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# Scientific Humanisms and the Anthropocene, Or the Dream of Steering the Evolution of the Human and Natural World

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# Scientific Humanisms and the Anthropocene, Or the Dream of Steering the Evolution of the Human and Natural World

This contribution engages with different forms of humanism coming out of the history of science and evolutionary biology, called *new, scientific, evolutionary*, and *ecological*, from the interwar years to the post-war period. The focus lies on issues of progress, teleology, universalism, and Eurocentrism in the associated conceptualizations of (evolutionary) history, the present, and the future. According to the grand narrative of Julian Sorell Huxley, transitions took place at the threshold of the inorganic to the biological and from the biological to the human or psychosocial phase of evolution that changed the rules of the game. As a leading figure of the modern synthesis, he strongly opposed notions of teleology. Yet the latter was paramount in maintaining the possibility for consciously steered development in the human phase. Combined with the science of ecology and applied-ecological programs, such humanisms amounted to a prefiguration of what today is called *Anthropocene*. They, alongside the Anthropocene, stand for the responsibility of universal humankind for the future of the planet. While it seems as if the real stewards of progressive evolution were scientific elites, it is therefore also the notion of *anthropos* inherent in such concepts that appears problematic.
Keywords: Humanism, Evolution, Teleology, Anthropocene.

## Humanismos Científicos e o Antropoceno, ou o Sonho de Conduzir a Evolução do Mundo Humano e Natural

Este texto procura dialogar com as diferentes formas de humanismo, designadas como *novas, científicas, evolucionárias* ou *ecológicas*, que emergiram da história da ciência e da biologia evolutiva desde o período entreguerras até ao pós-segunda guerra mundial. O texto centra-se em questões relativas ao progresso, à teleologia, ao universalismo e ao eurocentrismo nas conceptualizações da história (da evolução), do presente e do futuro que lhes estão associadas. Segundo a grande narrativa de Julian Sorrell Huxley, as transições que tiveram lugar no limiar entre o inorgânico e o biológico e do biológico para a fase humana ou psicosocial da evolução transformaram as regras do jogo. Uma das principais figuras da síntese moderna, Huxley opunha-se fortemente à teleologia. No entanto, esta última era indispensável para manter a possibilidade de um desenvolvimento consciente na fase humana. Combinados com a ciência ecológica e com programas ecológicos aplicados, estes humanismos resultaram numa prefiguração do que hoje designamos por Antropoceno. Tal como o *Antropoceno*, estes humanismos assentam na responsabilidade universal da humanidade pelo futuro do planeta. Embora aparentemente os verdeiros guardiões do evolucionismo progressista fossem elites científicas, é então a própria noção de *Anthropos* inerente a estes conceitos que parece ser problemática.
Palavras-chave: Humanismo, Evolução, Teologia, Antropoceno.

# Scientific Humanisms and the Anthropocene, Or the Dream of Steering the Evolution of the Human and Natural World

Marianne Sommer*

I had the pleasure of meeting Dipesh Chakrabarty for the first time in Finland in 2013 for an intellectual exchange on teleology and history. These were obviously key topics of his and central concerns in *Provincializing Europe* (2008). Within the context of my own research on the history of the human origin sciences, I tackled the diverse ways in which aspects of teleology intentionally or unconsciously entered texts and visualizations about human deep history. At the said conference and in this text, I address(ed) this in its extreme form: variations of humanism that amounted to utopias of global scientific planning along the lines of evolutionary mechanisms. I am particularly pleased to take up the topic in this journal issue, because in its stead, I contributed a paper on the nineteenth century to the publication resulting from the conference. Grand visions of the human past and future that arose in twentieth and twenty-first-century paleoanthropology, evolutionary biology, and human population genetics, their popular promotion and political application, was the theme of my book *History Within* (2016). In what follows, I focus on the second part and its key figure: the biologist Julian Sorell Huxley (1887-1975).

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The attempt to extrapolate regularities as well as aims for human development through the study of evolution led to a universalization of the past and the future, a universalization of the human – even if it was conceptualized as internally variable –, in a pronouncedly teleological metanarrative. This vision was techno-scientific, elitist, and – again despite the attempt to account for the local – Eurocentric. Proclamations of the universal goals of democracy in the sense of equality of opportunity, social improvement, optimized subjects, and human unity in diversity retained a certain paternalism and were based on arguments from biology. In this grand human history, the narration of fundamental transitions took place on another scale: at the threshold of the inorganic to the biological and from the biological to the human or psychosocial phase of evolution. As name-giver and a leading figure of the modern synthesis that strove to integrate biological fields under a Darwinism updated by new knowledge from genetics, Huxley strongly opposed notions of teleology as they had existed in what for him were obsolete evolutionary theories. However, while reconceptualizing evolutionary progress in the organismic stage in a non-teleological way, it was important to him to maintain the possibility for consciously steered development in the human phase.

### *Julian Huxley and the Question of Progress*

The problem of progress was a topic of great concern throughout Huxley's career. In his early work *The Individual in the Animal Kingdom* (1912), he developed a notion of progress as an increase in the level of organization that consisted in an increase in the complexity of the division of labor between organs and body parts through differentiation and specialization with concomitant increase in their integration. By the 1930s, Huxley believed that all non-human evolutionary lines were over-specialized and had reached their endpoints. The human being was the sole "trustee, spearhead, or effective agent of any further evolutionary progress"[1]. Huxley made it clear that although humans were

1 For example, Julian Sorell Huxley, "New Bottles for New Wine: Ideology and Scientific Knowledge," *The Journal of the Royal Anthropological Institute of Great Britain and Ireland* 80, no. 1–2 (1950): 20.

the last stage in an evolutionary succession of dominant types, they, like any other organism, were a product of random and directional, but not goal-directed processes.

However, the contingent emergence of humans nonetheless signified something new that not only turned humans into very special animals but also altered the nature of evolution: "By means of tradition, man at last overcomes, if but partially, Nature's veto on the inheritance of acquired characters [...]"[2] The development of a new level of consciousness made possible the trans-generational transmission of experience and knowledge, to which Huxley also referred as a process of heredity[3]. As Huxley tried to communicate through all available media, through the London zoos during his secretaryship, as well as through UNESCO during and after his directorship, this opened up the possibility of teleology, of planned cultural evolution along progressive lines. At the same time, although Huxley conceived of evolution in the psychosocial phase, as he called it, as mainly cultural, he maintained the possibility of a goal-directed biological evolution, because the human-made environment was now the substrate against which natural selection 'measured' fitness.[4]

While teleology understood as evolution being steered towards predetermined aims could no longer be part of conceptualizations of the organismic world in the modern synthesis in general, teleology thus reentered through notions of human evolution such as Huxley's psychosocial stage. There, it was turned into an imperative: History had to become a conscious process developed along predefined lines.[5] For Huxley, the question of how progress in the psychosocial stage might

2 Julian Sorell Huxley – Papers, 1899–1980, MS 50, Woodson Research Center, Fondren Library, Rice University (hereafter JSH Papers), Series VI: Publications by Julian Huxley, Box 97: 1920–1935, Folder 3: 1922–1923, Huxley, "Heredity and Evolution", *World's Work*, Dec. 1922, 15–22, on 21.

3 Huxley, Julian Sorell, *The Uniqueness of Man* (London: Chatto & Windus, 1941), 1–33 [first published 1931], 4).

4 For another early expression of these thoughts see JSH Papers, Series VI, Box 97, Folder 1: 1920, Huxley, "Progress Resurrected", *The Athenaeum*, 30.7.1920, 150.

5 On the argumentations against evolutionary teleology and its simultaneous reintroduction into human evolution by evolutionary synthesists, see Marianne Sommer, "From Descent to Ascent: The Human Exception in the Evolutionary Synthesis," *Nuncius* 25, no. 1 (2010): 41–67.

be achieved could nonetheless be answered by looking at history from the perspective of evolution. In analogy to cladogenesis, anagenesis, and stasigenesis in the biological phase of evolution, Huxley observed that cultural evolution showed short-term optimizations through adaptation (one-sided specialization through differentiation), long-term optimizations through progress (general specialization), and non-adaptive moments (limitation). These processes were responsible for differences between cultures, progress in cultural entities, and the survival of obsolete cultural units. However, in psychosocial evolution, cladogenesis was counteracted by a high degree of convergence through the exchange of ideas and techniques between individuals, communities, religions, and cultures that produced a strong unity across the variability[6].

Before Richard Dawkins's *memes*[7], Huxley defined *mentifacts* – also called *memoids* – as components of human cultures that were not primarily of material (*artifacts*) or social (*socifacts*), but of mental function. They were materialized ideas that had a social life; they might comprise elements as diverse as machines, mass communication, scientific, legal, economic, and political systems, works of art, philosophy, social hierarchies, and styles of cuisine.[8] In front of the background of his thoughts about clado-, ana-, and stasigenesis, Huxley's point was that the selection of mentifacts had to become a conscious process. Their survival should depend on their fitness for adapting a particular culture to the increasing knowledge from the sciences. In general, adaptation in humans meant the adjustment of belief systems (rather than biological systems) to the steadily improving knowledge about the natural world (rather than to the natural world itself) through psychosocial selection. This was Huxley's new categorical imperative; the human being was "[...] the necessary agent of the cosmos in understanding more of itself"[9].

6 Julian Sorell Huxley, "Evolution, Cultural and Biological," *Yearbook of Anthropology* (1955): 2–25.

7 Dawkins, Richard, *The Selfish Gene* (New York: Oxford Univ. Press, 1976), ch. 11.

8 See also Julian Sorell Huxley, *Evolutionary Humanism* (Buffalo: Prometheus Books, [1964] 1992), chap. 1.

9 Huxley, "New Bottles," 20.

Huxley thus chaired the Idea Systems Group, in which he cooperated with journalists and writers, humanists, as well as social and natural scientists to tackle questions such as: How could ideas serve industrialism and the spread of its products as well as further inter- and supranational organization? Huxley felt that guided adaptation of ideas and societies was becoming more and more feasible because societies were increasingly self-conscious: They recorded their development in social, economic, demographic, and natural surveys.[10] In steering the evolution of idea systems on the basis of the knowledge thus gained, some world philosophy should be aimed at, but not uniformity. The goal was a cultural plurality grounded on common general beliefs. The study of idea systems and their components should eventually allow for intervention in their further development toward "[...] a new evolutionary view of man's relation to the cosmos at large and his destiny within it"[11].

Huxley saw anagenic progress at work in history in a series of systems of ideas that determined societal organization. Thus, tribal societies structured by magic belief preceded the god-centered systems of the Middle Ages. Although these were already organized around the notion of human progress, progress was considered to be under supernatural control. Even societies that focused on science in the hope for progress by means of its mechanistic and reductionist approach did not bring about true progress. Only Darwin opened the door to an evolution-centered ideological organization that allowed progress in the sense of a holistic development under human control.[12]

However, to change ideas systems, communication of adaptive knowledge was not enough. Walking through that door opened by Darwin depended also on Mr. and Mrs. Everyman. Huxley envisioned a 'fulfillment society' that provided the opportunity for an open, com-

10 JSH Papers, Series IX: Organizational Materials, Box 113: "Idea Systems Group", Folders 2–7: Idea Systems Group 1950–1956, n.d.

11 Ibid., Folder 4: Idea Systems Group, "Modern Systems of Ideas and Their Adaptation to a Changing Society", 1956, 1–13, on 5.

12 See for example Huxley, *Evolutionary Humanism*, 76–77.

plex, and holistic self-realization for those individuals who consciously strove for esthetic, intellectual, and spiritual perfection. The largest possible number of individuals would be given the broadest spectrum of possibilities to unfold their potentialities through education, accomplishment, adventure, cooperation, and meditation. Beyond personal initiative, incentives would be needed for social thinking and acting, so that cooperation, altruism, sensitivity, and sympathetic enthusiasm could spread.[13] As early as the 1920s, Huxley forced his audience to recall that humans were the embodiments of the evolutionary processes and as their apex the movers of evolutionary progress: "[...] remember that now in the fullness of time, the cosmic forces through whose agency we have been evolved, have made us the trustees of progress, and entrusted to our conscious free-will the future course of evolution"[14].

This was the core of what Huxley called *scientific humanism*. It was an idiosyncratic integration of the synthetic evolutionary science with a new humanism – a humanism that came out of the context of the institutionalization of the history of science.

### *Scientific Humanism and the History of Science*

A central figure here was the chemist and mathematician George Sarton. The history of science was at the center of Sarton's philosophical and historical system, and he attempted to institutionalize it two years before the family emigrated from Belgium to the United States through the launch of the journal *Isis* (1913). As a home to the journal, the History of Science Society was founded in 1924. *Isis* should be the instrument of discipline building from Sarton's positions at Harvard University and the Carnegie Institute; but *Isis* should also stand for something else: for the lessons of tolerance and wisdom which history had to offer. Sarton's conception of history and the role of science therein were influenced by nineteenth-century thinkers such as Auguste Comte

13 See for example Huxley, *Evolution: The Modern Synthesis* (London: Allen & Unwin, 1942), chap. 10.5.

14 Julian Sorell Huxley, *Biology and Human Life. Being the Second Annual Norman Lockyer Lecture* (London: British Science Guild, 1926), 24.

and Herbert Spencer, as well as Utopian and socialist ideas. Sarton's grand aim was a progressivist universal history that was founded o n positive science and that worked toward the brotherhood of man. If Sarton paid lip service to what at times appears as a strikingly contemporary conception of science in society, it was this liberal faith that guided most of his work.[15]

Sarton presented his program under the title "The New Humanism"[16], a French version of which was published as early as 1918. History of science should bring together the classical humanist and the humanized scientist. He defined science as the common thought of the whole world; as the organized body of all the facts and theories from which almost all arbitrariness had been excluded, and which were unanimously agreed upon by enlightened people. Because positive knowledge was the common patrimony of all humankind, the domain of science was internationalism. Moreover, science constituted the central axis of human advance and provided the fundamental method of social organization, and it was the role of the history of science to make this known. Although it was not only scientists but also artists who were the true creators and guardians of these ideals – the stewards of the future of humankind – Sarton *did* perceive a natural order of knowledge, with mathematics as the foundation, followed by physics and biology.[17] For Sarton, the new humanism was a program to understand and at the same time to increase the role of humans in cosmic evolution, and it was shared by a generation of historians of science who were internationally integrated into institutions such as *Isis* and the History of Science Society.[18]

Another key figure in this context was Sarton's British friend, Charles Singer, who had studied medicine and then focused on the history of his field. He would also be the driving force in the foundation of the British Society for the History of Science in 1947. Relying heavily on Sarton's new humanism, Singer defined a scientific humanism in his opening

15 Arnold Thackray and Robert K. Merton, "On Discipline Building: The Paradoxes of George Sarton," *Isis* 63, no. 4 (1972): 472–495.

16 George Sarton, "The New Humanism," *Isis* 6, no. 1 (1924): 9–42.

17 See also George Sarton, "The Faith of a Humanist," *Isis* 3, no. 1 (1920): 3–6.

18 George Sarton, *The History of Science and the New Humanism* (New York: Henry Holt, 1931).

of the first issue of *The Rationalist: A Journal of Scientific Humanism* in 1929.[19] It was essentially an attack against historians who neglected the true *movens* in the history of humankind – science – and against the educational system that did not convey the transformative power of science and the history of science. For Singer, acquaintance with the craft of science would help a student to live his life, but the knowledge of the history of science would show the student why his life was worth living. It would acquaint him with the purpose of human existence.

Singer taught history of biology and medicine at Oxford and University College London, and formed a network around him that connected the three main centers for the teaching of the history of science and medicine, which included Cambridge.[20] Among Singer's acquaintances, friends, and collaborators was Huxley, who for example partook in a summer school on science and civilization that Singer co-organized in 1922. Like Sarton's and Singer's, Huxley's thinking was imbued with nineteenth-century values. His grandfather Thomas Henry Huxley had been a strong believer in the progress of civilization through the advancement of science. However, in Julian's family, there were important exponents of British idealism as well as empiricism. The Huxleys and Arnolds brought together a scientific and literary elite that represented both, the cultivation of intellect and feeling, science and religion, truth and beauty.[21] From the early 1920s, Julian Huxley recognized in history a tool to integrate these opposites; history could discover what he called "the soul of science".[22]

19 Charles Singer, "Scientific Humanism," *The Rationalist: A Journal of Scientific Humanism* 1, no. 1 (1929): 12–18. For Singer's own interpretation of Sarton's new humanism and the history of science, see Dorothea Singer and Charles Singer, "George Sarton and the History of Science," in "The George Sarton Memorial Issue ", special issue, *Isis* 48, no. 3 (1957): 306–310.

20 Geoffrey Cantor, "Charles Singer and the Early Years of the British Society for the History of Science," *The British Journal for the History of Science* 30, no. 1 (1997): 5–23.

21 Colin Divall, "From a Victorian to a Modern: Julian Huxley and the English Intellectual Climate," in *Julian Huxley. Biologist and Statesman of Science. Proceedings of a Conference Held at Rice University 25–27 September 1987*, ed. C. Kenneth Waters and Albert Van Helden (Houston: Rice Univ. Press, 1992), 31–44; John R. Durant, "The Tension at the Heart of Huxley's Evolutionary Ethology," in *Julian Huxley. Biologist and Statesman of Science. Proceedings of a Conference Held at Rice University 25–27 September 1987*, ed. C. Kenneth Waters and Albert Van Helden (Houston: Rice Univ. Press, 1992), 150–160.

22 Julian Sorell Huxley, *Essays in Popular Science* (London: Chatto & Windus, 1926), 165–169; see also Anna K. Mayer, "When Things Don't Talk: Knowledge and Belief in the Inter-war Humanism of Charles Singer (1876–1960)," *The British Journal for the History of Science* 38, no. 3 (2005): 325–347.

*Evolutionary Humanism and the Meaning of Diversity*

As for Sarton, for Huxley some scientists were more equal than others. However, in Huxley's thinking, biology was more relevant to the project than the physical sciences, and the study of evolution was key. Due to the centrality of evolution, Huxley also made use of the term *evolutionary humanism*.[23] Huxley and fellow biologists like J. B. S. Haldane and Lancelot Hogben were part of a wider movement in 1930s Britain that was driven by an interest in the relations between science and society, the social responsibility of the scientist, the relevance of biology to human values and to the human present and future, the paradox of individuality in mass society, and problems of integration and progress.[24] From Hogben's anti-elitist, anti-classist, and anti-imperialist perspective, science appeared as good science only if it was for the good of the people, if it answered to the common needs of the entire humankind. It had to be concerned with moral as well as material advancement. Hogben shared with Huxley and Haldane the belief that progressive science could not thrive on its own. It depended on a favorable social context.[25]

In the interwar years, Huxley, Hogben, and Haldane entered the public sphere to advocate for social reform and against laissez-faire capitalism, nationalism, and fascism. They especially undermined what they perceived as a eugenics and racial anthropology that relied on false understandings of biology. Huxley, Hogben, and Haldane drew on the Mendelian process of heredity transmission and the importance of environment for genetic expression to argue for equality of social opportunity. On the basis of the new insights into heredity and her-

23 On Huxley's scientific and evolutionary humanism, see in particular Huxley, *Uniqueness*, ch. 13; Id., *Evolutionary Humanism*, chs. 4–5.

24 For a scholarly treatment of the phenomenon see Roger Smith, "Biology and Values in Interwar Britain: C. S. Sherrington, Julian Huxley and the Vision of Progress," *Past and Present* 178 (2003): 210–242; see also Paul Gary Werskey, "British Scientists and 'Outsider' Politics, 1931–1945," *Science Studies* 1, no. 1 (1971): 67–83.

25 E.g. Julian Sorell Huxley, "The History of the Science," and "Science and General Ideas," in *More Simple Science: Earth and Man,* Julian Sorell Huxley and Edward Neville da Costa Andrade (Oxford: Blackwell, 1935), 296–348; John Burdon Sanderson Haldane, *The Inequality of Man and Other Essays* (London: Chatto & Windus, 1932), 50–68 ("Is History a Fraud"), 119–139 ("The Place of Science in Western Civilization") and 191–201 ("Science and Invention").

itability they counteracted attempts to biologically found the social groups of class and race. Central in this process was a reevaluation of variation. Haldane had worked on mathematical formulations of the effects of selection and other mechanisms on genetic variability, and he explained that "[a]s I come to the study of society from that of genetics, it is natural enough that I should be prejudiced in favour of human diversity and should hope that my country will not try to suppress it"[26]. Genetic variability in humans of course meant genetic inequality, but seemingly paradoxically, Haldane and his peers used the fact of genetic inequality to argue for political, economic and social equality. Biological inequality was turned from a problem of conservative politics into a purpose in progressive evolution. Political systems that cajoled or forced people into homogeneity lost their potential for further advance, and classical eugenics and racial anthropology were perceived as in the service of such systems.

Huxley relied on Hogben's work on gene-environment interaction to the degree of reasoning that in order to allow every individual in a human society to take the place that best suited his or her genetic potential, the social conditions and economic resources had to be levelled – and levelled up.[27] In the 1920s, Huxley still thought that negative eugenics was scientifically possible and socially practicable by means of consultation and voluntary sterilization, at least in cases of single recessives such as deaf-mutism. Positive eugenics seemed on the verge of being scientifically cognizable and socially feasible by encouraging the particularly endowed to reproduce. However, at that time he was already skeptical about the possibility to improve the existing highest quality of the population by directed mating. To this end, one would need much more knowledge. Differences in environment first had to be abolished to bring to light the genetic differences between individuals and stocks; until then, general conclusions could only be guesswork.[28]

26 Haldane, *Inequality*, 48.

27 Huxley, *Uniqueness*, 34–84, 45.

28 E.g. JSH Papers, Series VI, Box 97, Folder 1, Huxley, "Eugenics and Eugenicists", *The Athenaeum*, 31.12.1920, 895.

Therefore, eugenics was essentially a social science. Even though Huxley, Haldane, and Hogben continued to support voluntary sterilization, and in particular contraception, as a means to social justice, eugenics as a biological tool to steer evolutionary progress mostly receded into the future.[29]

Hogben directed his criticism not only at eugenics but also at racial anthropology; the same year, Haldane, too, took issue with that field, as well as eugenics, in *Heredity and Politics*[30]. In *Dangerous Thoughts* of 1939, Hogben reinforced the vicious attack on British, German, and American eugenics and physical anthropology as targeting such scapegoats as the working classes, Jews, and colored people, as well as certain kinds of immigrants in the interest of the upper classes, 'the Aryans', and 'the Nordics', respectively.[31] Finally, Huxley also used the new understanding of heredity and of the nature-culture relation to argue against existing notions of race in popular talks and articles such as "The Concept of Race in the Light of Modern Genetics". He attributed 'racial', national, as well as class differences in IQ, aptitude, and character, and the claimed sexual differences mostly to natural, social, economic, and educational environments.[32] This obviously did not mean that there were no genetically co-determined differences between humans, but they were unlikely to correlate with social groupings; as such, they had to be valued favorably.

Because of Hogben's, Haldane's, and Huxley's awareness of the complex relations between science and society, the conditions under which a reformulated eugenic project would be acceptable were severe. At the outbreak of WWII, they were among the signatories of a statement published in *Nature* that expressed the hope that eugenic concerns would guide the reproductive choices of individuals in a future in which social conditions were improved and just, in which community

29 See also Haldane, *Inequality*, 211.

30 John Burdon Sanderson Haldane, *Heredity and Politics* (London: Allen & Unwin, 1938).

31 Lancelot Hogben, *Dangerous Thoughts* (London: Allen & Unwin, 1939).

32 JSH Papers, Series VI, Box 97, Folder 16, Huxley, "The Concept of Race in the Light of Modern Genetics", *Harper's Monthly Magazine* (May 1935), 689–698, on 691.

concerns took center stage, and a federation of the world had come into reach, thus rendering it possible to make beneficial use of what would by then be a much better knowledge of heredity.[33]

It was toward such a federation of the world that Hogben increasingly worked. In "The Creed of a Scientific Humanist" of 1939, democracy in its present form seemed doomed, communism perverted, and even a certain brand of socialism insufficient.[34] Salvation lay in the scientific humanist program that opened up the possibility of a world-government by federating nations with simultaneous increase in local self-organization with the help of expert knowledge.[35] Societal advance would be modeled on scientific practice as the prototype of all common human action. Well into the war, Hogben made another contribution to this now pronouncedly global project of scientific humanism with his *Interglossa: A Draft of an Auxiliary for a Democratic World Order* (1943): "The writer believes that the alternative to barbarism is repudiation of national sovereignties in greater units of democratic co-operation, and that day-to-day co-operation of ordinary human beings on a planetary scale will not be possible unless educational authorities of different nations agree to adopt one and the same second language"[36].

Huxley propagated his most exhaustive plan for the future of democracy in a series of radio talks he gave when touring the US in early 1940 in the service of American war intervention and collaborative postwar reconstruction. On the basis of an analysis of history and the present situation, he elaborated his belief that democracy within a nation and ultimately a democracy of nations had to find the balance , natural to life itself, between individual and community or state, bet-

33 Francis Albert Eley Crew et al., "Social Biology and Population Improvement," *Nature* 144, no. 3646 (1939): 521–522; for more on these issues see also Marianne Sommer, "Biology as a Technology of Social Justice in Interwar Britain: Arguments from Evolutionary History, Heredity, and Human Diversity," *Science, Technology & Human Values* 39, no. 4 (2014): 560–585.

34 Hogben, *Dangerous Thoughts*, 13–24.

35 Ibid., 21–24.

36 Lancelot Hogben, *Interglossa: A Draft of an Auxiliary for a Democratic World Order, Being an Attempt to Apply Semantic Principles to Language Design* (Harmondsworth: Penguin, 1943), 11.

ween rights and responsibilities, between local organization and central planning, between layperson and expert, and between freedom and security. Because the expansion of social services, scientific planning, development policy, and international collaboration could also take place in totalitarian and fascist states, these natural balances were crucial for guaranteeing civil liberties. Contrary to political fanaticism and scientific dogmatism with their reinforcement of mental unity and biological homogeneity, the natural processes of balancing demands that were only seemingly antagonistic ensured the persistence of the diversity that was so essential for progress in social as well as natural evolution.[37]

In fact, just as Huxley had discerned progressive and limiting trends in the phase of organic evolution, he observed such trends in recent human history. He contrasted revolutions, mostly toward totalitarianism (Italy, Turkey, Germany, Spain, Portugal, and 'a pale sort' in Vichy France, Japan, China, Russia), with transformations that were evolutionary, as in Scandinavia, the British Dominions, the United Kingdom, and the US under the New Deal, where measures of social security had been introduced. In such evolutionary change and in international convergence through the League of Nations, Huxley recognized certain progressive trends on a global scale: a trend away from laissez-faire toward planning and governmental control; a trend to take non-economic motives and aims more seriously; an increasing concern with the material and human resources of developing regions, and a growing realization of the necessity for some strong international organization. Huxley condemned the developments in Japan and Germany, but overall he appreciated the effort to embark on the mission of a new world order. He hoped that the US and other democratic nations would strive toward a new world order of another kind. Because these nations stood for a balance of individualistic and communistic interests, and because they esteemed diversity, such an attempt would ultimately prove progressive rather than a shortcut to an evolutionary dead-end.[38]

37 Julian Sorell Huxley, *Democracy Marches* (London: Chatto & Windus, 1941); see for example also JSH Papers, Series VII, Box 102, Folder 7, Harold B. Hinton, "Huxley Sees Us All Still Undeveloped", *The New York Times*, 3.12.1939.

38 Huxley, *Democracy*. Also JSH Papers, Series VI, Box 98, Folder 9: 1942, Huxley, "The War: Two Jobs, Not One," *The Fortnightly*, Oct. 1942, 221–228.

*Ecological Humanism and the World Heritage*

Early on, humanism also acquired a decidedly ecological bend. In a celebrated textbook of Huxley and the Wells brothers, *The Science of Life*[39], ecology was brought to bear on the scientific humanist goal of consciously steered progress along the lines of evolutionary principles. The authors observed that in the past, human interference with the ecological web had mostly happened without sufficient insight and foresight, as when new organisms like pests were brought to colonized countries, soil was exhausted through monoculture, or finite resources were exploited. Such human interventions upset the natural balances; species had been exterminated and the environment polluted. In contrast, Huxley and the Wellses called for applied ecology. In the future, a concerted effort by the sciences of life would be needed to develop ecological webs in a beneficial direction, by controlling pests and diseases, by genetically improving organisms, and by creating the desired ecological interdependencies.

Hogben saw a role for genetics in the creation of new types of plants and animals in such a future (for example by combining genes for resistance and high yield of fruit through selective breeding/crossing). And ultimately, the evolution of the human species itself would be brought under the control of "biotechnics" or "biotechnology"[40]. Huxley's applied ecology was particularly close to what Hogben called *planned ecology*: "Man has it in his power to become an active and intelligent directive agent in the evolutionary process, using his knowledge of the diversity of living creatures to decide which are essential to his own welfare as objects of use or of aesthetic satisfaction, and using his knowledge of the properties of living matter to adjust the environment of the species he chooses as members of a rationally planned ecological system"[41]. Humans had long since begun to turn the world into their

39 H. G. Wells, Julian Sorell Huxley, and G. P. Wells, *The Science of Life* (New York: Literary Guild, 1929, 1930, 1931, 1934), 961.

40 Lancelot Hogben, *Science for the Citizen: A Self-Educator Based on the Social Background of Scientific Discovery* (London: George Unwin, 1938), 1005.

41 Hogben, *Science*, 971.

own ecological system, but the process now had to be subjected to conscious scientific planning.[42]

In order to steer the global ecology, knowledge of the workings of evolution and of the contemporary diversity of living organisms that was their result was the sine qua non. If this knowledge were implemented in interdisciplinary efforts to engineer ecological systems worldwide and integrated into idea systems globally, humans would finally shoulder their responsibility. Scientists therefore had to survey the natural diversity, work toward its preservation, and toward making it accessible to everyone by means of efficient management and modern media technologies. Within a scientific humanist and human ecological framework, the same was true for cultural diversity. Huxley saw his best chance in helping to bring this about with his involvement in UNESCO.

In 1945, Huxley was asked by the Head of the Education Office if he wanted the post of full-time secretary of the Preparatory Commission with the possibility of becoming director-general of the organization once it was formally set up – a possibility that materialized at the UNESCO conference in 1946 (10.12.). Earlier that year, Huxley had submitted a pamphlet on "UNESCO: Its Purpose and Its Philosophy" to the Preparatory Commission. He proclaimed that UNESCO – through education, the natural sciences, the social sciences, the humanities, the arts, and mass media – should aim at a single world culture, at a synthesis of E ast and W est in scientific humanism, and at psychosocial progress on the basis of the knowledge gained from the science of evolution. The evolutionary approach "[...] shows us man as now the sole trustee of further evolutionary progress, and gives us important guidance as to the courses he should avoid and those he should pursue if he is to achieve that progress. An evolutionary approach provides the link between natural science and human history [...] it not only shows us the origin and biological roots of our human values, but gives us some basis and external standards for them among the apparently neutral mass of natural phenomena"[43].

42 Ibid., 964–970, 971–1009.

43 Julian Sorell Huxley, "UNESCO: Its Purpose and Its Philosophy," Preparatory Commission of the United Nations Education, Scientific and Cultural Organisation (1946), 7-8.

One such collaborative project that arose from Huxley's directorship of UNESCO was the 'History of the Scientific and Cultural Development of Mankind'. It was to contain the entire memory of humankind from prehistory to the present and emphasize the cultural achievements of the human race, dealing with war and politics only in so far as they influenced cultural and scientific progress.[44] As vice-president of the UNESCO commission for the endeavor, Huxley intended to show that this history could only be understood within the evolutionary framework. As sole trustees of evolutionary progress, humans had to protect their own diversity as well as that of their living and inanimate environments. The International Committee on (respectively, Institute for) Intellectual Cooperation, in which Huxley had been engaged, had already demanded that the preservation of the natural as well as cultural heritage should be part of the League of Nations' responsibility.[45] In his program for UNESCO, Huxley now broadened the understanding of heritage along these lines. It was the beginning of a process that culminated in the foundation of the WWF in 1961.

The same year, in a confidential interim report of his discussion circle, the Idea Systems Group, the term *ecology* had been proposed as a substitute for a concept of evolution that was still too tightly associated with the struggle for existence, the survival of the fittest, and the notion of a missing link. There was still a need in the eyes of the group to replace outdated methods and ideas with quantitative approach and population thinking, and notions of competition and absolute values with reasoning along the lines of adaptation, equilibrium, and relativism. *Ecology* stressed interrelatedness, cooperation, conservation, and constructive development of resources; it implied careful surveys of all the elements in a given situation and their interdependencies. With the development of human ecology that focused on economics and sociolo-

44 JSH Papers, Series IX, Boxes 118 and 119; also communication with Ralph Edmund Turner in JSH Papers, Series III, see Index to Selected Correspondents in Guide to JSH Papers.

45 On the International Committee on Intellectual Cooperation and the Intellectual Institute for Intellectual Cooperation as precursors of the UNESCO heritage conservation efforts, see Anna-Katharina Wöbse, *Weltnaturschutz: Umweltdiplomatie in Völkerbund und Vereinten Nationen, 1920–1950* (Frankfurt am Main: Campus, 2012), 278–287 on Huxley's role in them.

gy, it seemed possible to bridge the gap between the natural, the social, and the psychological sciences. In the ecological garb, the distinctive mark of Huxley's psychosocial phase of evolution consisted in the fact that the cultural kind of ecological climax was no fixed endpoint of development. Idea systems like habitats may replace each other successively, but there was no given final state to a system because new ideas or changes in outlook could always be introduced and a new equilibrium reached by planned development of natural and social environments.[46]

### *The Rise and Fall of Scientific, Evolutionary, and Ecological Humanism?*

An evolutionary scientific humanism, which had humans at its center as the apex of evolution and the agents of history, also gained the support of important American biologists. George Gaylord Simpson and Theodosius Dobzhansky increasingly took up the torch of evolutionary humanism for the cause of progressive human development. Indeed, Huxley, Simpson, and Dobzhansky retold and rewrote the narrative of human evolution, the history of its conception and its meaning within the broader evolutionary synthesis, for diverse academic and non-academic publics, as if to inscribe it deep into the scientific and wider historical cultures. Their publications built a tight network of intertextuality. In a letter to Huxley, Simpson described the interdependence of their ideas as follows: "Much of it [a paper Huxley prepared for the American Genetical Society] says more successfully rather nearly what I tried to say in my recent book 'The Meaning of Evolution.' The parallel is not particularly coincidental, since I have of course studied your work with care and have been profoundly influenced by it [...]".[47]

46 JSH Papers, Series IX, Box 113, Folders 2–7. Ibid., Folder 6: Idea Systems Group, "Notes on the Idea of Ecology as Applied to Man" and "Note on Ecology". For conservation and ecology in a humanist frame see also Edward Max Nicholson, "The Place of Conservation," in *The Humanist Frame: The Modern Humanist Vision of Life*, ed. Julian Sorell Huxley (London: Allen & Unwin, 1961), 385–397.

47 JSH Papers, Series III, Box 19, Simpson to Huxley, 2.8.1950.

It can be observed that, in general, scientific and evolutionary humanism gained momentum in the postwar years, and it was also increasingly internationally organized. H. J. Blackham, who was one of the driving forces behind the postwar institutionalization of British and international humanism, observed that "[t]here is undoubtedly a new and interested public for these ideas"[48]. Huxley presided over the first congress of the International Humanist and Ethical Union in 1952. The IHEU was to incorporate humanist organizations that had been sprouting internationally. It was recognized as an organization that had consultative status with UNESCO. In 1963, Huxley became the first president of the British Humanist Association (it had been preceded by the Humanist Council as a representation of the Ethical Union, the Rationalist Press Association, and the National Secular Society). In 1962, he had been elected Humanist of the Year by the American Humanist Association.

But while scientific and evolutionary humanism were increasingly consolidated, the changed international political situation also presented a challenge, even if Huxley was less negatively affected by the Cold War than such early scientific humanist allies as Haldane and Hogben. As a long-time member of the Communist Party and supporter of the agrarian program under Trofim Lysenko that led to the prosecution of geneticists in the Soviet Union, Haldane found himself in a difficult situation and moved to India in 1956. Hogben, too, was alienated, though not to the same degree as Haldane, since he was not a party member but had pursued his own brand of socialism (or indeed scientific humanism).[49] Huxley had been an important critic of Lysenkoism[50], and it was his liberal democratic ideals that were most in harmony with postwar western liberal orthodoxy. However, with decolonialization, civil and minority rights movements, the mandate of affirmative action in the US, the second wave of feminism, the youth movements,

48 JSH Papers, Series III, Box 35, Folder 5, Blackham, Director of the British Humanist Association, to Huxley, 18.10.1963.

49 Paul Gary Werskey, *The Visible College* (London: Allen Lane, 1978), 313–314, 321–322.

50 For example Julian Sorell Huxley, *Soviet Genetics and World Science. Lysenko and the Meaning of Heredity* (London: Chatto & Windus, 1949).

etc., the developments in many ways outran Huxley's ideal of equality of opportunity. The notion of a meritocracy, in which the development of the biology and culture of as many individuals as possible was optimized, stood squarely in the landscape of demands for the insurance of equality of performance through socio-political measures.[51] In an international climate that wanted equality as a fact rather than as mere possibility, the strong emphasis on the reality of biological variability (or rather inequality), even if context-dependent, was set against what Huxley perceived as misguided cultural determinism.[52]

Huxley's vision of a world society remained indebted to the enlightenment tradition and thus Eurocentric. Through his engagement with the Colonial Office and UNESCO, Africa took a special place in Huxley's utopia: Africa carried the hope for planned evolutionary success, if only it would learn from the mistakes that other regions had made in their development. This patronizing stance has been criticized by Glenda Sluga[53] in her analysis of the concepts of 'the world citizen' and 'the one world' that were central in the early years of UNESCO. She identifies Huxley's influence as general-director in steering the organization toward an imperialist and liberal development stance vis-à-vis (former) colonies. Focusing mainly on the African policy Huxley laid out for UNESCO – as opposed to the late 1920s –, Sluga classifies him as reactionary.[54] In 1960, 17 independent African nations joined the UN, holding close to 20% of the votes in the General Conference. The organization and the world at large were undergoing significant changes, while Huxley, no longer a young man, maintained his evolutionary humanist philosophy of common global development.

In general, Huxley's evolutionary humanism was a totalizing project: e verything from the individual personality, to science and techno-

51 Perrin Selcer, "Beyond the Cephalic Index: Negotiating Politics to Produce UNESCO's Scientific Statements on Race," *Current Anthropology* 53, supplement 5 (2012): 173–184.

52 Marianne Sommer, "From Descent to Ascent," 41–67.

53 Glenda Sluga, "UNESCO and the (One) World of Julian Huxley," *Journal of World History* 21, no. 3 (2010): 393–418.

54 For a more positive evaluation see Gregory Blue, "Scientific Humanism at the Founding of UNESCO," in *Comparative Criticism.* Vol. 23, *Humanist Traditions in the Twentieth Century*, ed. E. S. Shaffer (Cambridge: Cambridge Univ. Press, 2001), 173–200.

logy, the mass media, natural and cultural resources, and national and international political systems had to be developed in small local to global organizations along the lines of a planned ecology, and his motivation for conservation was anthropocentric. In the applied-ecological programs discussed above we clearly encounter earlier manifestations of what later came to be subsumed under the heading of the Anthropocene. They are therefore associated with the same problems as the Anthropocene, with which Dipesh Chakrabarty has engaged in more recent times. They have been the topic of our last encounter, a conference in Berne in 2018: the problematics of different understandings of time, of history, and of the human in evolutionary science, history, and everyday experience, and last but possibly not least, of the feasibility of techno-scientific solutions to environmental problems globally.[55] Scientific humanism in the above sense, as well as the Anthropocene, are not purely descriptive terms, they rather represent programs – a responsibility of all humankind for the further development of the globe. Today, the astrobiologist David Grinspoon, for example, demands that humankind act as a conscious geological force.[56] At the same time, these programs are associated with a scientific elite as the real "effective stewards of the planet"[57], and – despite their ostensible interdisciplinarity – possibly with the humanities as auxiliary fields.

It is thus also the notion of *anthropos* inherent in the concept of the Anthropocene that appears problematic. Historians do not think in terms of one shared history of all humankind, and they, as well as other scholars and social scientists, may ask whether everyone is equally responsible for climate change and equally shares in the profit of the planets exploitation. Rather, there are demands for a new kind of climate justice.[58] The scientific-humanist outlook, too, seems to have merged

55 E.g. Dipesh Chakrabarty, "Anthropocene Time," *History and Theory* 57, no. 1, (2018): 5–32.

56 David Grinspoon, *Earth in Human Hands: Shaping Our Planet's Future* (New York: Grand Central, 2016), 242.

57 Chakrabarty, "Anthropocene Time," 27.

58 E.g. Elmar Altvater, "Kapitalozän. Der Kapitalismus schreibt Erdgeschichte," *Luxemburg. Gesellschaftsanalyse und linke Praxis* (February 2019), accessed 1 July 2020, https://www.zeitschrift-luxemburg.de/kapitalozaen/. On these issues see also Marianne Sommer, "Die Wissenschaftsgeschichte lässt sich nicht abschreiben: Der Fall *Anthropozän*," *Nach Feierabend* (forthcoming).

natural history into human history, or – with regard to the definition of patterns of development and aims – the other way around. But such total grand stories with clearly defined epochs that signify major transitions are no longer the yarn of historians. That is not to say that the scientific humanists I have been concerned with here were devoid of sensitivity for diversity, inequality, exploitation, and violence – to the contrary, these were central issues with which they grappled. History nonetheless often appeared as one large, governable process growing out of biological evolution, and diversity as its necessary bio-cultural substrate.

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