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Claude Lévi-Strauss on Race, History, and Genetics

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Abstract

In 1952, the French anthropologist Claude Lévi-Strauss published a small booklet titled *Race and History*. It formed part of a series of pamphlets on the so-called “race-question” by leading anthropologists and geneticists, which UNESCO published as part of its campaign against racism. Roughly twenty years later, in 1971, UNESCO invited Lévi-Strauss to give a lecture to open the International Year of Action to Combat Racism and Racial Discrimination. This time the lecture, titled “Race and culture,” caused a scandal. In 2005, on occasion of the Organisation’s 60th anniversary, Lévi-Strauss was once again invited by UNESCO to give a lecture. It followed the same lines as his 1971 speech, but now met with acclaim. In my paper I will analyze Lévi-Strauss’ interventions with respect to their reliance on contemporary genetics. Lévi-Strauss always saw a close analogy between structuralist anthropology and genetics, and derived his anti-evolutionary stance from the combinatory logic that both disciplines endorsed. I will argue, that it was this combinatory logic which created room for historical contingency and agency in Lévi-Strauss’ understanding of the history of humankind.

Introduction

In 1952, the French anthropologist Claude Lévi-Strauss published a small booklet titled *Race and History*. It formed part of a series of pamphlets by leading geneticists and cultural anthropologists like Leslie C. Dunn, Otto Klineberg, Michel Leiris, and Max Gluckman, which was later also edited as a collective volume (UNESCO 1956). UNESCO commissioned this series after a group of mainly social scientists, including Lévi-Strauss, had drawn up what would become known as the first UNESCO Statement on Race in 1950. This document caused a considerable stir among physical anthropologists, especially for what was seen as its central claim, namely that race is nothing but a “social myth” (UNESCO 1952, 101). A second expert committee, this time comprising physical anthropologists and geneticists, was therefore assembled to produce a revised statement in the summer of 1951, which redefined, rather than debunked, race in population geneticist terms (Pogliano 2001; Gayon 2006; Brattain 2007; Müller-Wille 2007). The fact that a second statement had to be produced through a complicated process of circulating drafts, collecting and evaluating viewpoints and criticisms, as well as revising the text on the basis of the reactions elicited, calls into question, of course, that the ‘consensus’ reached reflected some pre-existing unanimity about human diversity and its political implications. Yet the statement proved authoritative and received immediate and widespread attention in the mass

media, so much so, that it seems to have deeply influenced research agendas in physical and evolutionary anthropology in the following three decades (Weingart, Bayertz & Kroll 1992, 602–622; Haraway 1997, 234–244; Proctor 2003).

In 1971, 20 years after issuing the first statement on race, UNESCO invited Lévi-Strauss once again to contribute to its world-wide campaign against racism. He was asked to give a public lecture to open the International Year of Action to Combat Racism and Racial Discrimination. This time the lecture, titled “Race and culture”, caused what Lévi-Strauss later would call “un assez joli scandale” – “a rather nice scandal” (Lévi-Strauss 1983, 14; my translation).¹ He had communicated a written version of his paper to UNESCO officials 24 hours before the talk was scheduled, only to discover that the Director-General René Malheu took to the stage, according to Lévi-Strauss, “not only to exorcize my blasphemies by anticipating them, but also—and above all—to upset the timetable and thereby force me to make a few cuts that, from UNESCO’s point of view, would be a gain” (Lévi-Strauss 1992a, xiii). Lévi-Strauss’ lecture was published nevertheless in full in UNESCO’s *International Social Science Journal* (Lévi-Strauss 1971). Yet unlike *Race and History*, it was not published as a separate pamphlet for mass distribution by UNESCO at the time.

Finally, Lévi Strauss, now 97 years old, was again invited by UNESCO to give a public lecture in 2005 on occasion of the Organisation’s 60th anniversary. It bore the modest title “Réflexion,” and basically repeated the arguments of 1971, with an additional plea for ethno-conservation, that drew heavily on some by then well-worn ecological metaphors. “Cultural diversity and biological diversity are phenomena of the same type,” Lévi-Strauss maintained apodictically in this third and final intervention (Lévi-Strauss 2007, 35). Unlike 1971, the audience reacted enthusiastically to this speech, with standing ovations in fact, and it was printed in the conference proceedings published in 2007. The tone of this lecture was conciliatory, perhaps moderated by the fact that UNESCO had decided in the meanwhile to reprint both his 1952 and 1971 contributions in pamphlet form (Lévi-Strauss 2001; cf. Lévi-Strauss 2008).

What elicited these very different reactions in 1950, 1972, and 2005? Wiktor Stoczkowski, a French historian of anthropology, has argued that it was not so much radical changes in Lévi-Strauss’ views on human history and evolution which explain these differences, but rather changes in the political context. According to Stoczkowski, the main argument of Lévi-Strauss’ *Race et histoire* in 1952—namely that human progress is linked to a universal “aptitude ... to establish mutual exchanges with others”—lined up with the “ideology of cooperation, whose propagation UNESCO wished to promote” at the time. In contrast, Lévi-Strauss’ 1971 intervention emphasized “the right of every culture to remain deaf to the values of the Other”—a kind of stubbornness and single-mindedness—as a condition for cultural creativity, and this clashed with the programme of “educational action on a world-wide scale” that UNESCO wanted to deploy to combat racism. Finally, the warm reception that Lévi-Strauss’ lecture met with in 2005, was due to yet another shift in UNESCO’s

¹The English translation (Lévi-Strauss 1992a, xiii) has “lively scandal”, which is a rather overstated rendering of “un assez joli scandale.” Lévi-Strauss later toned down his earlier account of the scandal in *De près et de loin* (1988), a book based on an extended interview with Didier Eribon (Lévi-Strauss and Eribon 1991, 152).

doctrines. “Unification,” as Stoczkowski explains, “now had the grim name of ‘globalization’, and was seen as a threat to diversity” (Stoczkowski 2008). This clearly fell in line with Lévi-Strauss’ emphasis on the importance of conserving the diversity of cultures. Throughout his career, that is, Lévi-Strauss remained committed to a view that regarded human diversity as a *conditio sine qua non* of cultural vitality and creativity, only subtly shifting emphasis from exchange to autonomy to co-existence (cf. Stoczkowski 2007, for a more detailed analysis).

What made Lévi-Strauss’ contribution of 1971 particularly provocative, however, was not only that it called for the respect and even promotion of cultural autonomy, but that it explicitly brought genetic, and by extension racial diversity into the fold of cultural diversity, by claiming that the former was an immediate product of the latter. This indicates the degree to which Lévi-Strauss’ work does not easily fit into the usual foil of a “clash of two cultures”, with natural scientists insisting on nature’s ability to entrench rigid difference, and cultural scientists insisting on culture’s ability to transcend and overcome natural differences. As Kamala Visweswaran noted, Lévi-Strauss remained committed to a “Boasian four-field anthropology” in his “attempt to ‘harness the evolutionary, archeological, linguistic and mythological data [...] to a critique of modern racism” (Visweswaran 2003, 229). As a consequence, Lévi-Strauss always followed contemporary developments in the life sciences very closely. This is true for the cognitive sciences, as Andrew Mendelsohn has shown (Mendelsohn 1999), but it is also true for genetics, population and molecular genetics in particular, as I will attempt to demonstrate in this essay.

Cultural and genetic diversity appeared to Lévi-Strauss from very early on as analogous phenomena, exhibiting similar patterns and being subject to the same type of historical processes. The latter is perhaps not a trivial claim, as Lévi-Strauss occasionally can be, and often has been understood to depreciate historical in favour of structural analysis, especially since his ferocious attack on Jean-Paul Sartre’s historicism at the end of *The Savage Mind*. Where Lévi-Strauss seemed to devalue history, however, he was usually arguing against a specific understanding of history, an understanding of history as a linearly unfolding and totalizing process, running through developmental stages in analogy to the ontogeny of an individual organism (Clarke 1981, 220–226). Instead of such an ‘evolutionary’ understanding of history, Lévi-Strauss favoured a view of historical progress—or rather progression, to use a less loaded term—as a purely stochastic process occurring through the chance combination of otherwise independent, and historically intransigent elements. Such a view did not entail the end of history. If anything, as I will try to explain, it widened the scope for contingency, agency and ultimately politics in human affairs. This is precisely why, as Stoczkowski claims, Lévi-Strauss could elicit such different reactions over time while remaining true to his basic theoretical convictions. His understanding of the history of humankind, whether genetic or cultural, included the possibility to *make* history, and thus throws light on the question why telling history, even with the help of technologies of DNA analysis, remains such a morally and politically contentious affair.

In order to make this point, I will go through Lévi-Strauss’ writings chronologically, focussing on passages in which he relied on arguments taken from contemporary genetics.

In a first section, I will discuss an explicit analogy that Lévi-Strauss drew between kinship systems of pre-literal societies and Mendelian genetics in his first major publication, *The Elementary Structures of Kinship*, published in 1949. The second section will turn to *Race and History* in order to reveal the combinatory logic that underlies its presentation of the conditions for human progress. Section three, finally, will examine the argument of “Race and Culture,” which made use of recent results from population genetics which to Lévi-Strauss demonstrated the malleability of the genetic composition of human populations. In a concluding section, I will take up Lévi-Strauss’ notion of “tinkering (*bricolage*)” to elucidate the relationship which he saw at work between humans, their history, and their DNA.

By paying close and detailed attention to the substance of the genetic arguments that Lévi-Strauss exploited throughout his career, I am not attempting to demonstrate that he was somehow influenced by contemporary biological thought. Nor do I believe that Lévi-Strauss took recourse to genetics for merely strategic reasons, either to bolster his version of anthropology with the authority of the natural sciences (Johnson 2003, 118–119), or to escape the contradictions and shortcomings of his account of race and racism (Visweswaran 2003, 237). Rather, my aim is to show that Lévi-Strauss was part of an intellectual tradition in the human sciences of the twentieth-century that used genetics not as a resource for essentializing and reifying difference, but quite on the contrary, as a resource that provided the conceptual tools to overcome the historical determinism inherent in evolutionary accounts of humanity. What Lévi-Strauss’ occasional engagements with contemporary genetics evince, is that today’s “molecular biopolitics”—heralded by Niklas Rose as being “played out around the relations [...] between a molecular style of thought that understands key features of living beings at the molecular level in terms of intelligible and potentially engineerable molecular processes, and the ‘molar’ questions of how to govern others, and to govern ourselves, in the light of such knowledges, at the level of individual identities, families, collectivities, societies and transnational relations” (Rose 2008)—has long since been in the making.

The Elementary Structures of Kinship (1949)

Lévi-Strauss first major work, titled *The Elementary Structures of Kinship* and originally published in French in 1949, started out from an argument that partially built on recent findings from mathematical population genetics regarding incest. In chapter 2 of this classic of structuralist anthropology, Lévi-Strauss tried to establish that incest taboos did not simply reflect a more or less instinctive desire to avoid dysgenic unions, as the prominent maize geneticist Edward M. East had argued (1938). In criticizing this stance, Lévi-Strauss relied heavily on two papers published by the population geneticist Gunnar Dahlberg in 1929 and 1938 respectively. Dahlberg had developed a mathematical model allowing for the prediction of population genetic effects of incest. The model built on the assumption that a population, in which the number of consanguineous unions equalled the number that would occur by random crossing—that is, in a state of “panmixia”, as population geneticists called it—would be in an equilibrium state. Deviations from this equilibrium state—either through changes in population size or through avoidance of or preference for unions with close kin—would result in calculable fluctuations of the ratio of homozygote to heterozygote carriers of

rare, recessive defects, but not in a progressive deterioration (or improvement) of a population's genetic health as such. The effects of a preference for consanguineous marriages, moreover, turned out to be exceedingly small. As Dahlberg himself concluded in last sentence of his 1929 paper, “[a]s far as heredity is concerned, inhibitions [of marriages among kin] do not seem to be justified” (Dahlberg 1929, 454).

Although Lévi-Strauss' summary of Dahlberg's arguments in *The Elementary Structures of Kinship* is formulated ambiguously—confusing frequency of recessive carriers with degree of heterozygosity—it demonstrates considerable sensibility to the sophisticated, mathematical discourse of population genetics. Above all, Lévi-Strauss evinces clear awareness of what can be considered the crux of population genetic reasoning in general. “[C]onsanguineous marriages merely match up genes of the same type,” he wrote, “while a system having the law of probability as its only determinant for the union of the sexes [...] would mix them haphazardly. But the nature of the genes and their individual characteristics remain the same in both cases. [...] Consanguineous marriages contracted long before therefore have no influence; they only affect the generations immediately following” (Lévi-Strauss 1969, 15).² Genes, that is, remain untainted by the history of their combinations; their occasional union in the course of history did not enhance their effects. No one less than Wilhelm Johannsen, in drawing the very distinction between genotype and phenotype, had emphasized that this “ahistoric” perspective was the crucial ingredient of Mendelian genetics, separating it from traditional accounts of heredity which assumed that hereditary dispositions accumulate and evolve from generation to generation (Johannsen 1911, 139; cf. Bonneuil 2005). And it was precisely this perspective that after all made inheritance in populations amenable to the kind of combinatorial analysis presented by the likes of Dahlberg.

Although Dahlberg had provided him with a powerful argument against biological and psychological rationalizations of incest taboos, Lévi-Strauss conceded in the preface to the second edition of *Elementary Structures of Parentage* (1967) that evolutionarily entrenched and psychologically hardwired aversions against unions with close kin might exist after all (Lévi-Strauss 1969, xxviii–xxix). He could make this concession, because his own argument for the cultural autonomy of incest regulations transcended all deterministic accounts about their origin. In a number of cultures, he observed, a distinction was made between parallel cousins on the one hand, i.e. sons and daughters of one's mother's sister or one's father's brother, and cross cousins, on the other, i.e. sons and daughters of one's mother's brother or one's father's sister. Moreover, some cultures classify parallel cousins with siblings, thus imposing a strong taboo on marriages among them, while at the same time preferring, or even prescribing marriages between cross cousins. Genetically, this distinction is meaningless, as parallel and cross cousins share the same degree of genetic relatedness, but culturally, in a lot of cases, all-important. Cultural significance is invested, that is, precisely where nature remains indeterminate. As Lévi-Strauss explained:

²The English translation follows the second, revised edition of *Les structures élémentaires de la parenté*, published in 1967. The passages quoted here, and in the following, remained unchanged against the first edition, however.

Nature assigns to each individual determinants transmitted by those who are in fact his parents, but it has nothing to do with deciding who these parents will be. [...]. Thus, mutations aside, nature contains one solitary principle of indetermination, revealed in the arbitrariness of marriage. If, in keeping with the evidence, nature is acknowledged as being historically anterior to culture, it can be only through the possibilities left open by nature that culture has been able to place its stamp upon nature and introduce its own requirements without any discontinuity. Culture yields to the inevitability of biological heredity. Eugenics itself can barely claim to manipulate this irreducible fact while respecting its preconditions. But culture, although it is powerless before descent, becomes aware of its rights, and of itself, with the completely different phenomenon of marriage, in which nature for once has not already had the last word. (Lévi-Strauss 1969, 30–31)

The point that Lévi-Strauss is making here may appear surprisingly scientific, given his scepticism about biological and psychological rationalizations of incest taboos. But in fact he was not in search for a solution to the problem of incest prohibitions on either side of the divide between “man’s biological existence and social existence”, but rather for a solution that provided a “link” between the two (*ibid.*, 24–25). And he found that link in situations where culture operates with elements which are intrinsically determined by nature, but whose combination is left to chance and circumstance alone. The oblique reference to eugenics makes this standpoint abundantly clear. Eugenicists have to take nature as their starting point; but in manipulating it they inadvertently assert culture’s hegemony. Genetic rationality, based as it is on combinatorial procedures, is thus just another expression of the universal proclivity of culture to assert its autonomy over nature, at least as far as that autonomy goes.

Lévi-Strauss was fully aware of this analogy between ‘primitive’ kinship systems and genetic reasoning. *The Elementary Structures of Kinship* contain a section which is headed “The native and the theoretician” and establishes a fundamental analogy between the social systems of exchange founded in marriage rules and incest taboos, and the workings of Mendelian genetics. “There is another field,” Lévi-Strauss claimed, “where individual statuses are interpreted in terms of a simple or complex dichotomy, and where the combined physical characteristics of a given subject are regarded as resulting from the combination of certain elementary characteristics inherited from the parents. This is the field of genetics” (Lévi-Strauss 1969, 108). In fact, the whole architecture of *The Elementary Structures of Parentage* seems to be built on this structural analogy: Just like a textbook in classical genetics would, Lévi-Strauss started out from an ideal case – or “elementary formula”, as Lévi-Strauss called it (1969, 129)—namely that of cross-cousin marriage explained above, and then moved on to analyze other cases of growing complexity. The use of diagrams closely resembling Mendelian pedigrees throughout the book, and the fact that Lévi-Strauss collaborated with a mathematician, André Weil, to produce an appendix containing a formal analysis of kinship systems only adds weight to the analogy.

The possibility of such a formal analysis, as already alluded to, points to an underlying “ahistoric”, or more precisely anti-evolutionary and stochastic, understanding of cultural elements and their exchange and distribution over time and space. Before I turn to this

aspect of Lévi-Strauss' understanding of history and culture in the next section, two final remarks are in order about the structural analogy Lévi-Strauss saw between “indigenous” kinship systems and genetic systems. First, he maintained that “natives” and sociologists—“on occasion” at least—operated on the same level when engaged in the analysis of kinship systems. There was no categorical difference, that is, between “primitive” and “advanced” thought. Second, he conceded that analytic procedures in Mendelian genetics and in the sociological analysis of kinship—whether “primitive” or “advanced”—might differ in an important point. In genetics, Lévi-Strauss maintained, there “is a strict correspondence between the process of analysis and its objects” in genetics, in the sense, namely, that “chromosomes and genes exist.” The representation of social structures, in contrast to that, may be “purely ideological, [...] its legitimacy [being] weighed in terms of the result rather than by how faithfully the real process, resulting in the situation studied, is reproduced” (Lévi-Strauss 1969, 109).

One may have doubts about Lévi-Strauss' objectivist reading of genetics; what remains interesting about the assertions just quoted is that he clearly did not believe that kinship structures speak for themselves. Analyzing a society into “clans”, “moities”, and so on, may serve ideological and other pragmatic purposes, and the actual history of such systems may therefore not be transparent by simply looking at their representations. In other words, their reproduction involves interpretation, and this enhances rather than diminishes the historical nature of kinship systems, despite their lack in historical transparency. It is interesting to note in this respect that in a notorious televised debate between Lévi-Strauss, Roman Jacobson, François Jacob and the geneticist Phillippe L'Héritier in 1968, it was Lévi-Strauss who pointed out that the elements of the genetic code were “devoid of meaning (*dénués de signification*)”, and that meaning only arises through “the perception of a structural homology between code A and code B”; in short: through acts of interpreting. Whether one deals with language or culture—or biology, for that matter, as Jacob pointed out to Lévi-Strauss during the discussion—interpreting agents have priority over structures in the creation of meaning. Jacob should famously develop this view by employing the metaphor of a “genetic programme” which always presupposed a living cell for its execution (see Kay 2000, 307–310, for a more detailed discussion of the debate).

Race and History (1952)

The combinatorial logic that lay at the ground of *The Elementary Structures of Kinship* was also employed in Lévi-Strauss' *Race and History*, first published in 1952, to provide a solution to what he called “the paradox of cultural relativism” (Lévi-Strauss 1977, 329). Lévi-Strauss spent the first third of this essay on the diagnosis of this paradox and a critique of earlier attempts at its resolution. In essence, the paradox consisted for Lévi-Strauss in the fact that to recognize others as racially or culturally different—whether to refute them as inferior or even non-human, or to endorse them as individual contributors to a common human heritage—reflected a propensity towards “ethnocentricity” that was shared universally by humans. In being ethnocentric and recognizing others *as* others, humans revealed their common human nature. This paradox, Lévi-Strauss claims, has provoked “a hundred sociological and philosophical speculations” since the enlightenment, all of which can be reduced to “a single formula which the term ‘false evolutionism’ seems to render

best.” Both suppressing and recognizing diversity, these speculations treat “the different states of human societies, both ancient and distant, as *stages* or *steps* of a single development which, starting from the same point, must have them all converge to the same goal” (*ibid.*, 330; emphasis in the original). What in space appeared as irreducibly diverse, both in character and in value, could at least in time be considered as an organised, developing whole.

For Lévi-Strauss, there were a number of problems with this evolutionist solution of the paradox of cultural relativity. First, it built on a wrong analogy between the reproduction of organisms—which provided the ground for “true evolutionism” in biology—and the reproduction of cultural artefacts like tools. “[T]he notion of social and cultural evolution only contributes at the most an attractive, but dangerously convenient means of presentation of the facts” (Lévi-Strauss 1977, 331). Second, it assumed a false equation of spatial and temporal distance. Taking “the part as the whole”, the scarce, mostly archaeological evidence for certain similarities between ancient and contemporary civilizations was taken as sufficient proof for placing these civilizations into the same phase of development. But “[i]n truth, there are no peoples still in their childhood. They are all adult, even those who have not kept the diary of their childhood and adolescence.” Speaking of “peoples without history” was an “elliptic formula” which only meant “that their history is and will remain unknown—not that it does not exist” (*ibid.*, 335). Finally, the example of pre-Columbian America demonstrated that humans are able to adapt to an alien environment in relatively short time and in relative isolation from the rest of humanity, developing a great diversity of innovations and institutions in the process. The development of archeological knowledge, in America and elsewhere, Lévi-Strauss maintained, “tends to *spread out in space* those forms of civilization which we [i.e. European scholars] imagined *spread out in time*” (*ibid.*, 337; emphasis in the original).

While these statements amount to a rejection of developmental accounts of human history, it is clear that they do not result in a rejection of history as such. Despite his criticism of models of a linear, progressive development of humanity, Lévi-Strauss retained an important distinction between *forms of history* from these models. For him, as for evolutionist anthropologists before him, there existed societies with “a progressive, acquisitive history, which accumulates discoveries and inventions in order to construct great civilizations”, while other societies exhibited “another history, perhaps equally active and as talented, but from which is lacking the synthetic gift that is the privilege of the former” (Lévi-Strauss 1977, 335). This distinction of “static” and “cumulative” forms of history, however, was not linked by Lévi-Strauss to intrinsic properties of certain cultures, as his later designation of “cold” and “hot” societies, with its echoes of the doctrine of racial temperaments, could make one believe (Pace 1983, 52–53). “[T]here is no cumulative society in and of itself,” Lévi-Strauss emphasized in *Race and History*, “[c]umulative history is not the property of certain races or certain cultures which would thus be distinguishable from others” (Lévi-Strauss 1973, 356). For one thing, all cultures show a propensity towards independent, technological innovations – “mutations,” as Lévi-Strauss once called them in an explicit analogy with biology (*ibid.*, 337). The distinction between “static” and “cumulative” history is therefore not a clear-cut one. “[A]ll history is cumulative in various degrees” (*ibid.*, 352).

Moreover, all innovations presuppose prolonged efforts from individuals, rather than culturally or racially homogenous groups. “One has to distinguish carefully,” Lévi-Strauss insisted, “between the transmission of a technique from one generation to the other, which is brought about easily, as it is brought about by daily observation and training, and the invention and improvement of techniques in the fold of each generation. The latter always necessitate the same imaginative powers and the same passionate efforts on the part of certain individuals” (*ibid.*, 349). Finally, the same technologies often appear simultaneously and independently in geographically remote cultures, making it obvious that they “did not depend on the genius of a race or culture, but on conditions so general that they situate themselves outside human consciousness” (*ibid.*, 352).

In short, rather than organically developing out of each other, technological and other cultural innovations are rare, singular, independent and essentially distributed events. Their massive concentration, with the industrial revolution of the West, in a relatively short and recent period of time therefore presents a problem, but a problem that can be addressed by taking its stochastic nature into account. It corresponds, Lévi-Strauss maintains, to a “well-known problem of the theory of probability”, the problem of “determining the relative probability of a complex combination in relation to other, less complex combinations of the same type” (Lévi-Strauss 1973, 353). Using the analogy of gambling, he proceeded on that basis to explain the conditions under which cultures were likely to acquire cumulative forms of history. While it would be very improbable for an individual roulette player to win by betting on a very long series of certain numbers, chances would stand much better for a “coalition of gamblers.” Likewise, “cultures that have succeeded in realizing the most cumulative forms of history [...] have never been isolated cultures, but rather cultures which willy-nilly combined their respective games and realized through various means (migrations, borrowings, commercial exchanges, wars) those coalitions of which we have just imagined the model” (*ibid.*, 354).

It has been noted that the stochastic model that Lévi-Strauss developed in *Race and History* to explain the difference between “static” and “cumulative” cultures was “implicitly biological” in the sense that the “necessary elements for [this] model of cultural interaction and adaptation were already present in neo-Darwinian genetics” (Johnson 2003, 115). Explicit references to contemporary genetics are rare in the essay, but Lévi-Strauss involvement in the formulation of the first UNESCO Statement on Race, the scandal it raised among physical anthropologists, and the intense discussions in journals like *Man* that preceded the publication of the second Statement, make it highly likely that he was familiar with the anti-racist literature produced by population geneticists, such as Gunnar Dahlberg’s *Race: Reason and Rubbish* (1943) or Theodosius Dobzhansky’s and Leslie C. Dunn’s *Heredity, Race and Society* (1946). Just as Lévi-Strauss, these life scientists invoked stochastic models of gene circulation to tread a thin line between rejecting typological notions of race, which were often connected to theories of progressive evolution, and retaining a population geneticist sense of race that would allow for a continued study of human populations and their history in terms of changes in gene frequencies (Gayon 2003; Reardon 2005, 35). Finally, there are striking parallels between *Race and History* and the anti-racist argument of Franz Boa *The Mind of Primitive Man* (1911), which contained an

extended discussion of the foundations of Mendelian genetics (Müller-Wille 2005; on Lévi-Strauss indebtedness to Boas see Visweswaran 2003, 229–230).

In comparison with the Boasian anti-racist tradition, however, Lévi-Strauss' essay of 1952 is characterized by an outspoken pragmatic dimension. The stochastic model it proposed assumed a coalition among several groups of gamblers playing “on several roulette tables” (Lévi-Strauss 1973, 354). This assumption provided an implicit answer to a question that Lévi-Strauss had raised early on in the essay, the question namely, “whether human societies are not defined (with regard to their mutual relationship) by a certain *optimum* diversity beyond which they could not go, but below which they should not go either without endangering themselves” (*ibid.*, 327; emphasis in original). At the end of *Race and History*, Lévi-Strauss returned to this question to answer it more explicitly in the affirmative. Diversity, his analysis had revealed, was a precondition of rapid progress through coalition and collaboration. Yet coalition and collaboration also threatened this very precondition. “[H]umanity must hold it as a sacred duty”, Lévi-Strauss insisted in no uncertain terms, “to keep the two terms of this contradiction in mind. [...] It must, naturally, avoid a blind particularism which would tend to reserve human status for one race, one culture, or one society; but it must also never forget that no fraction of humanity should dispose of formulae which could be applied to all, and that a humanity merged into a single way of life is inconceivable, because it would be an ossified humanity” (*ibid.*, 361).

It is in sailing the Scylla and Charybdis of promoting unification and maintaining or re-establishing diversity that Lévi-Strauss saw an “immense task” for international organisations. And he was far from considering the latter task as a merely conservative or conservationist one. There were “defunct diversities”, “valueless residues of modes of collaboration which exist as putrefied vestiges constituting a permanent risk of infecting the international body” that needed to be “pruned, amputated, if need be, to facilitate the birth of other forms of adaptation” (Lévi-Strauss 1973, 361). Again, one can see that his structuralism could accommodate a good deal of agency, not only with respect to the interpretation—as seen in the previous section—but to the actual production of structures as well. Unification and diversification, as Lévi-Strauss put it at the close of *Race and History*, are “two different manners of *making oneself*” (Lévi-Strauss 1973, 362). If one recapitulates the overall argument of *Race and History*, one can see why this is so. The structures or “formulae” developed by different cultures are subject to political agency—and thus to history in the sense of something being *made* rather than developing out of its own—precisely to the degree to which they were conceived of as separate and independent elements of culture that could be combined or disposed of freely in order to achieve a particular goal.

“Race and Culture” (1971)

Race and History, written as it was in the wake of UNESCO's campaign against policies of racial discrimination, placed emphasis on the political re-configuration of international relations in order to overcome ethnic conflicts. “Race and culture,” the lecture Lévi-Strauss delivered in front of UNESCO officers in 1971, shifted this emphasis towards the preservation of ethnic diversity as a valuable cultural asset. That this was a shift in emphasis

only, rather than a break with earlier convictions, becomes apparent from the fact that “Race and culture” reiterates Lévi-Strauss’ earlier standpoint according to which progress depends on an optimal balance between the conflicting tendencies of unification and diversification. “The great creative epochs in history”, he insisted in “Race and culture,” “were those in which communication had become adequate for distant individuals to stimulate each other, but not frequent and rapid enough for those obstacles, indispensable between individuals as they are between groups, to be reduced to the point at which diversity becomes levelled out and nullified by excessively facile exchange” (Lévi-Strauss 1971, 625).

Moreover, the shift in emphasis is easily motivated. In 1953, only a year after publication of *Race and History*, Lévi-Strauss put together a “Preliminary memorandum on the programme of the International Social Science Council” which focused on problems resulting from rapid population growth.³ Hence the spatial metaphor of an “optimal distance” that Lévi-Strauss used in stating the need for finding a balance between unification and diversification; the growth of the world population was in his eyes literally diminishing distances between individuals and cultures, with psychological and physical effects that could only destroy the kind of diversity that he envisaged as the precondition of human progress. This issue had also found a powerful literary expression in Lévi-Strauss’ autobiographical *Tristes Tropiques* (1955), which contained an acerbic description of the conditions in big Indian cities like Calcutta which he had visited in 1950 (Lévi-Strauss 1992b, 134–149; cf. Pace 1983, 44–46).

Contemporary reactions in *Le Monde* and *The Chicago Daily News* indicate that Lévi-Strauss’ 1971 speech did indeed create some public stir (Visweswaran 2003, 234). If that was so, however, it was not simply because of the shift in emphasis just described. By the 1970s, ethnic diversity was certainly already viewed as a valuable, but endangered asset. In fact, already in 1966 UNESCO spoke of cultural diversity as “part of the common heritage belonging to all mankind” in its Declaration of the Principles of International Cultural Cooperation, and in 1972 it should adopt a Convention concerning the Protection of the World Cultural and Natural Heritage (Stenou 2007). What may have caused irritation in the audience of Lévi-Strauss’ lecture, however, was his claim that creativity not only rested on diversity, but to some degree also on a refusal to communicate and cooperate—“a certain deafness to outside values, even to the extent of rejecting or denying them” (Lévi-Strauss 1971, 625)—and that he chose to illustrate this claim by turning to racial diversity as an *expression* of cultural creativity. “Far from having to ask whether culture is or is not a function of race,” Lévi-Strauss maintained, “we are discovering that race – or what is generally meant by this term – is one function among others of culture” (*ibid.*, 617).

In support for his provocative conclusion, Lévi-Strauss once more relied on results from contemporary population genetics, more specifically, on a review paper published by the human geneticist James V. Neel in the journal *Science* in 1970. The paper was based on a research program that Neel had initiated in the early 1960s, and which involved an interdisciplinary team of scientists ranging “from the cultural anthropologist to the

³An excerpt from this memorandum has been published in *The UNESCO Courier*, 2008, 5, URL = http://portal.unesco.org/en/ev.php-URL_ID=41841

mathematical geneticist.” The aim of the programme was to “provide valuable insights into problems of human evolution and variability” by carrying out a “systems type of analysis” on a population that “represented the best approximation available to the conditions under which human variability arose.” The choice fell on three South American “tribes”, the Xavante of the Brazilian Mato Grosso, the Makiritare of southern Venezuela, and the Yanomama of southern Venezuela and northern Brazil“ (Neel 1970, 815). The study involved Brazilian, Venezuelan and US-American scientists and had received support from the US Atomic Energy Commission and the World Health Organisation (Lindee 2003).

Neel summarized results from the project under “four salient points”, the first of which—“microdifferentiation and the strategy of evolution”—was the one that Lévi-Strauss referred to in “Race and culture”. Neel and his team had collected blood samples from the tribes and had analyzed these for biochemical and cytological markers related to 27 different genetic loci. Intra- and intertribal variation patterns at these loci were then described using a “distance function” that had been developed by Luigi Luca Cavalli Sforza and A. W. F. Edwards. The results exhibited a curious pattern, with genetic “distances” between villages of the same tribe being almost as great as those between different tribes. In part, Neel admitted, these pronounced differences could be due to “stochastic effects.” But he also maintained to have discovered “structural factors” that could explain them, in particular a “fission-fusion pattern of village propagation, in consequence of which new villages are often formed by cleavages of villages along lineal lines (fission)”, and the fact that “migrants to established villages often consist of groups of related individuals.” Relying on the work of the early population geneticist and evolutionary biologist Sewall Wright, Neel interpreted “[t]his situation, of subdivision of a population into genetically differentiated and competing demes [...], as being most conducive to rapid evolution” (Neel 1970, 815-816).

Lévi-Strauss paraphrased these results quite faithfully in “Race and culture”, presenting them as a vindication of the perspective on race he had developed in *Race and History*. The “new science” of population genetics—whose beginnings Lévi-Strauss dated wrongly, but quite revealingly in 1950, the year in which the first UNESCO Statement on Race had been published—proved that “customs, hitherto rejected as criminal or absurd [had] both meaning and purpose” (Lévi-Strauss 1971, 614). What is more, the latest results of this science corroborated the vision of history and progress he had expounded in *Race and History*. The corresponding passage, in which Lévi-Strauss made this point, is worth being quoted in full:

Geneticists are at present putting forward similar views [as in *Race and History*] on biological evolution, in pointing out that a genom [sic] is in reality a system within which certain genes function as regulators and others act in concert on a single characteristic (or the contrary, if several characteristics depend on a single gene). What is true of the individual genom, is also true of a population, in which the combination of a number of genetic inheritances— in which until recently a “racial type” would have been identified—must always be such as to allow the establishment of an optimum equilibrium and improve the group’s chances of survival. In this sense, it might be said that in the history of populations, genetic recombination plays a part comparable to that played by cultural recombination in

the evolution of the ways of life, techniques, knowledge and beliefs by which different societies are distinguished. (Lévi-Strauss 1971, 620)

This passage is remarkable for the awareness it demonstrates of the complex picture of evolution that molecular and population geneticists were beginning to outline in the 1960s. The mention of “regulators” is an obvious reference to Jacques Monod’s and François Jacob’s operon model of genetic regulation; as already mentioned, Jacob had participated alongside Lévi-Strauss in a televised discussion about the code of life, and the former had just published his much acclaimed book *The Logic of Life* (Jacob 1970). Monod and Jacob had proposed the operon model in 1960 to account for the ability of the bacterium *E. coli* to switch to lactose metabolism once lactose was present in the environment. They did so by proposing a feedback loop between structural genes on the one hand, which carried the ‘structural information’ for the production of the enzyme breaking down lactose, and regulatory genes on the other, which were involved in the regulation of the expression of structural information. The functionality of genes, that is, depended on the *combination* of two or more regions of DNA.

The reference to an “optimum equilibrium”, on the other hand, pertains to another example from population genetics that Lévi-Strauss quoted in “Race and culture” to support his own argument. “In a memorable article,” as Lévi-Strauss put it, Frank B. Livingstone had used the earlier discovery of heterosis in sickle cell anaemia—the adaptive advantage that the sickle cell allele conferred to its heterozygous carriers in malaria-inflicted environments, such as those created by artificial irrigation—to demonstrate “that the appearance of malaria and the subsequent spread of sickle cell [sic] must have followed the introduction of agriculture” (Lévi-Strauss 1971, 618-619). A disease, which prior to its molecular deconstruction had signified racial degeneration, if not inferiority (Wailoo 1996), now turned out to be an adaptation— “an evolutionary response to [a] changed disease environment,” as Livingstone called it (1958, 557)—connected with one of the most important innovative periods in human history, the agricultural revolution of the neolithicum. Not surprisingly, therefore, sickle cell anaemia has a powerful role to play to this day in the shaping of racial identities in the Americas (Tapper 1999; Fry 2005; Wailoo and Pemberton 2006).

If anything, such results only exacerbated the stochastic view of history Lévi-Strauss had developed twenty years earlier, with periods of invention and improvement made possible by relative isolation alternating with periods of contact, coalition and exchange. Most importantly, such a view involved an inversion of the usual explanatory role of race in historical accounts of human diversity. “We no longer invoke racial characteristics in trying to explain the macroscopic differences appearing to exist between cultures,” Lévi-Strauss concluded, “but these same racial traits—which can no longer be considered as such [i.e. as racial traits] when viewed in finer detail—in combination with cultural phenomena of which they are less the cause than the result, give valuable information about relatively recent periods which, unlike earlier prehistory, can be corroborated by archeological, linguistic and ethnographic data” (*ibid.*, 618). As a consequence, race and racial difference receded into the background of signals tracing a history which did not follow “a single path”, nor the bifurcating pattern of a “tree;” both images, Lévi-Strauss concluded, had to be replaced by

“a trellis—a figure made up of lines crossing as often as they divide” (*ibid.*, 613). Just as in *Race and History*, where he spoke of “pruning” defunct diversity, Lévi-Strauss was choosing a metaphor from gardening again, now referring to the wooden lattices that are used as support for climbing plants.

Neel ended his 1970 review article with an extended discussion of eugenic lessons that he supposed could be drawn from his “studies of primitive man” (Neel 1970, 819), including lessons about the adaptive value of infanticide and polygyny. Social customs in these “tribes” set the scene for what he called “genetic experiments” (*ibid.*, 816), a sentiment directly echoed by Lévi-Strauss (1971, 623). “Race and culture” thus portrayed race as an outcome rather than a presupposition of cultural practices, leaving room for tackling “[t]he problem of race” on an entirely new basis. Rather than belonging “either to the older physical anthropology or to general ethnology”, Lévi-Strauss maintained, it had become “the province of specialists who formulate technical questions within a limited context and provide answers carrying no implication that peoples can be graded in a hierarchy” (Lévi-Strauss 1971, 622). Just like the population geneticists of his time, Lévi-Strauss thus distanced himself from older typological notions of race, while retaining a sense of that word that would make it a legitimate subject for study and expertise from his own discipline. Accordingly, Lévi-Strauss engagement with the “problem of race,” as well as his reliance on results from the natural sciences, have been interpreted as an attempt to secure an authoritative voice for anthropology, yes even his particular structuralist approach (Johnson 2003, 118–119).

This is certainly right—after all, UNESCO called upon him as an expert from the social sciences when it asked him repeatedly to contribute to its campaign against racism. But such an interpretation hides the considerable scepticism that Lévi-Strauss expressed towards a purely scientific management of problems of ethnic conflict, overpopulation or the genetic health of populations. “Eugenics,” he maintained in “Race and culture,” is fraught with an “inherent dilemma: either we fail and the result is quite other than we intended; or we succeed and, since the products are superior to their creators, they will inevitably discover that the latter ought to have made something quite different” (Lévi-Strauss 1971, 623). And in *Race and History*, he admonished “international institutions” to remain aware of the fact “that humanity is rich in unforeseeable possibilities, each of which will, when it appears, always strike men with astonishment; that progress is not made after the comfortable image of [...] ‘improved similitude,’ [...] but rather is full of adventures, ruptures and scandals.” These assertions of the unpredictable nature of historical events found an indeed unforeseeable confirmation, when Neel was posthumously accused of having prepared the ground for genocide with his research on the Yanomami. While the accusations proved to have little substance, they resulted in the adoption of a strict code of practice by the American Anthropological Association (Lindee 2003). In this way, Neel’s research provides the first instance of what since has become a quite regular pattern of conflict and interference between scientific interests, indigenous rights and ethical concerns (Reardon 2005). In Lévi-Strauss’ own language, one could perhaps say that Neel had come too close to his research subjects—literally reaching below their skin—so that an “optimal distance” had to be restored again.

Conclusion: Tinkering with history

As Christopher Johnson has reminded us, one does not have to assume that Lévi-Strauss was directly influenced by genetics. “Whatever the problems of influence or precedence,” he maintained, “it is evident that by way of the homology suggested between the genetic and cultural, Lévi-Strauss is more generally proposing a *stochastic* model of historical change” (Johnson 2003, 115; emphasis in the original). While such stochastic models have led to the lasting dissolution, or rather, redefinition of race concepts in the life sciences (Barkan 1993), doubts about their empirical adequacy remain in the humanities. Johnson, for example, states with respect to Lévi-Strauss that he finds it difficult to see how a “combinatorial conception of cultural systems [...] can be effective at the macro-level of the historical interaction of cultures” (Johnson 2003, 114). Empirical adequacy is not the sole point here, however. By turning to another Lévi-Straussian concept, that of *bricolage* or “tinkering”, I want to conclude that, for Lévi-Strauss, combinatorial approaches were what constituted the very condition for *making* history, whether cultural or genetic, in any narrower sense of that word.

Lévi-Strauss used tinkering as a model in *The Savage Mind*, originally published in 1962, to provide an “understanding of what a science we prefer to call ‘prior’ rather than ‘primitive’ could have been”. A *bricoleur* or tinkerer uses

a set of tools and materials that is always finite and is also heterogenous because what it contains bears no relation to the current project, or indeed to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock or to maintain it with the remains of previous constructions and deconstructions. The set of the ‘bricoleur’s’ means can therefore not be defined in terms of a project [...]. It is to be defined only by its potential use, or putting this another way and in the language of the ‘bricoleur’ himself, because the elements are collected or retained on the principle that ‘they may always come in handy.’ (Lévi-Strauss 1966, 17–18).

Lévi-Strauss took care to distinguish the *bricoleur* from the engineer, who “at least in theory” commands “as many sets of tools and materials or ‘instrumental sets’ as there are different kinds of projects” (Lévi-Strauss 1966, 17). In the meanwhile, however, the concept of *bricolage* has experienced some significant extensions, both in the life sciences and in science studies (Laubichler 2007). This is justified, as Lévi-Strauss did not want his distinction to be “clearcut.” Both *bricoleur* and engineer or scientist are limited by “the material means at their disposal”, and both assert their “freedom of manoeuvre” by isolating elements from their contexts and considering possibilities of realizing new combinations, if only to varying degrees (Lévi-Strauss 1966, 19). On a fundamental epistemological and praxiological level, both Lévi-Strauss and the geneticists whose work he discussed were engaged in a homologous enterprise. Their analysis of parentage, race and human evolution, whether cultural or genetic, did not so much result in new reifications, but rather in a (no less ideological) “fractionation” of humankind into constituent elements that could (be) separate(d) and recombine(d) freely.⁴

The resulting view of history indeed conforms to a trellis—“a figure made up of lines crossing as often as they divide”—rather than a linear or tree-like development. As such, it is a powerful antidote against holist and organicist conceptions of history that see humanity in general, or a series of subsections thereof, marching along a singular path of development. Ironically, however, such an understanding of history also provides the ideal substrate to retrace a myriad of different, and seemingly conflicting narratives that connect us with the past. Using genome information to resolve and objectify questions of origin and identity that humans have always sought answers to has therefore in no way narrowed down the field of answers (Parfitt and Egorova 2006). Through such analytic methodologies, history itself has become a more flexible, many-voiced and thus contested affair than it perhaps ever was.

Lévi-Strauss himself always remained conspicuously aloof of such histories in the plural (Visweswaran 2003, 245). His structural analyses of myth, for example, aimed at the isolation of near-universal elements of mythical thought, not at the reconstruction of particular histories, and it is in this sense that Simon Clarke could claim that “Lévi-Strauss’ ambition [was] to discover the human essence as the common denominator, the universal characteristic, of every society” (Clarke 1981, 210). In analogy to recent endeavours in the life sciences, one could perhaps compare his mythological project with the Human Genome Project, rather than the Human Genome Diversity or the HapMap Project. The conceptual tools that Lévi-Strauss developed remain adequate for *both* kinds of projects, however. The tension between universalist and pluralist leanings in Lévi-Strauss’ work that so many commentators have remarked upon (e.g. Visweswaran 2003, 231) is not the result of a flawed methodology, but the immediate reflection of the historization of both culture *and* nature that the past century has brought about.

This comes to the fore in a not so nice scandal that Lévi-Strauss created more recently within his own discipline. In a review published in the journal *L’Homme* in 2001, he accused the editors of the Cambridge History of the Native Peoples of the Americas of revisionism for the emphasis they placed on phenomena of *mestizaje* between colonizers and the colonized. One of the editors, Stuart B. Schwartz, reacted to this not with a wholesale rejection of Lévi-Strauss’ claims, but more moderately. The *Cambridge History* had been an attempt to integrate the history which Native Americans themselves were “actively [...] striving to make.” Yet the difficulty remained to find a “balance between the tragedy of the conquest [...] and the responses of both colonized and colonizer.” (Schwartz 2002, 7–8). Lévi-Strauss’ repeated attempts to analyze what it means to keep such a balance, I would suggest, continue to throw light on the moral and political weight of this difficulty, even if the particular answer he found for himself is unlikely to satisfy us today.

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⁴I owe the chemical metaphor of “fractionation” to Norton Wise.

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