George G. Simpson and Stephen J. Gould on Values: Shifting Normative Frameworks in Historical Context

Alison K. McConwell | ORCID: 0000-0002-2963-9436
Assistant Professor, Department of Philosophy,
University of Massachusetts Lowell, Lowell, MA, USA
alison_mcconwell@uml.edu

Abstract

George G. Simpson (1902–1984) and Stephen J. Gould (1941–2002) were both engaged with the normative – i.e., social, cultural, political, and even ethical – consequences of their evolutionary theorizing. However, there is a normative point of departure between Simpson and Gould’s work in that regard that has received little attention. Yet, their motivations converge into a larger program of resistance and social protection from misconstrued and illegitimate overreaches of the biological sciences leading up to and after the peak of the modern synthesis.

Keywords

science – values – biology – society – modern synthesis

1 Introduction

Thomas Huxley once said in 1893 in his Evolution and Ethics Lecture:¹

There is a delightful child’s story, known by the title of “Jack and the Bean-stalk,”... It is a legend of a bean-plant, which grows and grows until it reaches the high heavens and there spreads out into a vast canopy of

foliage. The hero, being moved to climb the stalk, discovers that the leafy expanse support a world composed of the same element as that below, but yet strangely new; and [their] adventures there, on which I may not dwell, must have completely changes [their] views of the nature of things; though the story, not having been composed by, or for, philosopher, has nothing to say about views.

I take Huxley to mean ‘views from the top’ in the sense that science gets us to spectacular heights, but has nothing to say about views in the sense of what those heights mean and what to do about them when we get there.

There is work that discusses the sort of foe Huxley had in mind while giving that lecture on evolution and ethics. He was warning about the dangers of scientism, or science extending illegitimately outside of itself, particularly in the form of social Darwinism.

What biology means for society is a longstanding and contentious issue spanning disciplines across history. The entry point taken in this essay is one of many roads one might venture down towards the arena of evolution and meaning. I put into conversation two well-known evolutionists and paleontologists who contextualized their reflections on the history of life socially and towards protecting society from the mischaracterizations and misapplications of biological concepts in the social domain.

George G. Simpson (1902–1984) and Stephen J. Gould (1941–2002) were both engaged with the normative, i.e., the social, cultural, political, and even ethical consequences of both scientific facts and evolutionary theorizing. However, in what follows, I’ll argue that there is a point of departure between Simpson’s and Gould’s work that has received little attention and exemplifies a shift in normative framework, which occurred more than a decade after the peak of the modern synthesis. Yet, both Simpson and Gould draw from Thomas Huxley’s engagement with biology and values as a touchstone for their own views despite their differences in approach. As we’ll see, Huxley as a common lens, unites Gould and Simpson within a larger program of resistance to protect society from overreaches of the biological sciences. This paper begins to map the often treacherous, normative terrain leading up to and following modern synthetic work.

---

2 Background

While indeed Simpson and Gould were both engaged with the normative consequences of evolutionary theorizing, their different strategies are further detailed in the section to follow.\(^3\) For now, some brief background is in order concerning (1) prior research on the relationship between their scientific ideas, and (2) a preview of their engagement with Huxley.

First, each held philosophically oriented views on how science works and the nature of evolution more generally. Many philosophers of biology have further developed Gould's ideas on evolutionary contingency.\(^4\) However, the impact of Simpson's work on philosophy has played a background role despite his heavy and sometimes controversial influence on Gould.

Simpson's relationship with Gould was both personally and intellectually complex. Gould dedicated his work to Simpson identified as one of Gould's heroes who taught him "that life had a history and evolution a meaning."\(^5\) However, their relationship took a significant downturn in the late 1970s reaching a zenith in the early 1980s.\(^6\) So while Simpson's work impacted


\[^5\] Correspondence, Stephen Jay Gould Papers, M1437, Dept. of Special Collections, Stanford University Libraries, Stanford, Calif, B693/52 outgoing correspondence 1970 Simpson Postscript (2 versions).

\[^6\] See Gould Papers, B198/f9 outgoing correspondence, August 1980, Simpson. The present paper may be read as simply offering a comparison of two major contributors in one area of historical sciences who overlapped in time. A referee was concerned that the Gould-Simpson relationship is both a distraction and not causally relevant. However, consider that on July 26, 1980, Simpson interprets Gould as saying that Simpson's work has done more harm than good. He writes, "I do not think your work and Eldredge's could be a potentially useful contribution to the growing expanse of the synthetic theory of evolution. I also think that your way of expressing and promoting it and of attacking much basic prior work is doing more
Gould, he found the nature of their relationship distressing. Consequently, Cain gives a blistering account of Gould’s treatment of Simpson via ritual patricide through persistent attacks. However, Beatty engages in a more tempered analysis of Simpson’s influence on Gould and their respective aims concerning contingency (e.g., Simpson responding to proponents of directed variation and Gould to panselectionists).

A main theme of focus, then, concerns Gould’s use of Simpson’s philosophical and scientific ideas in so far as they relate to evolutionary processes specifically. That is why I aim to place Simpson and Gould in conversation under a different topic – one of both normative and historical interest that speaks to topics of science and values in philosophy, as well as to concerns of scientism and social Darwinism, which several disciplinary specialties still grapple with today.

Second, despite their differences detailed in the next two sections, both Simpson and Gould explicitly reflect on Thomas Huxley’s lecture on science’s spectacular heights and its lack of views. They align over worries about the dangers of scientism when it involves porting certain biological and evolutionary concepts to human social affairs. Let’s take a brief preview.

On the one hand, In Rocks of Ages Gould reflects on the separation of science and meaning. Near the end, he cites Huxley’s 1893 lecture who, according to Gould, “held, in his most famous essay …[that] because the rules of evolution violate all standards of human ethical conduct, the moral lesson of nature must be sought in learning her patterns and then behaving in a precisely contrary manner!” Drawing from Huxley’s view that we must act to “curb that cosmic process,” He contrasts Huxley with Darwin who instead argued that nature offers no moral instruction at all as stated in Darwin’s letters to Asa

harm than good” (b698/f2). I take the intrapolitics as a causally relevant factor in the framing of their technical disputes over the nature of modern synthetic work, which spawned a core tension between them at a critical juncture in the 1970s following the modern synthetic era.

11 Ibid., 195–196.
Gray. Gould draws a lesson concerning the sharp distinction between science and religion (or perhaps better ‘science and meaning’ as Gould identifies the Meaning Magisterium as a complex rather than unitary domain). If nature remains neutral, then we “cannot avoid the much harder, but ultimately liberating, task of looking into the heart of our distinctive selves.” Normative lessons for society, in other words, are not to be drawn from studies of nature.

On the other hand, drawing normative lessons from nature and scientific ideas is precisely what Simpson tried to do. Simpson in Meaning of Evolution describes his take on Huxley’s lecture. Huxley reflected on the “gladiatorial theory of existence” and struggle as features of the evolutionary process. He concluded, according to Simpson, that our problem “becomes not the forwarding of the evolutionary process but its thwarting ... evolution as a whole is ethically bad.” It remains unclear if in some small way Simpson agreed with Huxley’s view on the immorality of nature, but the final section of Simpson’s book is dedicated to searching for a naturalistic ethic. That naturalistic ethic was framed, as we’ll see, by diving into the domain of responsibility and collective actions of authoritarian and democratic societies. A departure in strategy from Gould indeed.

There is some evidence that Gould eventually rejected, or at least viewed as problematic, Simpson’s normative strategy embarked on in the final section of Meaning. By 1972 in outgoing correspondence, he advised someone to skip

12 Ibid.
13 Gould, Rocks of Ages, 204.
14 George G. Simpson, Meaning of Evolution: A Study of the History of Life and of its Significance for Man (New Haven: Yale University Press, 1952). Meaning was originally published 1949, however, the 1952 edition is consulted for the present paper. Simpson was heavily motivated by WWII, and especially his service therein. The positions in Meaning were not necessarily unique: other prominent east coast American writers, such as Vannevar Bush and Robert Oppenheimer, ruminated over science’s societal context articulating the responsibilities of scientists.
15 Ibid., 298–299.
16 There are two main aspects of Simpson and Gould’s historical overlap and influence on one another regarding their technical work: first, their exchanges on uniformitarianism exemplified by Simpson’s 1970 favorable (but still amended) take on Gould’s distinction between methodological and substantive uniformitarianism, and second concerns the period following Gould and Eldredge’s 1970 work on punctuated equilibria. The Gould-Simpson relationship appears to become lightly tense over Gould’s column on Teilhard, but takes a steep downturn leading up to and around 1980 concerning Gould’s characterization of synthetic theory and his unauthorized reprints of Simpson’s work (see George Gaylord Simpson Papers, Mss.Ms.Coll.31, 1918–1984, American Philosophical Society Library, Philadelphia, PA., Series I, Correspondence, box 24).
Simpson's section 3 on ethics. In 1983 he wrote in correspondence that science cannot render moral judgements, “that must be the task of the humanities, and of human thought and compassion in general.” While together that is not enough to demonstrate a full rejection of Simpson's work in that regard, Gould was well known for his concerns over safely drawing lessons about culture and society from evolution. The following two sections work to outline these differences that, I contend, exemplifies a shift in normative strategy. Let's start with Simpson on values.

3 Simpson on Values

Leading up to and during what Gould dubbed the “hardening” of the synthesis in the 1950s, Simpson continued to frame his work on evolution by value-laden consequences and questions. The following is something of a highlight reel; any one of which deserving a paper in its own right. Altogether, they add specificity to Simpson's overall strategy.

3.1 Existential Questions About Humanity

Simpson actively explored questions about our place in life's history as improbable. He targeted evolutionary fatalism as an anti-Darwinian position.

According to Simpson, fatalists did not accept Darwinism, namely, that the products of evolution are a series of accidents – “not accidents in the sense of things happening entirely at random ...[but instead] mechanically produced ... and not foreordained ...[fatalists] feel that the products of evolution were intended, in some metaphysical sense, and they replace accident by fate.” In a similar vein, later Simpson continues that humanity as an outcome [w]as certainly not the goal of evolution, which evidently has no goal. [Humanity] was not planned in an operation wholly planless. [Humanity]...
is not the ultimate in a single constant trend toward higher things, in a history of life with innumerable trends, none of them constant, and some toward the lower than the higher. Is [humanity’s] place in nature, then, that of a mere accident, without significance?23

In other words, pitching accidental occurrences against their meaning is a false dichotomy. To assume chance occurrences (e.g., the evolution of humanity) are insignificant is an assumption that fails to appreciate how a history of accidents organizationally led to the emergence of values as an evolutionary product.24

While exploring the meaning of existential questions for humanity, Simpson maintained that ‘finalistic’ and ‘teleological’ views had an unfortunate history in philosophy, which made them “totally unsuitable for modern biology.”25 The overall tone of that work sets some pretext not only for Gould’s work with Lewontin in 1979 and their critiques of adaptationism and determinism, but also for Gould’s Wonderful Life in 1989, a popular book peppered with statements objecting to any triviality presumed of a contingent past.26 Simpson was not only concerned with fatalism regarding humanity as an evolved outcome though. He believed the role of individual freedom could be threatened by the shaping effects of social integration. Non-biological (e.g., cultural) forms of evolution secured a liberating role for control and self-determination.

3.2 Reflections on Cultural Evolution

Simpson engaged in a Lamarckian riff on the prospect of cultural evolution. He posited that the conditions of cultural evolution must have been based on biological principles. Culture is itself an adaptation – an idea he attributes to Julian Huxley.27 However, the emergence of culture runs outside of the “reaction range” of its establishing evolutionary mechanism(s).28 In that sense, organic and societal evolution are different in kind, but can (and should be) compared and contrasted.29

23 Simpson, Meaning, 142, 143–144.
24 Ibid.
27 Simpson, Chapter 23, 534 in Roe and Simpson’s Behaviour and Evolution.
28 Ibid.
29 Simpson, Meaning, 289.
Here’s where the Lamarckian riff comes in: According to Simpson we have control over what becomes us: changes arising from habit may not be inherited in biological evolution, but the structure of society operates by “habitually interthinking groups.” Factors arise by habit, emotion, and subconsciousness with some constraints on how these are culturally passed on. The idea is that while we might be conscious of the social process’s materials, their range (of application) is limited in any point in time.

Therefore, cultural evolution is not only different in kind from biological evolution, but Lamarckian in significant ways. Cultural habits are acquired and passed on depending on local and material conditions. This too contains threads of self-determination: both the individual and society are not subject to inevitable ends, rather they remain in some control of the processes and products that befall them.

Simpson does not mention the term “culture” when he delves into the details of his naturalized ethic. He does discuss how the “new evolution” peculiar to humanity is distinctly Lamarckian operating by the inheritance of acquired characters as a segway to ethics. Because societal evolution is distinct in kind from organic evolution, they’re better thought of as analogous and not equivalent in structure and process. Presumably both culture and ethics are components of societal evolution for Simpson. He does specifically focus on what sort of ethical theory can follow from evolution in a way that prioritizes both individual freedom and responsibility. However, it’s not clear whether he thinks that ethics is a cultural phenomenon – something philosophers would condemn on the basis of relativism.

While understanding that attempts to naturalize ethics predates his Meaning book originally published in 1949, Simpson recounts how the search for an ethic intensified in the 1800s when it was “recognized” that evolution is a phenomenon of nature that must have ethical bearings. That work was premature since so little was understood about evolutionary processes at that time. Mischaracterizations of biological concepts caused a “tooth and claw” ethic to emerge based on the views that evolution was gladiatorial in nature. I save more detailed discussion of Simpson in this regard for section 5: A Common Lens, but for now it suffices to say that Simpson thought that the “tooth and claw” ethic was misguided; it was a mistake to view evolution’s whole course

30 Ibid., 141.
31 Ibid., 142.
32 Ibid.
33 Ibid., 288–289.
34 Simpson, Meaning, 297.
in terms of gladiatorial speciation only. “[L]iteral struggle is not the essence of natural selection, and natural selection itself is only one of many different factors in evolution.”35 For Simpson, (the process) of speciation was also misconstrued as a competitive struggle among organism groups. Simpson then chastises Herbert Spencer’s gladiatorial theory of evolution as producing a mere survival ethic where it becomes every organism for themself.

Perhaps of significant interest is how Simpson condemns directional trends in evolution as ethical guides to both conduct and future good. He says, “such a conclusion follows almost automatically from a finalist view of evolution, especially when this is put on a theistic or otherwise religious basis.”36 The finalist picture of ethics goes something like this: if evolution has a goal, and if it (i.e., life) has all been a progression toward that ultimate end, then furthering progress toward that goal would be considered ethically right, and even obligatory if the goal was set by God.37 Of course, Simpson is critical of the finalist conflating (1) trends where there is some attempt to derive ethics from increasing levels of organization with (2) “progressive complication and perfection of coordinated structure and function.”38 To him, conflating trends with progress was often used to support authoritarian ideology as ethically right, which may seem strange at first glance, but let’s dig in further.

3.3 Political Ramifications of Biological Concepts

Authoritarian ideologies determine the fates of individuals. That’s how fatalism, individuality, and authoritarianism all hang together, and the “super-organism” concept plays a nefarious role. Simpson expresses the limitations of the “super organism” metaphor (or what he called the “totalitarian organism-epiorganism” metaphor) when applied to human society.39 That metaphor included dangerous ideologies about putting the state before the individual. Simpson was especially worried: the super organism concept from biology extended to human society was brought under doctrines of evolutionary fatalism. Inevitable futures undermine individual freedom, autonomy, and responsibility, and of course then undermine the basis of democratic societies.40

A species prospers, according to Simpson, only to the extent that individuals attain satisfaction, which is the opposite of the view that the greatest thing individuals “do for a species is to die, for death is the antithesis of individual

---

35 Ibid., 299.
36 Ibid., 304.
37 Ibid.
38 Simpson, Meaning, 305.
40 Ibid., 20.
satisfaction.” Resisting a gloomy definition of individuals, he rejected the notion that selection was only elimination by a pruning process: pruning would keep the individual’s role as “stellar but tragic” making its essential part in evolution to die. Instead, survival of the fittest – something Simpson recast in anthropocentric terms – brought a positive role to the individual as seeking to ease needs by finding fulfillment. In other words, what matters is not the failures, but small victories that add up over time.

Nyhart and Lidgard contributed a significant treatment of Simpson’s 1941 paper where the politics driving his valued analysis of individuality in evolution are perhaps clearest than anywhere else. I cannot hope to repeat what they’ve done here, but only add notes of agreement.

Simpson, in his 1941 paper “The role of the individual in evolution,” compares passages that discuss an individual/organ metaphor for social groups. These passages drew analogies between (1) social groups and individuals with (2) individuals and their organ parts, which both converge on totalitarian ideologies:

Both [i.e. social group/individual and individual/organ parts] imply the proposition that the welfare of the higher organism ... is of paramount importance in evolution and that the individual is to be viewed primarily as a subordinate unit ... the question arises whether these conclusions are also sound biology, and in the world today consideration of the role of the individual in evolution can have no greater human value than by answering this question.

He bemoans first the entomologists who believe that social insects are fated to behave for the good of the group and not for individual satisfaction, and second the sociologists who maintain the sacrifice of individual satisfaction as the “highest human trait and the only hope for human progress.”

One inherent feature of fatalism is that the individual does not matter in evolution’s direction succumbing to a destiny that the individual itself does not own. Simpson fiercely rejected that view. Rather, an individual is a “pawn of fate” only to the extent that their inheritance and environment is part of

---

41 Ibid., 4.
42 Ibid., 3.
their own making – the other part “come[s] to [the individual] as a result of past causes, not as a presage of future destiny.”

The biologist is face to face with the totalitarian ideal, then, when an individual's future destiny is integration within society as a super organism.

The danger of the super organism concept as an ideal for society assumes that society should,

Evolve in the direction of greater integration (i.e., less individual freedom and responsibility), and that its units (i.e., you and I) should become more specialized (with less scope for activity and change), more interdependent (less self-reliant), and more a part of the whole state (less individual).

Simpson attempts to unpack different senses of totalitarianism but expresses this as a general view that threatens the demise of democracy. He exclaims that the biologist who elevates the super organism metaphor into a standard for social interpretation is “of the most reckless, unjustified, and nonscientific extrapolation.” For Simpson, social progress is through further individualization and satisfaction in that regard. He feared that extending the biological epiorganism concept to society was more confusing than enlightening.

Consider the following.

Simpson reflects on presenting that 1941 paper at a conference preceding World War II. He tried to emphasize that the organismic theory of society was invalid, and that biology and evolution don't support totalitarian ideologies. He identifies the audience's response as forming two false alternatives: those interested in organic evolution thought that his focus on individuals meant he was rejecting populations as significant. And those interested in social evolution thought that he was advocating for a rugged individualism or laissez faire capitalism. He supported neither interpretation.

While Simpson's political position rumbles loud, lest we forget that politics is not only macro-sociology, but infused within disciplinary communities. To that end Simpson's warning is clear. He was concerned that the biological sciences

46  Ibid., 8.
47  Ibid., 16.
48  Ibid.
49  Ibid., 18.
50  Simpson could be seen as expressing concerns about metaphors. See A. Currie “Of Records & Ruin: Metaphors About the Deep Past” (this issue) on metaphors as tools for understanding, which shape scientific research.
51  Simpson, Meaning, 317.
were being used – like the physical sciences in aiding war and destruction – to provide the more “insidious and still more menacing moral implementation of totalitarianism.”

If this use of biology is wrong scientifically, and if free (i.e., non-totalitarian biologists) support or permit it tacitly, he believed the biologists deserve an accusation stronger than the physical sciences as they will be contributing to their own destruction. Simpson’s warning touches on the risks of disciplinary knowledge transfer, particularly between biology and sociology, but also science and meaning. He says,

The transfer of knowledge and of judgement from one field to another is notoriously difficult, and one need not look far to [scientists] eminent in one field who have made themselves ridiculous by posing as oracles in another. The biologist as sociologist, still more as political prophet or propagandist, runs a similar risk, but we are all necessarily concerned with social evolution.

Why Gould did not quote this scathing anticipation of E.O. Wilson’s 1975 book *Sociobiology* strikes a bit odd, though he was to my understanding aware of this paper.

Simpson, in his own 1978 autobiography *Concession to the Improbable*, did not explicitly reflect on the very public clash between Wilson and Gould either despite ruminating over the value contexts of his own work, which strikes as equally odd given the quote above. Clearly, Simpson must have viewed his own work as respecting the bounds of science and not engaging in an overreach of his own expertise, for reasons I summarize at the end of this section. However, one might ask to what extent Simpson crosses into a program of evolutionary ethics and society. His positive program (to my eyes) doesn’t read as oracle-posing though, so much as a cautious and intentional unpacking of consequences. He often admits of his own limitations bookending his work on values as “taking a crack at it”, for better or for worse. I take his statement that everyone cares about social evolution to be intentionally ambiguous. It was

---

52 Simpson, “Individual in Evolution,” 15. Simpson often critically reflected on the social responsibilities and guilt associated with destructive products of physics and biology. In *Biology and Man* (1969, 129) he says while considering humanity’s inertia and state of being too ill-informed concerning gene editing, “I sometimes wonder whether this is the biologist’s hopeful equivalent of the atomic bomb and a chance to share guilt feelings with the physicists.”


not only about the content of cultural evolution, but also the progress of society attained through furthering individual (biological) satisfaction and breaking free from social control.

3.4 Synthesizing Evolution & Behavior

After sifting through our highlight reel above, how can Simpson’s concerns about the politics of biology be reconciled with his view that a synthesis between behavior and evolution is desirable? Simpson, along with his academic partner and spouse Ann Roe, published an anthology on behavior and evolution in 1958 writing the introduction together. They viewed the synthesis of behavior and evolution as a desirable way to unify a plurality of theories of behavior. Roe and Simpson described the book as “exploratory curiosity”: and how evolutionary interpretation, as it had for morphology, hinges on the following three concepts:55

1. homology or resemblances due to inheritance
2. homoplasy or convergent resemblances without inheritance, and
3. analogy or a functional equivalence but not necessarily 1 or 2

He later resituates those concepts to units of behavior in cultural evolution, and even goes so far as to imply that biology and culture represent a superficial dichotomy when he says they can be added to the “old list of dualities”: stability/change, unity/diversity, and instinct/learning.

It does not seem like Simpson thought his work on behavior and evolution was in tension with his concerns about social control. Perhaps how evolutionary psychology is understood today provides a different shade to Simpson’s active role in that anthology. And as a historian once said to me, one ought not always try to reconcile the inconsistencies that arise over the trajectory of someone’s life – people are messy and it is sometimes more interesting to sit with the tension. However, in Simpson’s particular case it’s imperative to understand how he thought evolution worked through his concerns about fatalist deprivations of individual agency, the role of accidents and chance that undermine destined trajectories, and the priority of individual freedom and responsibility. While evolutionary psychology and sociobiology are now riddled with assumptions about biological determinism and progress via integration and loss of autonomy, Simpson would not have endorsed that kind of synthesis between evolution and behavior. In his view, those evolutionary concepts would have distorted and wrongly reduced social evolution to misunderstood mechanics of the biological processes from which it emerged.

In summary, and reflecting on his life’s work in his autobiography published just six years before his death, Simpson poses two questions, among others, that he views as the most basic problems of science and philosophy: What is the nature of the human species? And what of ethics and gods? He did not claim to “get things right” in that regard. Simpson proudly took his work to have honorably entered the arena on these matters. He did not view his work to have overstepped disciplinary expertise, rather there is a sense of obligation read in those words. Simpson put his chips on the table and worked to untangle distortions while producing a positive value-oriented program as a working scientist. Presumably, he felt a responsibility to communicate the questions and consequences of meaning and evolution both as cautionary tales and in following the footsteps of admired naturalists before him.

Taken all together, Simpson actively and intentionally developed normative views, which contextualized his work against social values. He raised existential questions about humanity’s place in life’s history as improbable, took a gamble on cultural evolution as Lamarckian and its processes as qualitatively unique in kind, discussed the social impact of individuality and (political) organization, and explored a potential synthesis between behavior and evolution tethered to his views of cultural and social evolution. He was highly critical of evolution’s wrongful and ill-advised caricatures yet followed through with a positive program contextualizing evolution in terms of its meaning. This was not unlike the naturalists who preceded him nor his contemporaries at the time. Scientists reflecting on the social contexts of their work is not the surprising element, however, it is the systematic and pervasive way in which Simpson flanked his work by developing ruminations on society that roughly distinguishes him from how Gould viewed the scientist’s role in relation to meaning.

4 Gould’s Departure

As mentioned in the introduction, Gould was well known for his concerns over safely drawing lessons about culture and society from evolution. However, his view on the normative consequences of evolution, and of science more generally, develops through a fascinating trajectory. For the philosophers, Gould landed in an argument for his own version of the value-free ideal from a scientist’s perspective – but not in the way philosophers might normally expect the

---

56 Simpson, Concession to the Improbable, 274.
argument from a scientist to go. In what follows, I discuss how Gould worked to keep science within its proper bounds.

4.1 Seeking Meaning and Abandoning the Search

Early on, in the mid to late 1960s, there is archival evidence that Gould was mining for some way to connect evolution and ethics through university and perhaps into his early career. Gould was very interested in the connection between biology and values early on: He wrote a university paper on it, kept his first spouse’s paper on it, and he corresponded about it. Notably, he also identified Simpson as his biggest hero (who looked also to be at least an acquaintance of Gould’s father’s). As just discussed, Simpson prolifically wrote on the social-value implications of his work.

Sometime though, perhaps in the early 1970s, Gould abandoned the search seeming to think it was impossible and, as previously mentioned, even advising others to avoid those parts of Simpson’s Meaning book.

Gould, unlike Simpson, distanced himself from drawing normative consequences about his own work and publicly denounced attempts to do so. I take Gould’s approach to be primarily critical and deconstructive in a very postmodern sense: Gould interrogated the methodological and conceptual

---

57 A referee points out that the value-free ideal literature in philosophy often focuses on legitimate/illegitimate distinctions (e.g., K.C. Elliott, & D. Steel, Current Controversies in Values and Science, 1st Ed., New York: Routledge, 2017) about the role and influences of values in science – keeping science itself value-free – yet rarely engages with science’s legitimate/illegitimate role as interlocutor with or authority over other disciplines as is characterized in the present paper (with exception of R. Chapman & A. Wylie, Evidential Reasoning in Archeology (London: Bloomsbury, 2016) on archeology as a trading zone).

frameworks of his interlocutors not only to expose and dismantle dichotomous thinking, but also to historically trace the general structure of methods and arguments with the aim of de-legitimizing them as grounds for analysis. One of the most comprehensive examples of Gould adopting this approach happens to be his controversial book *Mismeasure of Man* originally published in 1981, but with a new introduction and revisions published in 1996 just six years before his untimely death.\(^{59}\) I contend that book provides insight into how his concerns for biological determinism drove his abandonment of a positive program connecting biology and society.

During the mid to late 1970s onward, Gould identified and doubled down on his worry that emphasizing the biological basis of socially charged issues like behavior, culture, psychology, etc. were fraught with assumptions about biological determinism. How does biological determinism square with abandoning the search for a connection between science and values? (Or specifically for Gould, between biology and ethics?).

Biological determinism is a world view: a suite of bad argumentations applied not only to macro-level processes at a paleontological scale within science, but also to social phenomena outside of the biological sciences, which included, among other things, the desire to reduce or explain “partly random, large-scale, and irreducibly complex phenomena by deterministic behavior of smallest constituent parts.”\(^{60}\) Alternatively, the concern for a biologically-determined social sphere was particularly pressing for Gould in two different ways. First, within the biological sciences he thought the stance was woefully misguided; a vestige of the nature/nurture dichotomy that often overemphasizes the role of genetics in biological explanations.\(^{61}\) Second, concerning social organization, he argued that assumptions about biological determinism were dangerous because of their implicit justification of discriminatory practices and the ease with which they could be weaponized for social oppression.


\(^{60}\) For Gould biological determinism committed four errors he identified in the new introduction to *Mismeasure* in 1996, 27: reductionism as just defined, reification or the conversion of abstract entities (like intelligence) into hard quantifiable entities (like brains), dichotomization or the tendency to polarize complex issues into either/or, and hierarchy or the tendency to organize items by ranking in linear series or grades of increasing worth.

\(^{61}\) Gould maintains a more tempered view on the value of genetics than one might first assume. He says that indeed the greatest hope for cures of our most ailing diseases involves identifying material substrates on which to intervene, but the mistakes in reasoning beyond this motivation are plenty. See *Mismeasure*, 32–33.
Mismeasure centers around a lengthy critique of biological determinism in a particular case concerning IQ as unitary, linearly scaled, and genetically sourced in a way that would be minimally alterable. Gould interrogated both the methods (i.e., multivariate factor analysis) and the supporting data used by proponents engaged in quantitative scaling of IQ. This was because of the dire social consequences he anticipated: not only the scaling of mental worth, but also the retraction of social programs and spending on the grounds that we cannot change what is determined in biology. The new 1996 introduction is of special interest here: Gould viewed biological determinism as a recycled, exploited casing of fallacious tendencies, which recurred alongside episodes of political re-entrenchment and the rejection of social justice programs meant to address equity issues in our institutions. He says,

What argument against social change could be more chillingly effective than the claim that established orders, with some groups on top and others at the bottom, exist as an accurate reflection of the innate and unchangeable intellectual capacities of people so ranked?...(The groups so stigmatized may be races, classes, sexes, behavioral propensities, religions, or national origins. Biological determinism is a general theory ...)

In other words, Gould aimed to dilute the potency of biological determinism used as a social weapon by some to validate the socioeconomic status of others as a “scientific consequence of their innate ineptitude rather than society’s unfair choices.” And so, he was not only concerned about biological concepts being mischaracterized and misappropriated in the social arena, but he also worked to argue against illegitimate overreaches of scientific expertise. Mismeasure of Man serves as a prime example of Gould condemning irresponsible forays into the social contexts of science, forays through the inappropriate

---

62 Gould aligns himself with Alfred Binet, the French inventor of the IQ test to help identify children in need of special help, who warned against innatist interpretations that would stigmatize children as unteachable (see Mismeasure, 29–31). He recognizes two political episodes of biological determinism concerning IQ: one that inspired him to write the first book (i.e., the claims about innateness of group differences concerning IQ with emphasis on racial disparity embedded in the social activism and conservative reactions) and the second prompting the revised version was the publication of The Bell Curve and its social/political impact underlying rationale for “affirming social inequalities as dictates of biology.”

63 Gould, Mismeasure, 28.

64 Ibid., 27.
stretching of scientific methods and concepts in social contexts. However, the book also provides a window into why the archives (in my dedicated, but not long enough time in there) suggests an abrupt shift in strategy: Gould said in that new introduction that he had started writing *Mismeasure* in the mid 1970s, but it is *why* that is of special interest.

In his early 1970s work he operated within a generation of paleontologists interested in statistics and computers – both linked by the technique of multivariate factor analysis, in which he was heavily trained. He applied factor analysis in his empirical work on snails and reptiles, but states that there are very few moments in a scholar’s life like the one he experienced upon realizing that the technique had not been developed to analyze fossils or pursue mathematics. Rather, it was invented to push a certain theory about mental tests associated with biodeterminist implications: factor analysis, according to Gould, had been invented *for a social use contrary to his beliefs and values*. He identifies *Mismeasure* as ultimately arising from that feeling of violation some ten years later, which of course squares with when the active search for biology and ethics fizzled out in the archive materials circa early to mid 1970s.

If Gould’s normative program as a departure from that of Simpson’s is not yet obvious to the reader, I’ll say this: Gould took a primarily critical and gatekeeping approach to hold science within its proper bounds. It is no less charged with values, but takes a different strategic (dare I say, postmodern) tone compared to that of Simpson perhaps reaching its peak in one of Gould’s final books. I take that kind of critical engagement as aiming on a *disciplinary* scale to keep science at bay.

---

65 S. Harding, “Rethinking Standpoint Epistemology: What is “Strong Objectivity?”” *The Centennial Review*, 36(3) (1992), 465, characterizes *Mismeasure* as not just about the sins of individuals, but an issue concerning the unwillingness and impotence of scientific institutions to police their own practices.

66 A referee points out that the American political landscape concerning Reagan-era conservative attacks on the National Science Foundation and “liberal bias” (or at least anti-conservative bias) is a key backdrop to Gould’s views. He was a student of Vietnam-era politics and early environmentalism both abhorred by resurging right wing American politicians. There was a lot at stake in neutralizing science after Gould’s first edition of *Mismeasure* published in 1980 compared to the early 1970s when science’s political engagement has a different focus.

67 Gould, *Mismeasure*, 42–43. The generation of paleontologists he is referring are represented by those in his MBL working group, e.g., Raup, Schopf, Simberloff, and Sepkoski. However, while MBL has an important place in the history of computerized paleontology, the vogue for multivariate/biometric work in paleontology is older than the paleobiological revolution associated with the MBL project. Thanks to Max Dresow for this insight.

4.2 **Science within Its Proper Bounds**

Three years after the revised edition of *Mismeasure*, Gould published *Rocks of Ages* in 1999. Because of Gould’s very public role in McLean v. Arkansas Board of Education 1981, the messages and context drawn from that book were (and probably still are) overlooked and primarily taken to be focused on the illegitimate encroachment of religion on science, and the independence of scientific inquiry. Indeed, that theme in the book is strong, but it should not eclipse an equally forceful view Gould held about the danger of scientists stepping outside of their domain’s expertise. Nor should philosophers interested in evolution and values simply write off the book as a poor rendition of Hume’s is/ought guillotine concerning facts/values and descriptions/normative judgments. On the contrary, there is an explicit treatment of disciplinary roles in the production of knowledge with an acute inditement of anyone who strays from their own lane (meaning not only those who he thought just strayed wrongly – Simpson ‘strayed’ but criticized those who he thought strayed wrongly).

As two utterly different realms, science ought – as a matter of intellectual and moral grounds – be separated from anything normative (e.g., religion, but also ethics and values: “morals and meaning”) in the sense that one cannot serve as evidence for the other.⁶⁹ To read that statement thinking that Gould is a representative of the value-free ideal in the customary philosophical sense concerning values in inquiry and confirmation would be a mistake though. As we’ll see, his distinctive focus concerns social abuses rather than the usual defense of sterilized objectivity that might be expected from someone working in science.⁷⁰

It’s understandable that the reception of the book centers around the overreach of creationists – who Gould views as religious imposters engaging in disservice to religion. As he states, he wasn’t trying to prove evolution in his testimony, but engaging in a political battle that was not exemplary of the serious intellectual discourse that would respect both the equal status and independence of both domains. What set up the political conditions for the 1981 trial is of special interest though, namely, an overreach of science into the social domain. Gould tells a story about this, which is important.

One thread of biological determinism manifests as a bid for evolution to validate certain social behaviors. Those sorts of moves from evolutionary facts to social morality are exactly what’s at stake in the following. Vernon Kellogg, an American entomologist, and evolutionist, went to Belgium during WWI in

---

⁷⁰ In that sense it would be a mistake to assume that Gould was naïve about the “neutrality” of science. NOMA was a task maker meant to delegate across expertise.
a humanitarian capacity when the U.S. maintained neutrality. He was posted at the headquarters of German General Staff, many of whom had been teachers of evolution, and he listened each night to those high-ranking German officials justifying the war for German supremacy with an evolutionary rationale about domination by force and struggle for existence Kellogg returned acutely distressed about this brand of social Darwinism: many of those German officials had been university professors advocating for concepts they deemed as hallmarks of Darwinian theory applied in a social way – to argue for victory by violent mortal combat. Gould casts Kellogg’s experience with the German army as witnessing a severe misuse of science, along with a mischaracterization of Darwin’s insights, to present (moral) opinions about social order as if they represented facts of nature. The twist is how such a misguided and dire overreach of science into the social domain set up the conditions for the creation-science controversy of the 1980s.

William Jennings Bryan – the 1920s politician who banned the teaching of evolution in the U.S. – did so partly based on the experiences Kellogg had with the German militarists. Evolution was banned because Darwinism was framed as a defense of war, domination, and exploitation. That ban was of course overturned in 1968 under the “equal time for equal ideas” clause, a clause that was then used by the creationists in 1981 to count as a scientific activity alongside the teaching of evolution in schools. Tracing that narrative from the 1981 trial back to the World Wars exposes the most egregious form of science extending beyond its proper bounds: using evolutionary facts (and their mischaracterizations) to determine moral social order. That was biological determinism in one of its most insidious varieties. So, while creationists violated Gould’s principled separation of science and values, some scientists – the German officials in Kellogg’s story – were guilty of the same offense in reverse. Insulating science from misguided (and obviously deplorable) applications to social policy is a message underlying NOMA – that science and meaning are Non-Overlapping Magisteria – which immediately aligns with Gould’s gatekeeping approach.

72 Ibid.  
73 Ibid., 160ff.  
74 Ibid., 165.  
75 Ibid., 169.  
76 What if this had not happened? For a defense of counterfactual histories see Helen Zhao’s “Counterfactual History: Three Worries and Replies” (this issue).  
Whatever the value-free ideal was, and the turn away from it following Kuhn and philosophical work on the social contexts of science and values in the 1990s, there are two threads I take to be non-controversial: (1) a full-scale rejection that scientific reasoning happens in isolation from values, and (2) that values can even be good for science, rather than contaminations of reasoning and rational practices. In contrast, Gould takes something of a nuanced stance both concerning the boundaries of expertise and what he takes to be the necessary independence of the value domain. The NOMA principle is the peak of Gould’s value-free ideal that is not only about how morals and politics cannot dictate scientific results. Rather, his image of biology as remaining value free in that regard has nothing to do with preserving objectivity. It is about protecting social values and policy from abuses of science.  

Notably, the veil of “ice-cold impartiality” as a proper mode of objectivity Gould took to be one of the most harmful claims of his profession, as if it were possible for any scholar to attain complete neutrality, which is why he puts his cards on the table noting campaigns for social justice and activism as motivating his critiques. Instead, he thought the best form of objectivity was identifying influences, preferences, and conflicts of interest and pursing the work that has the deepest personal meaning for us. He even says that his father lived long enough to read the galley proofs of Mismeasure knowing “that his scholar son had not forgotten his roots.” It’s not that Gould’s departure was devoid of normative ideals. Far from it. Rather, his strategy was primarily critical both in Mismeasure and Rocks of Ages working to keep abuses of science at bay during the aftermath of the post-war era.

---

Concerning science and policy, Gould thought that if scientific claims carry potential to harm at risk groups, then it is a scientific duty to debunk any bad science that could have led to them. That said, he once argued that values, like aesthetic judgement, play a key, and sometimes fruitful, role in science in “In the Mind of the Beholder” published in the 1995 collection Dinosaur in a Haystack. Values in science are complicated for Gould – his view could be interpreted as a version of the “track-forward” (e.g., see D. Steel, “Qualified Epistemic Priority: Comparing Two Approaches to Values in Science,” in Elliott and Steel, Current Controversies, 53) method such that transparency about values allows for the opportunity to “un-do” the effects of non-epistemic values.  

Gould, Mismeasure, 36.

Ibid.

Ibid., 39.
A Common Lens

While Simpson actively and intentionally developed a positive program developing the social consequences and contexts of his scientific work, Gould’s strategy was primarily a critical policing of boundaries and deconstructing of what he viewed as overreaches of expertise. I contend that shift exemplifies an important change in evaluative frameworks, one which is imperative for mapping the treacherous terrain between the biological sciences and their social contexts.  

Despite their strategic differences (i.e., the positive versus critical programs discussed), the common lens Gould and Simpson share becomes clear when we consider T.H. Huxley’s concerns: Both Gould and Simpson lean on Huxley’s engagement with biology and values (i.e., the “Evolution and Ethics” 1893 lecture) as a touchstone for their own views on the matter.

On the one hand Simpson, when criticizing the gladiatorial theory of existence taken up by many of Darwin’s followers interpreting evolution mostly (and falsely) in terms of struggle, rejects its social application as a “tooth-and-claw” ethics. The misconstrued emphasis on struggle in its social application “cast a shadow over the whole effort to find a naturalistic ethic and should certainly make us extremely cautious in our continuance of that search.”

Evolution as gladiatorial meant that nature was immoral in Huxley’s eyes: society must work to counteract nature’s struggle condemning aggressors in warfare, dominance, and exploitation as moral failings. Simpson recognizes Huxley’s mistakes as symptomatic of what he called the “unreal dilemma”: (1) the disbelief that unbounded warfare, exploitation, and such things could be ethically right versus (2) the assumption these things were integral components of the evolutionary process, and that nature must have ethical bearings.

On the other hand, Gould too cites Huxley’s 1893 Romanes lecture while driving home his value-free image of the biological sciences. Invoking Darwin, Gould argues that nature is amoral, not immoral: we must reject Huxley’s view that the moral lesson from nature is to behave in the exact opposite, which for Huxley made sense if the rules of evolution violated ethical standards.

---

82 Another lens to consider Gould and Simpson’s work is TJ Perkins work on cultural readiness in “Culture’s Impact on The Historical Sciences” (this issue), especially concerning Gould and Simpson’s management of science’s image across disciplines and with the public.
83 Simpson, Meaning, 298–299.
84 Ibid., 297.
85 Gould, Rocks of Ages, 195.
argued that nature exists without reference to morality – a distinctly human concept belonging in a domain of inquiry separate from science.

So, why do both Simpson and Gould cite that Huxley lecture when they both thought he was swept up in the intellectual hype of his day?

Arguably, Huxley’s lecture should be read as in direct response to the Spencerian social Darwinism as an ethic of human progress. Perhaps that’s why Huxley prefaced his Romanes Lecture by arguing that the ‘evolution of society’ is a process vastly different character. He draws from Adam Smith's views on sympathy claiming that whatever social progress was, it was marked by sympathy or having a conscience – what we might refer to today as ‘empathy’. This coupled with self-assertion in the freedom to be who we are together marked social organization sharply apart from predetermined eusocial fates. However, there is a broader context to consider.

Arguably, and when reading that lecture against the rise of eugenics, Huxley was worried about exactly what Simpson and Gould strategically kept in the spotlight: Misunderstandings of biology were not alone responsible for controversies over their social application. Specifically, wrongful caricatures of biology, sometimes employed by scientists themselves, were inherently dangerous to society. I take Huxley’s lecture on the immorality of nature as a response to the Spencerian (and Galton) style engagement with biology and society, as well as an anticipation of the dire consequences of eugenics in the early 20th century world wars. The point being that all three – Huxley, Simpson, and Gould – took as their mission to keep biology within its proper bounds for good reason.

In the 19th and 20th centuries some applications of biology to society had disturbing consequences: it is no secret that authoritarian regimes adopted, for example, eugenics to justify atrocities, and that democratic governments institutionalized assumptions about biological normalcy and perfection as

86 J. Huxley and T.H. Huxley, Touchstone for Ethics (The University of Michigan, 1947), 60.
88 Huxley and Huxley, Touchstone, 55. Indeed, his grandson Julian Huxley may have taken the idea of a “scientific administrator” of human progress far out of context: I take T.H. Huxley to distinguish between two modes of selection: a “cosmic” process driven by struggle for existence and selection directed towards an “ideal”. The latter metaphorically explained as a gardener pruning away by systemic exclusion towards a singular character (ibid., 51). This made me pause, but he later follows that human society is incapable of furnishing such an administrator, and that such a role cannot play any part in the evolution of human society (ibid., 61).
89 F. Galton, Inquiries into Human Faculty and its Development (Macmillan, 1883).
prejudiced social weapons against marginalized populations in cases of racism, abilism, and the like.90

Huxley’s lecture as an orientating lens facilitates Gould and Simpson’s conversation, a conversation with lessons that matter for how biology is contextualized in society today. How we represent and characterize evolutionary history through metaphors and iconography often stem from ideological positioning, which can shape the way we think about the biological world.

Taking Huxley, Simpson, and Gould together traces an historical line of anticipatory concern, warning, and reflection on the loss of individual autonomy through scientific management of social matters surrounding the human experience of (and scientific control over) birth, life, and death. While Huxley warned of relying on nature for answers to questions of social meaning, Simpson unpacked a positive program about questions and consequences that followed from studying nature in contrast to what he thought were poor or dangerous programs, and Gould critically debunked work perceived as potentially violating grim historical lessons about biology and society.

I cannot help but frame such common ground in Deweyian fashion: Not only are nature’s facts sometimes misinterpreted or mischaracterized, but also “many people seem to suppose that facts carry meaning along with themselves on their face. Accumulate enough of them and their interpretation stares at you.”91 Dewey’s reply to Huxley’s lecture warns that the accelerated growth of science has created a peculiarly unstable environment.92 Though of course the later charge was that those who study social contexts of meaning had best keep up or peril surely awaits.93 Thus, our common lens consists in valiant efforts to

90 Classical eugenics is typically thought of as administered by state agents; however, some argue that such social pressures still exist and that activities like genetic counseling are not neutral. Social preferences are shaped by ideologies concerning human differences that are pervasive in our culture (see O. Obasogie, “Conversation about the history of current legacies of eugenics,” Lecture, May 7, 2021, Stanford University). Obasogie argued that the recent history of eugenics post WWII is more complicated than is realized and advises critically thinking about science and medicine’s use to create preferential people because of social ideology about race, class, disability, etc.


92 J. Dewey, “Evolution and Ethics,” The Monist 8 (1898), 340. Also see Teehan, “Evolution and Ethics,” 229 for the Dewey-Huxley exchange. Teehan points out that while Dewey agreed with Huxley’s critique of the Spencerian theory of evolution and morality, Dewey thought Huxley’s view that nature was at odds with the ethical was a false dichotomy of humanity and nature.

protect society from the sometimes misconstrued and illegitimate overreaches of the biological sciences.

6 Conclusion

In closing, while we must contextualize biology in its social and value-laden settings, the loosening of those boundaries in a disciplinary sense harkens back to an all-too-familiar concern that science does not answer, and should not be asked, questions about what we should do and how we should live. But as Weber says, “there will never be a place where scientists wielding these methods and principles or others, can stop, secure in the conviction that they have not crossed the line into politics, and pass the baton of collective decision-making to others … they come into the controversy already entangled.”

In a similar sense, we might consider Huxley, Gould, and Simpson to be actively reflecting on and working to keep biology within its proper bounds, as naturalists. This speaks to some of the rhetoric around how science and values are considered in philosophy regarding where the responsibility lies – is it with scientists? The publics/communities? What about with philosophers? Of course, what the boundaries of responsibility were, are, and will be is a disciplinary question of our time: there is much philosophical work to do on science and values, and in particular on values in relation to biology. This research context provides a much-needed intellectual backdrop for questions of meaning and evolution, as well as the uses (and abuses) of scientific method and theory in perpetuating social injustices.

One question left unanswered for future work is whether Simpson and Gould roughly exemplify modern and extended (or developing) synthesis work, respectively. If so, then the shift in normative tendencies arguably tracks a shift in thinking about values, ethics, and society in relation to biology after the heyday of the modern synthesis. Their tense relationship in the late 1970s and early 1980s circles around Gould’s characterization of his own technical work in contrast to modern synthetic work around the publication of “Is a new and general theory of evolution emerging” in *Paleobiology*. Speculatively, putting Simpson and Gould into conversation on meaning and life’s history

---


matters in a wider sense if we consider them as representatives on either side of a critical juncture following the modern synthesis era.96

Certainly, Gould and Simpson exhibit a normative departure illustrated through strategic differences in how to approach values, ethics, and society in relation to biology. Despite that departure, however, their motivations converge within a larger program. That program includes Thomas Huxley’s concerns about the dangers of science overstepping its bounds of expertise into the realm of meaning, as well as the risks of social Darwinism and Neo-Darwinist concepts that not only misconstrue Darwin’s work but also its scope of applicability. Simpson and Gould intellectually share much in common like contextualizing the place of humanity in relation to geological timescales, thinking about the vastness of deep time, and the role of improbability and lack of directionality towards humanity in the history of life. Their different normative strategies cohere under a common lens, a lens which represents ongoing conversations of resistance and social protection in the history of meaning and evolution.

Acknowledgements

Many thanks to Roberta Millstein, Celso Neto, and Max Dresow for comments on previous drafts, to audiences at ISHPSSB 2021 and Connecticut College’s Philosophy Department for questions and challenges to prior versions, to multiple students from my classes on scientific controversies, to J.P. Daly, Jessica Riskin, and others in the history group at Stanford, to the archivists at Stanford’s Special Collections, and to two referees, ‘the philosopher’ and ‘the historian,’ for insightful comments and critiques. Open Access funding for this article was provided by UMass Lowell Provost’s Office.

96 Simpson and Gould’s representative roles might be understood as embodying different ways of being public intellectuals concerning evolutionary biology post WWII/early cold war and Vietnam/later cold war periods, respectively. There is work concerning Gould’s public role in the rise of the new left according to M. Perez, “Evolutionary activism: Stephen Jay Gould, the New Left and sociobiology,” *Endeavour* 37(2) (2013): 104–111, as well as N. Jumonville, “The Cultural Politics of the Sociobiology Debate,” *Journal of the History of Biology* 35 (2002), 569–593.