differences (Cassata 2019). The elimination of the concept of race from public discourse and from the mindset of a significant part of society, after decades of colonialism and twenty years of fascist regime, could not indeed be smooth and simple, nor could it be achieved automatically. Renato Biasutti (1878-1965), for example, represented a line of continuity between the racial anthropology of the Fascist era and the early post-war period: his work *Razze e popoli della Terra*, in fact, continued to be published into the 1960s (Biasutti 1967).

Although it would be false to affirm that nationalism and racism disappeared from public discourse in the decades of the "miracolo economico" (1950-1980), the late 1980s marked a revival in these forms of intolerance, or at least in their manifestation in the public space (Cassata and Schwarz 2022). This sparked a fervent, yet short-lasting, discussion in newspapers and within political discourse, as well as in academia, concerning the roots of racism and the strategies to counteract it effectively. In 1997, a conference was held, organized by the departments of literature, philosophy and history of the University of Bologna, entitled *Nel nome della razza. Il razzismo nella storia* d'Italia 1870-1945 ("In the Name of Race. Racism in the History of Italy 1870-1945"), the proceedings of which were published in a book (Burgio 1999). This volume, which includes contributions on antisemitism, "antimeridionalismo" (discrimination against people from southern Italy), and anti-African colonial racism, remains to this day a key reference work on the history of racism in Italy from the unification to the end of the Second World War. More recently, the questions of multiculturalism and diversity have become increasingly urgent in a context of intense migrations, surging nationalism and intolerance (Destro Bisol et al. 2018), where some political parties build electoral consensus on anti-migrant narratives rooted in the "fear of the other".

In 2008, exactly seventy years after the publication of the *Manifesto degli scienziati razzisti*, a group of Italian scholars from different fields collaborated to produce a *Manifesto degli scienziati antirazzisti*, structured as a counter-argument against every single point of the original manifesto (Alleva et al. 2008). It is also known as the "Manifesto di San Rossore", as it was signed during a meeting at the Tenuta di San Rossore, near Pisa: the same place where, in 1938, the king Vittorio Emanuele III promulgated the racial laws. Some of the signatories of the *Manifesto degli scienziati antirazzisti* also engaged in the public discussion concerning biology, politics and identity, with some widely appreciated popular books (Remotti 1996; Barbujani 2006; Barbujani 2016; Piazza 2020). Meanwhile, an appeal launched in 2014 by the on-line Italian newspaper *Scienza in rete*, promoted by anthropologists Olga Rickards and Gianfranco Biondi, following a similar initiative carried out in France, and signed by numerous intellectuals, scientists, and the anthropological societies (Italian Anthropological Association, Italian Institute of Anthropology), called for the emendation of the Italian Constitution, to eliminate the word "race" and replace it with more appropriate terms, such as "nationality" or "ethnic origin" (Rickards and Biondi 2014). This, according to the initiative's supporters, would bring the Constitution into line with current scientific knowledge, which does not support the existence of distinct human races, neither empirically nor theoretically: based on the argument that "over the course of the last five decades, research in the fields of biological anthropology and genetics has experimentally demonstrated that the taxonomic concept of race cannot be applied to our species". The appeal once again sparked a lively debate within academia and civil society, drawing engagement from the scientific community as well, while also attracting a certain degree of critical scrutiny. In any case, the fact remains that within biological anthropology the concept of

"race" has been abandoned and no longer holds any heuristic value or systematic validity, whereas the constituents in 1947 could still believe that human "races" constituted a factual reality while simultaneously holding genuine anti-racist convictions. Furthermore, it could be argued that the suppression of the word "razza" would make it impossible to condemn and prevent, based on the Constitution, racial policies (Brahami 2018). In addition, some scholars highlight the risk of de-historicizing the constitutional charter, written in a socio-cultural context where the memories of the racist and antisemitic policies of the fascist regime were still very vivid, "effectively rendering incomprehensible the broad involvement of Italian scientists in the elaboration of the racist ideology of fascism, or paradoxically absolving Italian society and culture from the racist temptation" (Cassata 2022). On the other hand, recognizing the anachronistic nature and the inconsistency of the notion of "race" does not mean denying the existence of "racism" as a socio-political phenomenon; scientists — according to the appeal's launchers and supporters — have at least the responsibility to affirm that the concept of race has no scientific basis, and thus contribute to eroding its legitimacy in the public discourse. Although the constitutional amendment is currently still debated, in 2023 two parliamentary commissions have voted to eliminate the term "race" from all administrative documents of the Public Administration, replacing it with "nationality".

These intense debates favored the emergence of new questions: for example, does denying the existence of races mean underestimating human variation? What is the relationship between human biology and human dignity? The fact that these questions are raised not only in the public debate, but also within academia, suggests that, although virtually all Italian anthropologists recognize the intrinsic fallacy of the concept of human races, not all of them agree about the best way to fight racism (Destro Bisol et al. 2017). One strong initiative in this regard was launched in 2019 by the Istituto Italiano di Antropologia (IsItA): the *Manifesto della Diversità e dell'Unità Umana* ("manifesto of the human diversity and unity"), written in collaboration between biological and cultural anthropologists, considering also the insights and suggestions of many contributors from the civil society thanks to a dedicated Facebook page (Destro Bisol et al. 2019). Affirming that "today understanding human diversity has become an indispensable factor for social cohesion and civil coexistence", and guided both by the ethics of scientific integrity, which demands adherence to evidence-based findings, and by a humanistic commitment to peace and social justice, the document affirms that "human diversity is not, and must not become, an instrument of discrimination, but must be seen for what it really means: a key to our evolutionary success, a value for the present and a treasure to be preserved for the future" (Destro Bisol et al. 2018).

Research on bio-cultural diversity: contemporary challenges

The notion of bio-cultural diversity expands the concept of human biodiversity, integrating the biological component with its cultural dimension. Genetics has undermined the scientific foundations of racial classification, and anthropologists today study human bio-cultural diversity not to classify individuals into schematic, discrete groups defined by stereotypes, but to gain insights into the complex history of human migrations, local adaptations, genetic and cultural exchanges. Terms such as "ancestors" and "human population" are employed in scientific discourse as "statistical modeling tools that simplify reality" (Williams and Huber 2025); these heuristically useful (albeit ill-defined) expressions, that indicate bio-geographical groups of people characterized by a certain degree of genetic continuity across generations, are employed as research tools, not as essential typological categories. However, the risk of falling back into past errors, ignoring complexity and reducing human biodiversity to simplistic categorizations, must always be kept in mind (Kahn 2025). This is particularly critical because

discourses concerning belonging and identity lend themselves readily, especially among the general public outside the scientific community, to serving political motivations, whether explicit or implicit. While the concept of "race" was being expunged from scientific discourse as inadequate, this category continued to exist in the political sphere. In many countries with a history of deportations and slavery (especially in the Americas), a process of race-making is said to still be underway, both by public administrations, usually to monitor civil rights and combat discrimination, and by minorities themselves, to assert their identity, demanding retrospective redress for past discrimination. While European racism (i.e., white supremacism) was condemned, concepts like *négritude* developed, and racial research centers emerged in the United States, driven by activists who viewed their ethnic-racial identity no longer as a stigma, but as something to be proud of. Political scientist Richard McMahon coined the expression "genetic ethnology" to indicate "the use of biology to understand politically significant peoples, and especially ethnic groups and their histories". According to the author, two socio-cultural factors are crucial in both traditional race science and the so-called genetic ethnology: on one hand, "a naive positivist faith in finding simple biological answers to social questions"; and on the other, the delicate and potentially problematic relationship between academia and the lay public (McMahon 2020).

Anna Källén, in her book *The Trouble with Ancient DNA* (2025), has dedicated a critical reflection to the impact of modern molecular genetics, including paleogenomics (i.e., the study of ancient DNA), in shaping our conceptions of identity, ancestry, and belonging. The author emphasizes how novel technologies, while contributing extraordinarily to the advancement of our scientific knowledge regarding human evolutionary history, also lend themselves indirectly to the construction of potentially dangerous narratives (Källén 2025). Indeed, once they leave the laboratory and permeate into the lay public, these topics can be distorted and reinterpreted, with the risk of escaping the rigorous control that the scientific method and academic ethics impose. Hence, the capacity to transform complex scientific theories and discoveries, often based on cryptic statistical and technical methodologies, into "popular culture", which can reach the non-specialist public without losing its rigor, will be instrumental in tackling this delicate question in the future. Issues of personal and group identity, in any case, are not trivial questions: the use of personalized genomic analysis services (e.g. "23andMe" and "ancestry.com"), in fact, risks overestimating the contribution of genetics to the definition of personal identity — a complex, dynamic, and multifactorial entity, shaped by education, individual experiences, and social interactions, which cannot be reduced to a coarse estimate of genetic ancestry.

An uncritical approach to the complex notion of personal and group identity is particularly problematic when the subtle distinction between the biological and statistical concept of genetic ancestry is blurred with respect to the socio-cultural idea of ethnic or national belonging. The question of memory and identity is also delicate when it comes to negotiating the status of human remains, that often have been "extracted" by researchers from highly resourced countries from non-native regions (a practice known as "parachute science"; Odeny and Bosurgi 2022) and are sometimes laden with the heavy burden of colonialism. The legislative framework in this regard is still very unclear, especially in Italy, where human remains are considered inalienable by law, as national cultural heritage, even when they have been acquired in an unethical manner and/or have a colonial origin (Belcastro and Mariotti 2021). While human remains can have a sacred value within some cultural systems (hence the ever-more-frequent claim for repatriation and reburial), they also contain a wealth of information of outstanding scientific value. This should urgently encourage discussion within the scientific community, particularly among physical anthropologists and bioarcheologists, but also historians and representatives of local communities, on how to address these sensitive issues.

In conclusion, over the last two decades, biological and physical anthropologists have become increasingly aware of the social and political impact of studying past and modern human biodiversity. While traditional methodologies and research avenues, including human osteology and morphometry, remain at the basis of anthropological research, the implementation of novel techniques, including genomic and proteomic analyses, to study human variation in all its complexity, have accelerated in recent decades, greatly increasing our knowledge of the human past and helping us to elucidate the "human condition" from a natural-historical perspective. Over time, the combination of the novelty brought by technologies such as genomics, proteomics, and virtual anthropology, as well as the influence of the social, cultural and political environment, has created a new landscape for studying human evolution. Thanks to its fundamentally scientific methodology, based on the testing of explicit, falsifiable hypotheses, physical anthropology has considerable potential to accurately inform research in humanistic disciplines. However, mutual openness among cultural, historical and biological studies is necessary in education and research, as is the use of a mutually comprehensible vocabulary and conceptual lexicon, to identify and promote shared goals and address common issues. This dialogue is particularly important considering the historical separation between biological and cultural anthropology, a divide shaped by disciplinary specialization, divergent epistemological traditions, and, in some contexts, by the legacy of racial, Eurocentric, and colonial frameworks.

Scientists are increasingly called upon to improve their ethical standards and good practices, to ensure that research does not fall into old traps: the debate surrounding the ethical and political underpinnings of anthropology, in fact, remains open. We are all faced with the challenge of moving past outdated and divisive ideas and dissonant objects, problematic legacies that have been handed down to us. In order to avoid creating new divisions and conflicts, we must foster new ways of working and thinking collectively, on the principles of scientific integrity and curiosity, as well as empathy and respect.

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This work stems from the authors' reflections on the value, sustainability, and future directions of research in biological anthropology. More specifically, it seeks to reaffirm anthropology's role as a discipline that bridges the natural sciences and the humanities by integrating evidence, methods, and perspectives from different fields. Achieving this goal requires a thorough awareness of the discipline's history and evolution, together with the adoption of a critical and reflexive approach that enables biological anthropologists to take the lead in critically re-examining and revising their own interpretative paradigms.

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