

The Moral Grammar of Narratives in History of Biology—the Case of Haeckel and Nazi Biology¹

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Introduction: Scientific History

In his inaugural lecture at Cambridge as Regius Professor of Modern History in 1895, Lord John Acton urged that the historian deliver moral judgments on the figures of his research. Acton declaimed:

I exhort you never to debase the moral currency or to lower the standard of rectitude, but to try others by the final maxim that governs your own lives and to suffer no man and no cause to escape the undying penalty which history has the power to inflict on wrong.²

In 1902, the year after Acton died, the president of the American Historical association, Henry Lea, in dubious celebration of his British colleague, responded to the exordium with a contrary claim about the historian's obligation, namely objectively to render the facts of history without subjective moralizing. Referring to Acton's lecture, Lea declared:

I must confess that to me all this seems to be based on false premises and to lead to unfortunate conclusions as to the objects and purposes of history, however much it may serve to give point and piquancy to a narrative, to stimulate the interests of the causal reader by heightening lights and deepening shadows, and to subserve the purpose of propagating the opinions of the writer.³

¹ This essay is based on the Ryerson Lecture, which I delivered at the University of Chicago on April 12, 2005.

² John Acton, "On the Study of History," *Lectures on Modern History* (London: MacMillan and Co., 1906), pp. 5-26; quotation from p. 23.

³ Henry Lea, "Ethical Values in History," *American Historical Review* 9 (1904): 233-46; quotation from p. 234.

As Peter Novick has detailed in his account of the American historical profession, by the turn of the century historians in the United States had begun their quest for scientific status, which for most seemed to preclude the leakage of moral opinion into the objective recovery of the past—at least in an overt way. Novick also catalogues the stumbling failures of this noble dream, when political partisanship and rampant nationalism sullied the ideal.⁴

Historians in our own time continue to be wary of rendering explicit moral pronouncements, thinking it a derogation of their obligations. On occasion, some historians have been moved to embrace the opposite attitude, especially when considering the horrendous events of the twentieth century—the holocaust, for instance. It would seem inhumane to describe such events in morally neutral terms. Yet even about events of this kind, most historians assume that any moral judgments ought to be delivered as obiter dicta, not really part of the objective account of these events. Lea thought a clean depiction of despicable individuals and actions would naturally provoke readers into making their own moral judgments about the past, without the historian coercing their opinions.

This attitude of studied neutrality has become codified in the commandments handed down by the National Center for History in the Schools, whose committee has recently proclaimed: “Teachers should not use historical events to hammer home their own favorite moral lesson.”⁵ Presumably this goes as well for the historian teacher, whose texts the students study. And one might suppose that when the narrative describes episodes in the history of science occasion for intrusive moral assessment would be quite limited.

⁴See Peter Novick, *that Noble Dream: The “Objectivity Question” and the American Historical Profession* (Cambridge: Cambridge University Press, 1988).

⁵National Standards for History in the Schools (UCLA), Standard 5: Historical Issues. See: <http://nchs.ucla.edu/standards/thinking5-12-5.html>.

I believe that these demands that historians disavow moral assessment neglect a crucial aspect of the writing of history, whether it be political history or history of science: that the deep grammar of narrative history requires that moral judgments be rendered. And that's the thesis I will argue in this essay, namely, that all historical narratives must make moral assessments. I will be especially concerned with an assessment that might be called that of "historical responsibility."

The role of moral judgment about past historical characters has, despite causal assumption to the contrary, been

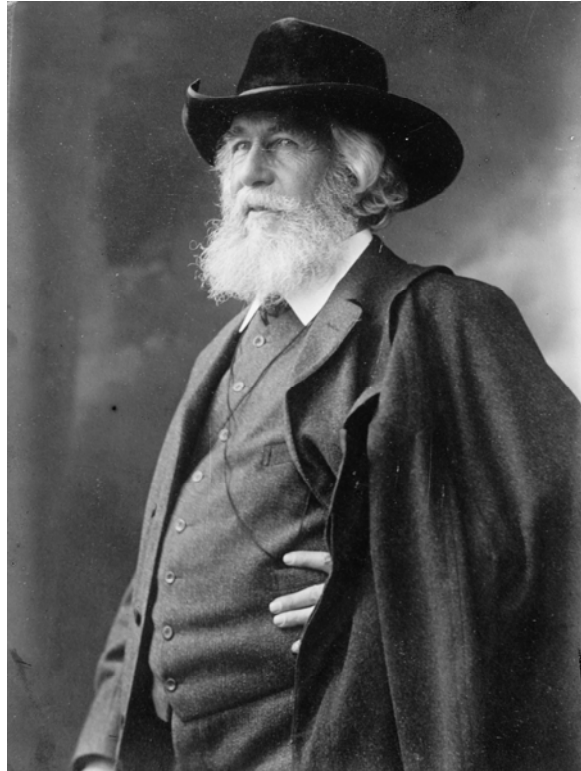


Figure 1: Ernst Haeckel (1834-1919)

brought to eruptive boil recently in one area of history of biology—that of nineteenth and early twentieth century evolutionary thought in Germany. The individual about whom considerable historical and moral controversy swirls is Ernst Haeckel (fig. 1). I'll say more about Haeckel in a moment. He offers a test case for my thesis. Now I'll simply point out that Haeckel, more than any other individual, was responsible for the warfare that broke out in the second half of the nineteenth century between evolutionary theorists and religiously minded thinkers, a warfare that continues unabated in the contemporary cultural struggle between advocates of Intelligent Design and those defending real biological science.

My motivation for considering the moral structure of narratives is encapsulated in the main title of a book that was published not long ago: *From Darwin to Hitler*.⁶ The

⁶Richard Weikart, *From Darwin to Hitler: Evolutionary Ethics, Eugenics, and Racism in Germany* (New York: Palgrave Macmillan, 2004).

pivotal character in this historical descent, according to the author, is Ernst Haeckel. He and Darwin are implicitly charged with historical responsibility for acts that occurred after they themselves died. I don't think judgments of this kind, those attributing moral responsibility across decades, are unwarranted in principle. The warrant lies in the grammar of historical narrative. Whether this particular condemnation of Darwin and Haeckel is appropriate remains quite another matter.

The Temporal and Causal Grammar of Narrative History

Let me focus, for a moment, on two features narrative history as a prelude to my argument and as an illustration of what I mean by the grammar of narrative. This concerns the ways time and causality are represented in narrative histories. Each seeps into narratives in at least four different ways.⁷ Let me first consider, quite briefly, the temporal dimensions of narrative.

Initially, we might distinguish what might be called the **time of events**. Embedded in the deep structure of narrative is the time during which events occur; that sort of time flows equitably on into the future, with each unit having equal duration. Narratives project events as occurring in a Newtonian time. This kind of time allows the historian to place events in a chronology, to compare the duration of events, and to locate them in respect to one another as antecedent, simultaneous, or successive.

But the structuring of these events in a narrative also exhibits what might be called **narrative time**, and this is a different sort of temporal modality. Consider, for instance, Harold Pinter's play "Betrayal." The first scene is set temporally toward the end of the Newtonian sequence dramatized, with the next scene going in the right direction, occurring a few days later. But the third scene falls back to two years before, and the fourth a year before that, with subsequent scenes taking us back finally to a period six years before the final days with which the play begins. The audience,

⁷I have discussed the temporal and causal structure of narrative history in my "The Structure of Narrative Explanation in History and Biology," *History and Evolution*, eds. Matthew Nitecki and Doris Nitecki (Albany: State University of New York Press, 1992), pp. 19-53.

however, never loses its temporal bearings or believes that time staggers along, weaving back and forth like an undergraduate leaving the local college pub.

The historian might structure his or her narrative in a roughly comparable way, when one aspect of the history is related, but then the historian returns to an earlier time to follow out another thread of the story. Or the historian might have the narrative jump into the future to highlight the significance of some antecedent event. Again, when done with modest dexterity, the reader is never confused about the Newtonian flow of events.

The **time of narration** is a less familiar device by which historians restructure real time as well as narrative time. One of the several modes by which historians construct this kind of time is through contraction and expansion of sentence duration. Let me illustrate what I mean by reference to a history with which most readers will be familiar—Thucydides's *History of the Peloponnesian War*. At the beginning of his history, Thucydides—a founder, along with Herodotus, of the genre of narrative history—Thucydides expends a few paragraphs on events occurring in the earliest period of Cretan hegemony through the time of the Trojan War to just before the outbreak of the war between the two great powers of ancient Greece, Athens and Sparta. The period he so economically describes in a few paragraphs extends, in Newtonian time, for about two thousand years. But Thucydides then devotes several hundred pages to the relatively brief twenty-year period of the War, at least that part of the War he recorded. Sentence duration is an indication of the importance the historian places on the events referred to. Sentence expansion or contraction, however, may have other sustaining causes.

Simply the pacing or rhythm of the historian's prose might be one. The great French scientist and historian Bernard de Fontenelle said that if the cadences of his sentences demanded it, the Thirty Years War would have turned out differently. Some historians will linger over an episode, not because it fills in a sequence vital to the tale, but because the characters involved are intrinsically interesting. Maybe some humorous event is inserted in the story simply to keep the reader turning the pages. In

histories, centuries may be contracted into the space of a sentence, while moments may be expanded through dozens of paragraphs.

A fourth temporal dimension of narrative is the **time of narrative construction**. This is a temporal feature especially relevant to considerations of the moral structure of histories. A narrative will be temporally layered by reason of its construction, displaying, as it were, both temporal depth and a temporal horizon. The temporal horizon is more pertinent for my concerns, so let me speak of that. Thucydides wrote the first part of his history toward the end of the war that he described, when the awful later events allowed him to pick out those earlier, antecedent events of explanatory relevance—earlier events that would be epistemologically tinged with Athenian folly yet to come. Only the benefits of hindsight, for example, could have allowed him to put into the mouth of the Spartan messenger Melesipus, who was sent on a last desperate peace mission just before the first engagement of the war—to put into the mouth of this messenger the prophetic regret: “This day will be the beginning of great misfortunes to Hellas.” By the horizontal ordering of time, the historian can describe events in ways that the actors participating in the events could not: Melesipus’s prophecy was possible only because Thucydides had already lived through it. This temporal perspective is crucial for the historian. Only from the vantage in the future, can the historian pick out from an infinity of antecedent events just those deemed necessary for the explanation of the consequent events of interest.

Different causal structures of narratives correspond to their temporal modalities. I won’t detail all of their aspects, but let me quickly rehearse their dominant modes. The most fundamental causal feature of narratives is the **causality of events**. This is simply the causality ascribed to events about which the historian writes. Typically the historian will arrange events so as to indicate their causal sequence, a sequence in which the main antecedent causes are indicated so as to explain subsequent events, ultimately the central events which the history was designed to explain.

Events in a narrative, however, display a different causal grammar from events in nature. We may thus speak of the **causality of narrated events**. When in 433 B.C., the Athenians of Thucydides’ history interfered in an internal affair of Corinth, a Spartan

ally, they couldn't have predicted that war would result—though they might have suspected; they certainly couldn't have predicted their ignominious defeat in the Sicilian campaign twenty years later. From inside of the scene that Thucydides has set, the future appears open; all things are possible, or at least unforeseeable. Yet each of Thucydides's scenes moves inevitably and inexorably to that climax, namely to the destruction of the fleet at Syracuse, the central event of his history. The historian, by reason of his or her temporal horizon, arranges antecedent events to make their outcome, the central event of interest, something the reader, can expect—something, in the ideal case, that would be regarded as inevitable given the antecedent events, all the while keeping his actors in the dark until the last minute.

This is a view about the grammar of narration that some historians would not share. Some try assiduously to avoid surface terms redolent of causality in their narratives. But I think this is to be unaware of the deeper grammar of narrative. The antecedent events are chosen by the historian to make, as far as he or she is able, the consequent events a causal inevitability. That's what it is to explain events historically. To the degree this kind of causal structure is missing, to that degree the history will fail to explain how it is that the subsequent events of interests occurred or took the shape they did. Without a tight causal grammar the narrative will loosen to mere chronicle.

This grammatical feature of narrative has bearing on any moral characterization of the actions of the individuals about whom the historian writes. And this in two ways. First, we do think that when we morally evaluate an action, we assume the individual could have chosen otherwise. There will thus be a tension between the actors represented as regarding the future as open, as full of possibilities, and the historian's knowledge that the future of the actors is closed. They did what they did because of the narrated events, events carrying those individuals to their appointed destiny.

The second way the causality of narrated events bears on moral assessment has to do with the construction of the sequence of events and their causal connections. The historian will also be making a moral evaluation of the actions of characters—implicitly at least—and will arrange that sequence in which the character's actions are placed so as either morally to indict the individual, or morally to exculpate the individual, or, what

is more frequently the case, to locate the individual's action in a morally neutral ground. I'll say more about this feature of the grammar of narrative in a moment.

A third causal modality deployed by historians may be called **the causality of narration**. This aspect of causality has several features, but I will mention only one: this is the location in a narrative of various scenes. So, for example, Thucydides will place one scene before another to indicate what he presumes is an important condition or cause for a subsequent scene, even though the scenes may be at some real temporal distance. A speech made to motivate an action might be placed immediately before the scene in which the action is described, even though the two events may be separated by a fair amount of time. Such juxtaposition can have a conditioning effect as well. Immediately after Thucydides relates Pericles's great funeral oration, which extols the virtues of Athenian democracy and the glories of its laws, he shoves in a dramatic description of the Athenian plague, when citizens ignored the laws and each sought his own pleasure, thinking it might be his last. Yet the oration and the plague were separated by six months. This kind of causality effectively conditions the reader's response to the realities of Athenian society.

Finally, there is the **causality of narrative construction**. There are two quite different causal features that would fall under this rubric. First, one might discriminate the final cause in narrative construction. Most histories aim to explain some central event—the outbreak of the American Civil War, Darwin's discovery and construction of his theory of natural selection, or the racial attitudes of Hitler. The antecedent events in the history provide the causal explanation of the central event, which latter might be thought of as the final cause, that is, the goal of the construction. Historians in their research use this final cause as the beacon in light of which they select out from an infinity of antecedent events just those that might explain the central event. No historian begins, as it were, at the beginning, rather at the end. Without the final cause as guide—a guide that may alter, of course, during the research—the historian could not even start to lay out those antecedent causes that he or she will finally regard as the explanation for the conclusion of the historical sequence.

A related feature of the causality of narrative construction concerns the motives guiding the historian, of which there may be several. The proclaimed and standard motivation of the great nineteenth century historian Leopold von Ranke was to describe an event “wie es eigentlich gewesen,” how it actually was; and, insofar as how it was becomes in specific instances the central event that needs explanation, that event—the final cause—becomes the motive for constructing the history. Ranke’s general standard must be that of every historian. Good historians will want to weigh purported causes of events and emphasize the most important, while reducing narrative time spent on the less important. Yet often other motivations, perhaps hardly conscious even to the historian, may give structure to his or her work. In his suspicious little book *What is History?*, E. H. Carr urged that “when we take up a work of history, our first concern should be not with the facts which it contains but with the historian who wrote it.”⁸ If the reader knows in advance that the historian is of a certain doctrinal persuasion, then a judicious skepticism may well be in order. After all, a historian may select events that have real but minor causal connections with central events of concern, while ignoring even more important antecedent causes. The history would then have a certain verisimilitude, yet be a changeling. Motivations of authors are often revealed by the moral grammar of narratives, another structural feature that lies at the syntactic depths of historical accounts.

The Moral Grammar of Narrative History

I’m going to now turn specifically to the features of the moral grammar of histories, and then illustrate some of the ways that structure characterizes Ernst Haeckel’s story. If narratives have these grammatical structures, then it would be well for historians to be reflectively conscious of this and to formulate their reconstructions in light of a set of principles that I believe should be operative. And in a moment I’ll suggest what those principles ought to be by which we morally judge the behavior of individuals who lived in the past and by which we assess their culpability for the future actions of others.

⁸ E. H. Carr, *What is History?* (New York: Vintage Books, 1961), p. 24.

But Let me first pose the question: Do historians make normative judgments in their histories and should they? I will argue that not only should they, they must by reason of narrative grammar. At one level, it's obvious historians, of necessity, do make normative judgments. Historical narratives are constructed on the basis of evidence—written documents—letters, diaries, published works—also artifacts, such as archeological findings—and high tech instruments, such as DNA analysis, and sometimes oral interviews. And historians attribute modes of behavior to actors on the basis of inference from evidence and in recognition of certain standards. Even when doing something apparently as innocuous as selecting a verb to characterize a proposition attributed to an actor, the historian must employ a norm or standard. For example, Thucydides could have had Melesipus *think* that disaster was in the offing, *believe* that disaster was in the offing, *be convinced* that disaster was in the offing, *suspect* that disaster was in the offing, *assume* that disaster was in the offing, or *prophecy* that disaster was in the offing. Whatever verb the historian selects, he or she will do so because the actor's behavior, as suggested by the evidence, has met a certain standard for such and such modal description—say, being in a state of firm conviction as opposed to vague supposition. All descriptions require measurement against standards or norms—which is not to say that in a given instance, the standard and consequent description would be the most appropriate. The better the historian, the more appropriate the norms employed in rendering descriptions.

Virtually all of the historian's choices of descriptive terms must be normative in this sense. But must some of these norms also be moral norms? I believe they must. The argument is fairly straightforward—at least as straightforward as arguments of this sort ever get. Human history is about *res gestae*, things done by human beings, human actions. Actions are not mere physiological behaviors, but behaviors that are intended and motivated. Inevitably these actions impinge on other individuals immediate or remote. But intentional behavior impinging on others is precisely the moral context. The historian, therefore, in order to assign motives and intentions to individuals whose behaviors affect others and to describe those motives and intentions adequately—that

historian must employ norms governing such intentional behaviors, that is, behaviors in the moral context.

Certainly the assessment of motives and intentions may yield only morally neutral descriptions. But even deciding that an intended behavior is morally neutral is, implicitly at least, also to judge it against standards of positive or negative moral valence and to decide that it conforms to neither. Even a morally neutral assessment is a moral assessment. There is no claim here, of course, that such evaluations are generally self-consciously performed by historians. Mostly these evaluations occur quite reflexively, instead of reflectively. And they usually exist, not explicitly on the surface of the narrative, but in the interstices.

Let me offer one example more concretely of what I am arguing, and this from an historian whom no one would accuse of cheap moralizing—his moralizing are anything but cheap. His descriptions reveal a rainbow of shaded moral evaluations, which range subtly between the polar categories of shining virtue and darkling vice. Byron called him the Lord of Irony, and it's often through that trope that he makes his moral assessments. I'm speaking, of course, of Edward Gibbon.

Let me quote just a short passage from the *Decline and Fall*, where Gibbon is describing what might have been the motives of Julian, as his soldiers were clamoring for his elevation to emperor, even while Constantius was still on the throne. Julian protested he couldn't take the diadem, even as he reluctantly and sadly accepted it. Gibbon writes:

The grief of Julian could proceed only from his innocence; but his innocence must appear extremely doubtful in the eyes of those who have learned to suspect the motives and the professions of princes. His lively and active mind was susceptible of the various impressions of hope and fear, of gratitude and revenge, of duty and of ambition, of the love of fame and of the fear of reproach. But it is impossible for us to ascertain the principles of action which might escape the observation, while they guided, or rather impelled, the steps of Julian himself. . . . He solemnly declares, in the presence of Jupiter, of the Sun, of Mars, of Minerva, and of all the other deities, that till the close of the evening

which preceded his elevation he was utterly ignorant of the designs of the soldiers; and it may seem ungenerous to distrust the honour of a hero, and the truth of a philosopher. Yet the superstitious confidence that Constantius was the enemy, and that he himself was the favourite, of the gods, might prompt him to desire, to solicit, and even to hasten the auspicious moment of his reign, which was predestined to restore the ancient religion of mankind.⁹

In the cascade of rhetorical devices at play—zeugma, antithesis, irony—Gibbon explicitly refuses to attribute morally demeaning motives to Julian, and, of course, at the same time implicitly does precisely that. There is another element of judgment that Gibbon evinces here, which is also an important feature of the moral grammar of historical narrative.

Narratives explain action by allowing us to understand character, in this case Julian's character. Gibbon, however, has led us to comprehend Julian's action, not only by cognitively suggesting what the motives of a prince might be but also by shaping our emotional response to Julian's character and thus producing in us a feeling about Julian's action. We morally evaluate individuals, partly at least, through feelings about them. The historian can orchestrate outrage—as some dealing with Haeckel have—by cutting quotations from an actor into certain vicious shapes, selecting those that appear damning while neglecting those that might be exculpating. Or, like Gibbon, the historian can evoke feelings of moral disdain with little more than the magical mist of antithetic possibilities. As a result, readers will have, as it were, a sensible, an olfactory understanding: the invisible air of the narrative will carry the sweet smell of virtue, the acrid stench of turpitude, or simply the bitter sweet of irony. These feelings will become part of the delicate moral assessment rendered by the artistry of the historian.

This is just one small example of the way moral judgment exists in the interstitial spaces of a narrative, instead of lying right on the surface. But sometimes such judgments do lie closer to the skin of the narrative. Let me now focus precisely on a

⁹Edward Gibbon, *The History of the Decline and Fall of the Roman Empire*, 6 vols. (London: Strahan and Cadell, 1777-1788), 2: 319-20.

case of this and to consider the principles that, I believe, should be operative in making moral judgments of historical figures. This is in the instance of Ernst Haeckel.

Ernst Haeckel, Darwin's Champion in Germany

Haeckel was Darwin's great champion of evolutionary theory in Germany; he was a principal in the theory's introduction there and a forceful defender of it from the mid 1860s until 1919 when he died.¹⁰ Haeckel's work on evolution reached far beyond the borders of the German lands. His popular accounts of evolutionary theory were translated into all the known and unknown languages—at least unknown to the West—including Armenian, Chinese, Hebrew, Sanskrit, and Esperanto. More people learned of evolutionary theory through Haeckel's voluminous writings during this period than from any other source, including Darwin's own work.

Haeckel achieved many popular successes, and, as well, produced more than twenty large, technical monographs on various aspects of systematic biology and evolutionary theory. In these works he described many hitherto unknown species, established the science of ecology, gave currency to the idea of the missing link—which one of his protégés (Eugene Dubois) actually found—and promulgated the biogenetic law that ontogeny recapitulates phylogeny. Most of the promising young biologists of the next generation came to study with him at Jena. His artistic ability was considerable and, at the beginning of the twentieth century, he influenced the movement in art called Jugendstil by his book *Kunstformen der Natur--Art Forms of Nature*. Haeckel became a greatly celebrated intellectual figure, often mentioned for a Nobel Prize.

¹⁰See Robert J. Richards, "If This be Heresy: Haeckel's Conversion to Darwinism," in Abigail Lusting, Robert J. Richards, and Michael Ruse (eds.), *Darwinian Heresies* (Cambridge: Cambridge University Press, 2004), pp. 101-30; and "The Aesthetic and Morphological Foundations of Ernst Haeckel's Evolutionary Project," in Mary Kemperink and Patrick Dassen (eds.), *The Many Faces of Evolution in Europe, 1860-1914* (Amsterdam: Peeters, 2005).



Figure 2: Isadora Duncan: "My writing table in Phillip's Ruhe. I gaze on your lovely picture." (July 1904)

A measure of his celebrity might be taken from this photo, that the scandalously famous dancer Isadora Duncan sent Haeckel, of her admiring his photograph while at her writing table (fig. 2). Haeckel was also the scourge of religionists, smiting the preachers at every turn with the jawbone of evolutionary doctrine. He advocated what he called a "monistic religion" as a substitute for the traditional orthodoxies, a religion based on science. But as a young student, trying to find a subject

for his habilitation, Haeckel roamed along the coasts of Italy and Sicily, in some despair. He thought of giving up biology for the life of a Bohemian, spending his time in painting and poetizing with other German expatriates on the island of Ischia. But he felt that he had to accomplish something in biology, so that he could become a professor and marry the woman he had fallen deeply in love with—his love letters sent back to his fiancée in Berlin are something delicious to read. He finally hit upon a topic: a systematic description of a little known creature that populated the seas, the one-celled protist called a radiolarian (fig. 3). It was while writing his habilitation on these creatures in 1861 that he happened to read Darwin's *Origin of Species* and became a convert. Haeckel produced a magnificent two-volume tome on the radiolaria, which he himself illustrated with extraordinary artistic and scientific acumen.¹¹ Later in the century, his illustrations of radiolaria would influence such artistic designs as René Benet's gateway

¹¹Ernst Haeckel, *Die Radiolarien*, 2 vols. (Berlin: Reimer, 1862).

to the Paris World's Fair of 1900 (fig. 4). But the radiolarian monograph's most immediate and significant effect was to secure Haeckel a professorship at Jena, thus allowing him to marry his beloved cousin, Anna Sethe.

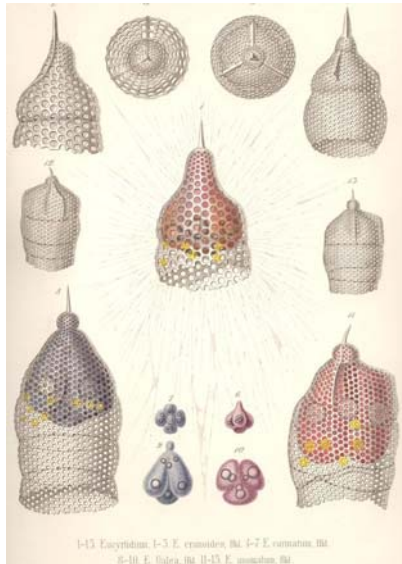


Figure 3: Illustration from Haeckel's *Die Radiolarien* (1863)

transcendence, namely Darwinian theory.

In the years following this upheaval, Haeckel became a zealous missionary for his new faith, and his own volatile and combative personality made him a crusader whose demeanor was in striking contrast to that of the modest and retiring English master whom he would serve. This outsized personality has continued to irritate historians of smaller imagination.

promised a kind of progressive



Figure 4: René Benet's gateway to the Paris World's Fair, 1900

The Moral Indictment of Haeckel

In 1868, Haeckel produced a popular work on the new theory of evolution, entitled *Die Natürliche Schöpfungsgeschichte* (The natural history of creation).¹² It would go through 12 editions up to the time of his death in 1919, and prove to be the

¹²Ernst Haeckel, *Natürliche Schöpfungsgeschichte* (Berlin: Reimer, 1868).

most successful work of popular science in the nineteenth and early twentieth centuries. There are two features of that work that incited some of the fiercest intellectual battles of the last part of the nineteenth century, and have led some historians and others to comparably fierce judgments of Haeckel's moral probity.

The first has to do with what became the cardinal principle of his evolutionary demonstrations, namely the biogenetic law that ontogeny recapitulates phylogeny. This principle holds that the embryo of a developing organism goes through the same morphological stages that the phylum went through in its evolutionary history: so, for example, the human embryo begins as a one-celled creature, just as we presume life began on this earth in a one-celled form; it then goes through a stage of gastrulation, and Haeckel believed that in the far distant past, our primitive ancestors plied the seas in that cup-like form; then the embryo takes on the morphology of an archaic fish, with gill-arches; then of a primate, then a specific human being.

The corollary to the law is that closely related creatures—vertebrates for example—will go through early embryological stages that are quite similar to one another (fig. 5). Some of Haeckel's enemies charged that he had exaggerated the tail of the human embryo to make it more animal like—a controversy that became known as *Die Schwanzfrage*. But the deeper, more damaging fight came with Haeckel's illustration of quite early embryos at

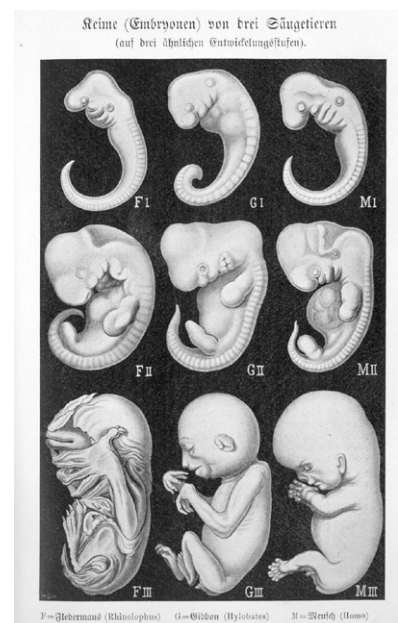


Figure 5: Illustration of the biogenetic law, from Haeckel's *Kampf um den Entwicklungsgedanken*, 1905.

the sandal stage, when they look like the sole of a sandal (fig. 6). In the accompanying text to this illustration, Haeckel remarks: "If you compare the young embryos of the dog, chicken, and turtle . . . , you won't be in a position to perceive a difference."¹³

One of the very first reviewers of Haeckel's book, an embryologist who became a sworn enemy, pointed out that one certainly wouldn't be able to distinguish these embryos, since Haeckel had used the same wood-cut three times. He had, in the words

¹³Ibid., p. 249.

of Ludwig Rüttimeyer, the reviewer, committed a grave sin against science and the public's trust in science.¹⁴

In the second edition of his book, Haeckel retained only one illustration of an embryo at the sandal stage, and remarked in the text: It might as well be the embryo of a dog, chicken or turtle, since you can't tell the difference. The damage, however, had been inflicted, and the indictment of fraud haunted Haeckel for the rest of his life. The charge has been used by creationist in our own day as part of a brief, not only against Haeckel, but against evolutionary theory generally. Yet not only creationists, several historians have employed it in their own moral evaluation of Haeckel and his science.

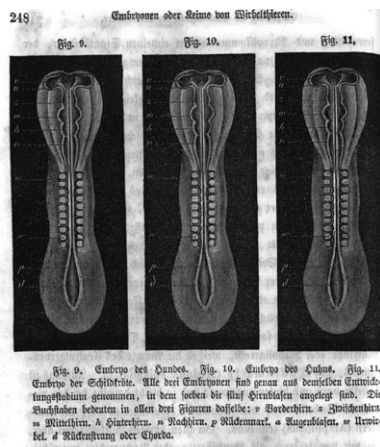


Figure 6: Embryos of dog, chicken, and turtle at the sandal stage, from Haeckel's *Natürliche Schöpfungsgeschichte*, 1868.

arching above the descending orders of the “lower species”—all rooted in the Urmensch or Affenmench, the ape-man. A salient feature of the diagram should catch our attention: among the varieties of the Caucasian species, the Berbers and Jews were thought by Haeckel to be as advanced as the Germans and Southern Europeans. This

The second feature of Haeckel's work on which I'd like to focus really didn't create a stir in his own time but has become a central moral issue in ours. This has to do with the assumption of progress in evolution, an assumption which Haeckel certainly made. That assumption is forcefully displayed in the tree diagram appended to his *Natürliche Schöpfungsgeschichte*. The diagram displays the various species of humankind, with height on the vertical axis meant to represent more advanced types (fig. 7). Here the Caucasian group leads the pack (seen in the upper right branch of the tree), arching above the descending orders of the “lower species”—all rooted in the Urmensch or Affenmench, the ape-man. A salient feature of the diagram should catch our attention: among the varieties of the Caucasian species, the Berbers and Jews were thought by Haeckel to be as advanced as the Germans and Southern Europeans. This

¹⁴ Ludwig Rüttimeyer, Review of Ernst Haeckel, “Ueber die Entstehung und den Stammbaum des Menschengeschlechts” and *Natürliche Schöpfungsgeschichte*,” in *Archiv für Anthropologie* 3 (1868): 301-302.

classification should have had bearing on Haeckel's assignment by some historians to the ranks of the proto-Nazis.¹⁵

Nazi Race-Hygienists and their Use of Haeckelian Ideas

That several Nazi race-hygienists appealed to Haeckel to justify their views is clear. One pertinent example is Heinz Brücher's *Ernst Haeckels Bluts- und Geistes-Erbe* (Ernst Haeckel's racial and spiritual legacy), published in 1936.¹⁶ Not only did the author look to Haeckel's views of racial hierarchy as support for policies of National Socialism, he first gave full account of Haeckel's own impeccable pedigree. Included with the book was a five-foot chart laying out Haeckel's family tree. The aim of Brücher's racial hygienic analysis was both to demonstrate a new method of showing the worth of an intellectual position and using that method

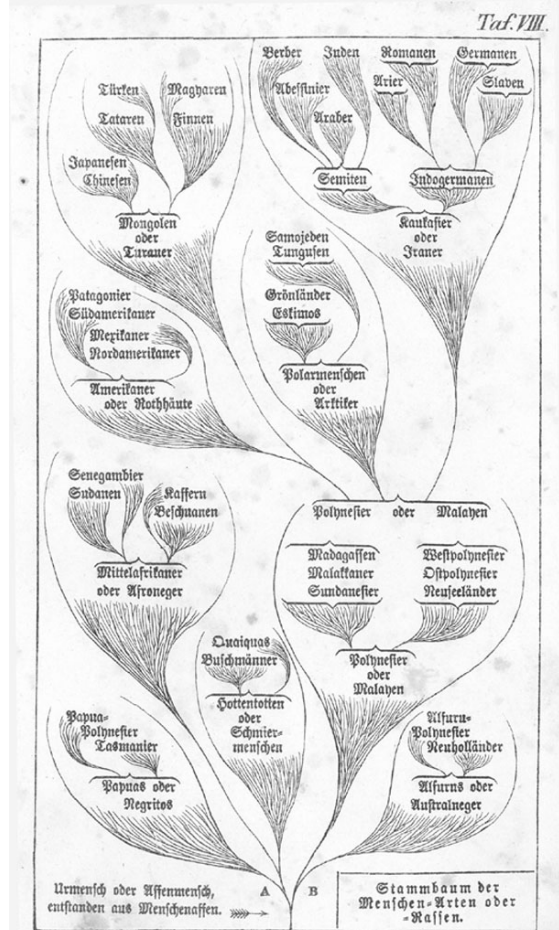


Figure 7: Stammbaum der Menschen-Arten, from Haeckel's *Natürliche Schöpfungsgeschichte*, 1868.

¹⁵ There is direct evidence for Haeckel's attitude about Jews, beyond his placement of them among the advanced races. In the early 1890s, he discussed the phenomenon of anti-Semitism with the Austrian novelist and journalist Hermann Bahr (1863–1934), who collected almost forty interviews with European notables on the issue, such individuals as August Bebel, Theodor Mommsen, James Arthur Balfour, and Henrik Ibsen. In his discussion with Bahr, Haeckel did think that lower class Russian Jews would stand as an offense to the high standards of German culture. But of educated German Jews, he remarked: "I hold these refined and noble Jews to be important elements in German culture. One should not forget that they have always stood bravely for enlightenment and freedom against the forces of reaction, inexhaustible opponents, as often as needed, against the dark men [*Dunkelmänner*]. And now in the dangers of these perilous times, when Papism again rears up mightily everywhere, we cannot do without their tried and true courage." (By "dark men" Haeckel likely meant the Jesuits.) There is simply no reason to believe Haeckel to be racially anti-Semitic, as Gasman and Weikart do. See, Hermann Bahr, "Ernst Haeckel," *Der Antisemitismus* (Berlin: S. Fischer, 1894), pp. 62-69. Quotation from p. 69.

¹⁶ Heinz Brücher, *Ernst Haeckels Bluts- und Geistes-Erbe: Eine kulturbioologische Monographie* (Munich: Lehmanns Verlag, 1936).

to justify Haeckel's own doctrine. That is, only the best blood flowed through Haeckel's veins, and therefore we may trust his ideas.

To make the favorable connection between Haeckel and Hitler, Brücher focused on a passage from Haeckel's *Natürliche Schöpfungsgeschichte*, that reads: "The difference in rationality between a Goethe, a Kant, a Lamarck, a Darwin and that of the lower natural men—a Veda, a Kaffer, an Australian and a Papuan is much greater than the graduated difference between the rationality of these latter and that of the intelligent vertebrates, for instance, the higher apes." Brücher then cites a quite similar remark by Hitler in his Nuremberg speech of 1933.¹⁷ In this way he has made Haeckel historically responsible, at least in part, for Hitler's racial attitudes.¹⁸

The Judgment of 'Historical Responsibility'

Brücher's attribution of moral responsibility to Haeckel is of a type commonly found in history, though the structure of these kinds of judgments usually goes unnoticed, lying as it does in the deep grammar of historiography. For example, historians will often credit, say, Copernicus, in the fifteenth century, with the courage to have broken through the rigidity of Ptolemaic assumption and thus, by unshackling men's minds, to have initiated the scientific revolution of the sixteenth and seventeenth centuries. This, too, is a moral appraisal of historical responsibility, though, needless to say, Copernicus himself never uttered: "I now intended to free men's minds and initiate the scientific revolution." Yet, historians do assign him credit for that, moral credit for giving successors the ability to think differently and productively.

The epistemological and historical justification for this type of judgment is simply that the meaning and value of an idea or set of ideas can be realized only in actions that themselves may take some long time to develop—this signals the ineluctable teleological feature of history. While this type of judgment derives from the moral

¹⁷Ibid., pp. 90-91.

¹⁸ Uwe Hossfeld discusses Brücher's work and its intentions in his *Geschichte der biologischen Anthropologie in Deutschland* (Stuttgart: Franz Steiner Verlag, 2005), pp. 312-16.

grammar of history, this doesn't mean, of course, that every particular judgment of this sort is justified.

The Reaction of Contemporary Historians

How has Haeckel gone down with contemporary historians? Not well. His ideas, mixed with his aggressive and combative personality, have lodged in the arteries feeding the critical faculties of many historians, causing sputtering convulsions. Daniel Gasman has argued that Haeckel's "social Darwinism became one of the most important formative causes for the rise of the Nazi movement."¹⁹ Stephen Jay Gould and many others concur that Haeckel's biological theories, supported, as Gould contends, by an "irrational mysticism" and a penchant for casting all into inevitable laws, "contributed to the rise of Nazism."²⁰ And more recently, in *From Darwin to Hitler*, Richard Weikart traces the metastatic line his title describes, with the mid-center of that line encircling Ernst Haeckel.

Weikart offers his book as a disinterested historical analysis. In that objective fashion that bespeaks the scientific historian, he declares: "I will leave it the reader to decide how straight or twisted the path is from Darwinism to Hitler after reading my account."²¹ Well, after reading his account, there can be little doubt not only of the direct causal path from Charles Darwin through Ernst Haeckel to Adolf Hitler but of Darwin's and Haeckel's complicity in the atrocities committed by Hitler and his party. The evolutionists bear historical responsibility.

Taking E. H. Carr's advice to heart, we might initially be suspicious of Weikart's declaration of objectivity, coming as it does from a member of an organization having

¹⁹Daniel Gasman, Daniel Gasman, *The Scientific Origins of National Socialism* (New York: Science History Publications, 1971), p. xxii. See also, Daniel Gasman, *Haeckel's Monism and the Birth of Fascist Ideology* (New York: Peter Lang, 1998).

²⁰Stephen Jay Gould, *Ontogeny and Phylogeny* (Cambridge: Harvard University Press, 1977), pp. 77-81.

²¹Weikart, *From Darwin to Hitler*, p. x.

strong fundamentalist motivation.²² Nonetheless, other historians have made similar suggestions—Gould and Gasman, for instance.

It is yet disingenuous, I believe, for Weikart to pretend that most readers might come to their own conclusions despite the moral grammar of his history. Weikart, as well as Gasman, Gould, and many other historians have created an historical narrative implicitly following—they couldn't do otherwise—the principles of narrative grammar: they have conceptualized an end point—Hitler's behavior (the final cause) regarded here as ethically horrendous—and have traced back causal lines to antecedent sources that might have given rise to those attitudes of Hitler, tainting those sources along the way. It's like a spreading oil slick carried on an indifferent current and polluting everything it touches.

Now one can cavil, which I certainly would, about many deficiencies in the performance of these historians. They have not, for instance, properly weighed the significance of the many other causal lines that led to Hitler's behavior—the social, political, cultural, and psychological strands that many other historians have in fact emphasize. And thus that they have produced a mono-causal analysis that quite distorts the historical picture.

While responsibility assigned Darwin and Haeckel might be mitigated by a more realistic weighing of causal trajectories, some culpability might, nonetheless, remain. Yet is there any consideration that might make us sever, not the causal chain—say, from Darwin's writing, to Haeckel's, to Brücher's, to memos of high ranking Nazis, and finally to Hitler's speeches—but the chain of moral responsibility? After all, Haeckel, and of course, Darwin, had been dead decades before the rise of the Nazis. And as Monty-Python might have put it, they're still dead.

Let me summarize at this juncture the different modal structures of moral judgment in historical narratives that I've tried to identify. First is the explicit appraisal of the historian, rendered when the historian overtly applies the language of moral

²²The Discovery Institute of the state of Washington supports the movement of Intelligent Design.

assessment to some decision or action taken by an historical figure. This is both rare and runs against the grain of the cooler sensibilities of most historians, Lord Acton excepted.

Second is the appraisal of contemporaries (or later individuals). Part of the historian's task will often be to describe the judgments made on an actor by his or her own associates or subsequent individuals. In the case of Haeckel, there were those who condemned him of malfeasance, as well as colleagues who defended him against the charge. This mode of moral attribution may be for the historian evidentiary, but hardly decisive.

Third is the appraisal by causal connection. This occurs when the historian joins the decisions of an actor with consequential behavior of moral import. The behavior itself might be that of the actor or behavior displaced at some temporal remove from the actor's overt intentions—Hitler's actions, for example, as supposedly promoted by Haeckel's conceptions. This latter is what I have called "historical responsibility." The causal trajectory moves from past to future, but the moral responsibility flows along the causal tracks from future back to past. And it is the guiding hand of the historian—fueled by a complex of motives—that pushes this historical responsibility back along the causal rails to the past. And it's here that a minor causal relationship can be mistaken for a major moral relationship. I will, in just a moment, indicate how I believe the historian ought reflectively to modulate the flow of responsibility.

Finally, there is appraisal by aesthetic charge. This occurs when the historian through artful design evokes a feeling of positive or negative regard for the actor. In the treatment of Haeckel by Gould, Gasman, and Weikart, the needle of regard has swung to the decidedly negative end of the scale.

Principles of Moral Judgment

This brings me to the final part of my argument, namely the principles that ought to govern, in a reflective way, our moral judgments about historical figures, especially for actions that were at some temporal distance from their own historical positions. I believe that the same general principles ought to serve as standards for our moral

assessments of historical figures as serve for the assessments of our contemporaries, including ourselves. But much will depend on how those principles get specified when judging historically remote individuals.

First, there is the supreme principle of evaluation: it might be the golden rule, the greatest happiness, altruism, or the categorical imperative. Likely in the cases I have in mind any of these presumptive first principles will yield a similar assessment of moral motives, since they express, I believe, the same moral core. Secondly, there is the intention of the actor: what did he or she attempt to do? What action did the actor desire to execute, to be distinguished, of course, from mere accidental behavior? Third is the motive for acting, the ground for that intention to act in a certain fashion. The motive will determine moral valence. Finally, in assessing moral behavior, we must examine the beliefs of the individual actor and try to determine whether they were reasonable beliefs—and this is the special provenance of the historian. Let me give an example.

When the Hippocratic physicians, during the great Athenian plague that Thucydides so dramatically described—when those physicians purged and bled the afflicted, their treatment actually hastened the deaths of their patients. But we certainly don't think the physicians malign or malfeasant, since they had a reasonable belief in the curative power of their practice. Their intention was to apply the best curative techniques. And their motive, we may presume, was altruistic, since they risked their own lives in caring for the sick. One should judge them, I believe, moral heroes, even though the consequence of their behavior was injury and even the death of their patients.

The case of Ernst Haeckel is decidedly more problematic. In assessing the moral probity of his replication of woodcuts, the historian would have to examine his intentions and motivations. Did he claim his woodcuts were evidence of his biogenetic law? If so he must have been motivated to deceive, and we may be thus entitled to suspect his character. Or did he merely intend to provide an illustration of the law for a general audience, recognizing that indeed at an early stage the embryos can't be

distinguished? And thus at best, through a false economy, he committed a very minor infraction, one that doesn't rise to the level of fraud and moral condemnation.²³

Concerning Haeckel's conception of a racial hierarchy, the historian has the task of exploring two questions in particular: what did he intend to accomplish by his theory? And how reasonable were the beliefs he harbored about races. To take the first question: Could Haeckel be conceived as intending to set in motion something like the crimes of the Nazis? Or minimally, did he exhibit a careless disregard for the truth of his views about races, so that some malfeasant act could, at least, have been vaguely anticipated. It's in answering this question that the grammar of narrative must be carefully observed. The historian may lay down the scenes of his or her history so as to lead causally to a central event, such as Hitler's racial beliefs and their results in the holocaust; but the historian needs to keep the actors in the dark—insofar as it is reasonable to do so—about those future consequences. In this case, to keep Haeckel oblivious to the future use of his work. The historian may easily slip, since he or she knows the future outcome of the actor's decisions. It's easy to assume the actor also knew or could have anticipated those outcomes, at least in some vague way. More likely, though, the historian might simply fail to reflect on the crucial difference between his or her firm knowledge of the past and the actor's dim knowledge of the future.

In addition to carefully assessing intentions and motives, the historian must also consider the set of beliefs harbored by the actor. For example, was it reasonable for someone like Darwin or Haeckel to believe that evolutionary theory led to a hierarchy of species within a genus or races within a species? Or did they hold these ideas in reckless disregard for the truth. To assess reasonableness of belief in this instance, the historian would have to know what the scientific consensus happened to be in the second half of the nineteenth century. And in this case, a modestly diligent historian would discover that the community of evolutionary theorists—as well as other biologists—did understand the human races to stand in a hierarchy, just as did other animals that displayed a scale of traits. In the human case, the traits included those of

²³ I have tried to make these assessments in my forthcoming *The Tragic Sense of Life: Ernst Haeckel and the Battle over Evolutionary Thought*.

intelligence, moral character, and beauty. Nineteenth-century evolutionary theory implied that conclusion, and all of the available evidence supported it. We might recognize from our perspective certain social factors constraining the judgments of biologists; but it's safe to say they did not.

Then the historian can further ask, in this particular instance, what does categorizing peoples as branches of a racial hierarchy mean for the treatment of those so classified? This question does not allow for a universal answer, but will depend more particularly on the individual scientist. Weikart, for instance, indicts Darwin for acceding to belief in a racial hierarchy, but neglects to mention that Darwin did not think any action should be taken to reduce the welfare of those lower in the scale. Haeckel's own attitudes about how one should treat those lower in the hierarchy is less clear; but there is hardly room for moral condemnation, given the obscurity of his views about practical action.

Conclusion

It can only be a tendentious and dogmatically driven assessment that would condemn Darwin for the crimes of the Nazis. I will confess, though, that I have not yet made up my own mind about the historical responsibility of Haeckel, with whom I have considerable sympathy.

An historian can't write an extended account of the life of an individual without some measure of identification. If one is going to recover the past with anything like verisimilitude, one must, as R. G. Collingwood has maintained—one must relive the ideas of the past, which is not only to unearth long interred intellectual structures but also to feel again the pulse of their vitality, to sense their urgency, to admire their originality, and thus to empathize with their authors. And yet one has to do all of this while retaining a reflective awareness of the moral structure in which actors conceived those ideas and perceived their import.

