

ANTI-DARWIN, ANTI-SPENCER: FRIEDRICH NIETZSCHE'S CRITIQUE OF DARWIN AND "DARWINISM"

Lewis Call

California Polytechnic State University, San Luis Obispo

One of the many tasks Friedrich Nietzsche assigned himself was a critique of nineteenth-century science. In 1886 he added an *Attempt at a self-criticism* to the *Birth of tragedy*, which had originally been published in 1872. In this new preface he said that "what I then got hold of, something frightful and dangerous, a problem with horns but not necessarily a bull, in any case a *new* problem — today I should say that it was *the problem of science itself*, science considered for the first time as problematic, as questionable".¹ Nietzsche clearly believed that he was performing some revolutionary task, that he was viewing science in some new way. And indeed, to an extent he was correct. The critique of nineteenth-century scientific theory and practice which he developed was extensive and compelling; it was a dramatic challenge by a talented philosopher to the science of his day.

This critique applied to many disciplines within nineteenth-century science. Nietzsche writes in *Beyond good and evil*, for example, that "it is perhaps just dawning on five or six minds that physics, too, is only an interpretation and exegesis of the world (to suit us, if I may say so!) and not a world-explanation; but insofar as it is based on belief in the senses, it is regarded as more".² In this interesting passage, Nietzsche seems to be anticipating a trend among some twentieth-century philosophers of science to understand physics as a discipline which can provide interpretations of physical phenomena, but which cannot provide a 'true' picture of the world. For Nietzsche, the project of physics, like any human project, is always carried out under the conditions of human consciousness and subjectivity, though physicists might like to deny this point. Nietzsche notes that "physicists believe in a 'true world' in their own fashion ... but they are in error. The atom they posit is inferred according to the logic of the perspectivism of consciousness — and is therefore itself a subjective fiction. This world picture they sketch differs in no essential way from the subjective world picture."³ Nietzsche's claim about the subjective nature of physical science has implications for other scientific disciplines as well. "There is nothing unchanging in chemistry," he writes, "this is only appearance, a mere school prejudice. We have *slipped in* the unchanging, my physicist friends, deriving it

from metaphysics as always.”⁴ In these passages, Nietzsche is challenging many nineteenth-century scientists who believed that the “truths” they discovered were unchanging, eternal facts about the world. Nietzsche thus sets the stage for later philosophers of science; the Nietzschean critique of science as an eminently subjective enterprise anticipates, for example, the work of Thomas Kuhn. In his classic book, *The structure of scientific revolutions*, Kuhn argues that although scientists often try to claim that their work is universally valid, science can be better understood as a system of competing perspectives or worldviews which Kuhn calls “paradigms”.⁵ The parallels between Nietzsche’s argument and that of Kuhn are striking, and Kuhn’s work has of course been enormously influential among contemporary historians and philosophers of science. A closer look at Nietzsche’s critique of scientific objectivity would therefore seem to be in order, since this critique sets an important precedent for Kuhn’s work.

Like Kuhn, Nietzsche did not intend his work as a dismissal of science in general, but rather as a critique of the idea that science has access to universal truths. Indeed, in many places throughout his corpus, Nietzsche speaks quite favourably about science, or about certain varieties of science. This is most notable, perhaps, in *The gay science*. As the title suggests, this work is an attempt on Nietzsche’s part to describe a new kind of scientific activity, one which Nietzsche hopes will not fall prey to the problems of nineteenth-century science. Nietzsche writes in *The gay science*:

we, however, *want to become those we are* — human beings who are new, unique, incomparable, who give themselves laws, who create themselves. To that end we must become the best learners and discoverers of everything that is lawful and necessary in the world: we must become *physicists* in order to be able to be *creators* in this sense — while hitherto all valuations and ideals have been based on *ignorance* of physics or were constructed so as to *contradict* it. Therefore: long live physics!⁶

Nietzsche’s thought, then, is more complex and nuanced than a simple rejection of physics and other sciences. As Alexander Nehamas puts it in his excellent account of Nietzsche’s perspectivism, Nietzsche “does not object to science itself ... but rather to an interpretation which refuses to acknowledge that science is itself an interpretation ... the problem has been that the methods of science have been assumed to be better than any others, and its objects have been considered to be more real or ultimate than anything else”.⁷ At the heart of Nietzsche’s critique is not an attack on science *per se*, but rather an attack on what Nietzsche saw as the complacent, overconfident attitude which underlay much nineteenth-century science.

Nietzsche was more than willing to allow a role for scientific interpretation, as long as the practitioners of science were willing to admit that they were engaged in interpretation. Indeed, Nietzsche often made use of the language of scientific interpretation in his own work, especially in his earlier books. In

Human, all too human, for example, Nietzsche notes “that the world is *not* the epitome of an eternal rationality can be conclusively probed by the fact that that *piece of the world* which we know — I mean our own human rationality — is not so very rational. And if *it* is not always perfectly wise and rational, then the rest of the world will not be so either; here the conclusion *a minori ad majus, a parte ad totum* [from the less to the greater, from the part to the whole], applies, and does so with decisive force.”⁸ Here Nietzsche is making use of good scientific induction — and doing so, ironically, to argue against the claim that the world is the sort of place where induction makes sense. This is a perfect example of the tensions which exist within Nietzsche’s thought on science: Nietzsche uses the language of science and the techniques of scientific reasoning in an attempt to undermine the belief that science can provide access to universally valid truths.

This article explores one aspect of Nietzsche’s critique of nineteenth-century science, namely his attacks on certain varieties of biological thought. Biology was in its heyday in the nineteenth century, and theories of evolution received widespread attention in both scholarly and popular circles. In Germany, one of the most widely discussed of these theories — though by no means the only one — was Darwinism. Nietzsche criticized Darwin’s theories on several grounds, paying particular attention to the theory of human development which Darwin outlined in the *Descent of man*. First, Nietzsche felt that Darwin’s ideas promoted a dangerously inaccurate view of human society and culture. Like many other nineteenth-century critics of Darwin, Nietzsche also took issue with the mechanisms by which Darwin accounted for evolution, namely natural and sexual selection. On this issue, Nietzsche sided with the Lamarckian critics of Darwinism, who postulated the inheritance of acquired characteristics as the mechanism behind evolution. Against Darwin’s theory of evolution via natural and sexual selection, Nietzsche offered an alternative model for the development of human society and culture; this model centred around Nietzsche’s concept of the will to power. I suggested above that Nietzsche was opposed to certain trends in physics, but not to the discipline as a whole. Similarly, the fact that Nietzsche tried to develop an alternative model of human development shows that he was opposed not to biological science in its entirety, but rather to Darwinistic trends within nineteenth-century biology. In particular, Nietzsche disputed the political uses to which Darwin’s ideas were put, particularly in Imperial Germany. As a dedicated critic of liberal, socialist and nationalist political beliefs, Nietzsche could not help but reject all attempts to appropriate Darwinism into these political traditions. Nietzsche believed that Darwinism, like any other scientific theory, was nothing more than an interpretation of the world; the problem was that for Nietzsche, Darwinism was an interpretation which carried with it tremendously dangerous political possibilities.

Nietzsche’s critique of the political implications of “Darwinism” extended to the work of Herbert Spencer. I use quotation marks when referring to Spencer’s

“Darwinism” for the simple reason that, as Peter Bowler has shown, Spencer was much more of a Lamarckian than a Darwinian. Unfortunately, the term “social Lamarckianism” has not gained the widespread usage that “social Darwinism” has attained. In any case, it is reasonable to link Spencer’s thought with that of Darwin, if only because Nietzsche saw the two thinkers as symptoms of the same cultural sickness. Nietzsche saw Spencer’s thought as the worst kind of nineteenth-century science. Spencer represented for Nietzsche the perfect example of a scientist who was so completely convinced of the objective truth of his theory that he was entirely unwilling to consider the possibility that this theory might be only one possible interpretation among many. And for Nietzsche, Spencer’s interpretation was far from the best available perspective, since Spencer’s “Darwinism” led to a liberal politics which Nietzsche found entirely insupportable. Spencer thus became for Nietzsche an icon of nineteenth-century science’s unwarranted confidence in its access to the truth.

Nietzsche attacked Darwin and “Darwinism” because he believed that these theories were manifestations of scientific nihilism. To understand this Nietzschean critique, then, we must begin by carefully analysing Nietzsche’s account of nihilism. Many of Nietzsche’s most interesting notes and aphorisms concerning nihilism have been collected as Book One of the *Will to power*; here we learn that for Nietzsche, nihilism represented both a positive and a negative force: “Principle: There is an element of decay in everything that characterizes modern man: but close beside this sickness stand signs of an untested force and powerfulness of the soul. *The same reasons that produce the increasing smallness of man drive the stronger and rarer individuals up to greatness.*”⁹ This is the same sort of claim that a Marxist might make with regards to the capitalist mode of production; i.e., that although it is responsible for many of the horrors of modern society, it is nonetheless a force of tremendous historical importance which will eventually make possible a better world. However, Nietzsche speaks critically of nihilism more frequently than he reminds us of its historical importance. For Nietzsche, nihilism in the negative sense refers to a feeling of emptiness, a suspicion that the ideas, institutions and values of the world are secretly meaningless. Thus Nietzsche provides this definition: “what does nihilism mean? *That the highest values devalue themselves.*”¹⁰ In an important note entitled “Decline of cosmological values”, written between 1887 and 1888, Nietzsche describes three aspects of this “devaluation”. Among the values that “devalue themselves”, Nietzsche names, first, progress or “becoming”:

we have sought a ‘meaning’ in all events that is not there ... this meaning could have been: the ‘fulfilment’ of some highest ethical canon in all events, the moral world order; or the growth of love and harmony in the intercourse of beings; or the gradual approximation of a state of universal happiness; or even the development toward a state of universal annihilation — any goal at

least constitutes some meaning. What all these notions have in common is that something is to be *achieved* through the process — and now one realizes that becoming aims at *nothing* and achieves *nothing*.¹¹

Nihilism in this first sense, then, constitutes a critique of the idea of progress common to both Christianity and the Enlightenment tradition. Nietzsche argues here that teleology, the faith in humanity's ability to progress towards a goal, is susceptible to the nihilistic critique.

The second aspect of the nihilistic condition is the belief, endemic to modern society, that what was previously held to be true or valuable — God, reason, humanity — in fact has no meaning. Thus “some sort of unity, some form of ‘monism’: this faith suffices to give man a deep feeling of standing in the context of, and being dependent on, some whole that is infinitely superior to him, and he sees himself as a mode of the deity. — ‘The well-being of the universal demands the devotion of the individual’ — but behold, there is no such universal!”¹² Humanity has deified any number of ideas in its long history (including the idea of humanity itself), but in the modern world, an intense scepticism regarding these deities has arisen. For Nietzsche, this is nihilism in the second sense. It is a positive force in that it casts down false idols, but we must understand that it also carries with it a tremendous and deeply troubling sense of emptiness.

For Nietzsche, metaphysics represents a desperate attempt to escape nihilism, but this attempt is doomed to failure; indeed, the attempt constitutes the third and, Nietzsche claims, “last” form of nihilism. “Given these two insights, that becoming has no goal and that underneath all becoming there is no grand unity in which the individual could immerse himself completely as in an element of supreme value, an escape remains: to pass sentence on this whole world of becoming as a deception and to invent a world beyond it, a *true* world.”¹³ This is the option of metaphysics. However, Nietzsche argues that this option is deeply flawed, since metaphysics does not overcome nihilism, but actually *produces* a powerful form of nihilism: “as soon as man finds out how that world is fabricated solely from psychological needs, and how he has absolutely no right to it, the last form of nihilism comes into being: it includes disbelief in any metaphysical world and forbids itself any belief in a *true* world.”¹⁴ For Nietzsche, the most notorious purveyor of the error of metaphysics was Kant: “Conclusion: The faith in the categories of reason is the cause of nihilism. We have measured the value of the world according to categories *that refer to a purely fictitious world*.”¹⁵ The phrase “categories of reason” is a clear reference to Kant. This critique of Kantian idealism is confirmed in a passage from *Twilight of the Idols* entitled “How the ‘True World’ Finally Became a Fable: The History of an Error”: “The true world — unattainable, indemonstrable, incomprehensible, unpromisable; but the very thought of it — a consolation, an obligation, an imperative. (At bottom, the old sun, but seen through mist and scepticism. The

idea has become elusive, pale, Nordic, Königsbergian.)”¹⁶ (Königsberg, of course, was Kant’s home town.) As I shall argue below, the values of Kantian idealism formed an important part of the world view of many nineteenth-century German biologists; the critique of Kant as a metaphysical nihilist thus emerges as an important motivation for Nietzsche’s attack on the biological science of his era.

Nietzsche’s critique of Kant and of the metaphysical values of the German *Aufklärung* (Enlightenment) leads directly to a critique of modern science as a fundamentally nihilistic enterprise. Nietzsche makes the connection between science and metaphysics explicit in the *Genealogy of morals*: “it is still a *metaphysical faith* that underlies our faith in science — and we men of knowledge of today, we godless men and anti-metaphysicians, we, too, still derive our flame from that fire ignited by a faith millennia old, the Christian faith, which as also Plato’s, that God is truth, that truth is *divine*.”¹⁷ Here Nietzsche is revisiting one of his favourite themes: that Christian theology, with its faith in a perfect God, is essentially a reformulation of the Platonic metaphysics of ideal forms. For Nietzsche, this metaphysical trend manifests itself in the modern world as science. The progression goes something like this: for Plato, absolute truth exists in the world of forms. With the development of Christian theology, the faith in truth continues, though truth is now understood as God’s word. Science retains the belief in truth, but truth is now spoken of in terms of scientific laws. In any of the three cases, the faith in truth is a metaphysical faith, because in each case this faith must appeal to something beyond the physical: the world of forms, God, or a scientific law which is believed to apply to events and phenomena yet to be observed. Naturally, if Nietzsche understands science as relying upon a “metaphysical faith”, then science becomes susceptible to the same type of critique that he levels against other varieties of metaphysics, i.e. that it represents one of the basic forms of nihilism. For Nietzsche to tie science and metaphysics together in this way is a dramatic move, particularly since it was common in the nineteenth century to understand science as an antidote to the excesses of metaphysics.

One final aspect of Nietzsche’s critique of scientific nihilism has to do with the asceticism of science. Nietzsche devotes the entire third essay of his *Genealogy of morals* to a discussion of the ascetic ideal, which he defines as (among other things)

the peculiar, withdrawn attitude of the philosopher, world-denying, hostile to life, suspicious of the senses, freed from sensuality, which has been maintained down to the most modern times and has become virtually the philosopher’s pose *par excellence* — it is above all a result of the emergency conditions under which philosophy arose and survived at all; for the longest time philosophy would not have been possible at all on earth without ascetic wraps and cloak, without an ascetic self-misunderstanding.¹⁸

By “world denying”, Nietzsche means the rejection, common to the ascetic and the metaphysician, of the material world in favour of another world. For Nietzsche, the ascetic is “hostile to life”; that is, the ascetic rejects the values of those who locate themselves firmly in *this* world. Nietzsche most frequently associates the ascetic ideal with a religious figure, the “ascetic priest” who rejects the physical world in favour of the world beyond. However, in several interesting passages from the *Genealogy*, Nietzsche argues that science is also a manifestation of the ascetic ideal. “Science today has absolutely no belief in itself, let alone an ideal above it — and where it still inspires passion, love, ardour, and *suffering* at all, it is not the opposite of the ascetic ideal but rather *the latest and noblest form of it*.”¹⁹ Far from being the enemy of the ascetic priest, the scientist is actually an ascetic priest *par excellence*, carrying on the work of the ascetic from within the comfortable disguise of scientific objectivity. Indeed, Nietzsche goes so far as to suggest that without the ascetic ideal standing behind it, science could not even sustain itself:

no! Don't come to me with science when I ask for the natural antagonist of the ascetic ideal, when I demand: ‘where is the opposing will expressing the *opposing ideal*?’ Science is not nearly self-reliant enough to be that; it first requires in every respect an ideal of value, a value-creating power, in the *service* of which it could *believe* in itself — it never creates values.²⁰

Science, then, is not even an independent ally of the ascetic ideal; it is simply a tool of this greater power. Indeed, science is naïvely unaware of the extremely unequal and dangerous nature of its partnership with asceticism: “no! This ‘modern science’ — let us face this fact! — is the *best* ally the ascetic ideal has at present, and precisely because it is the most unconscious, involuntary, hidden, and subterranean ally!”²¹ In order for science to resist the demands of the ascetic ideal, it must first realize that it is subject to those demands — and should it choose to resist or negate the ascetic ideal, science would also be choosing to undermine the very conditions of its existence.

Having explored some of the dimensions of Nietzsche’s critique of nineteenth-century scientific nihilism in general, I now wish to turn to the specific example of biological science. In *Ecce homo*, Nietzsche laments that “scholarly oxen have suspected me of Darwinism”.²² To counter this charge, Nietzsche mounts an extensive cultural critique of Darwin’s ideas. Thus in the *Genealogy* Nietzsche marvels at how “the Darwinian beast and the ultramodern unassuming moral milksop who ‘no longer bites’ politely link hands”.²³ Again, the implication here is that science — in this case, Darwinian science — has a hidden agenda, the agenda of the ascetic ideal and its morality. Nietzsche calls into question the cultural values promoted by Darwin; given his understanding of scientific nihilism, it is not surprising that Nietzsche saw the values of Darwinism as empty and meaningless.

Like many nineteenth-century critics of Darwin, Nietzsche attacked the mechanisms by which Darwin accounted for evolution. Nietzsche writes in a note from the *Will to power*: “Against Darwinism. — The utility of an organ does not explain its origin; on the contrary! For most of the time during which a property is forming it does not preserve the individual and is of no use to him, least of all in the struggle with external circumstances and enemies.”²⁴ This principle of utility for survival, of course, is the central mechanism by which Darwin explained the continued improvement of species. Nietzsche also attacks Darwin’s other evolutionary mechanism, sexual selection: “One has so exaggerated the selection of the most beautiful that it greatly exceeds the drive to beauty in our own race! In fact, the most beautiful mate with utterly disinherited creatures, and the biggest with the smallest. We almost always see males and females take advantage of any chance encounter, exhibiting no selectivity whatsoever.”²⁵

We may wish to ask at this point what, exactly, motivated Nietzsche’s hostility towards Darwinian evolution. This hostility may be traced to two main factors. The first has to do with the fact that Darwin’s theory was in direct contradiction to Nietzsche’s own understanding of the development of human society; the second has to do with the political uses to which Darwinism was put in late nineteenth-century Germany. I will first consider the former. Darwin’s *Descent of man* involves a detailed description of the way in which evolution, particularly social evolution, has supposedly produced better and better human societies (with Victorian England, of course, being the paramount society in Darwin’s mind). Nietzsche was very strongly opposed to this model of social development. Nietzsche wrote in 1888: “I always see before me the opposite of that which Darwin and his school see or *want* to see today: selection in favour of the stronger, better-constituted, and the progress of the species. Precisely the opposite is palpable: the elimination of the lucky strokes, the uselessness of the more highly developed types, the inevitable dominion of the average, even the *sub-average* types.”²⁶ This is crucial to Nietzsche’s view of society: rather than a continual improvement through the mechanisms of natural and sexual selection, Nietzsche saw denigration and decay. It was Nietzsche’s firm belief that nineteenth-century society represented not the high point of evolutionary development but the low point of social deterioration. Modern society for Nietzsche was exhausted, nihilistic, hostile to life; he could not view his century as the proud, triumphant era of Darwinian evolution achieved. He writes: “I see on top and surviving everywhere those who compromise life and the value of life. — The error of the school of Darwin becomes a problem to me: how can one be so blind as to see so badly at *this* point?”²⁷ If Darwin was right, the nineteenth century represented the zenith of human development. Nietzsche could not accept this. He believed instead that “the species do *not* grow in perfection: the weak prevail over the strong again and again, for they are the great

majority — and they are also more *intelligent*. Darwin forgot the spirit (that is English!); *the weak have more spirit*.”²⁸

We must recall here Nietzsche's idea of the slave revolt. Central to Nietzsche's understanding of modern morality was his belief that the *weak* of an earlier time triumphed over the strong and acted to institute their morality of weakness as the dominant ethic of human society. Nietzsche felt that this contradicted Darwinian theory. According to Darwinism as Nietzsche understood it, it should not even be possible for the weak to triumph over the strong, since by definition, that which survives and triumphs is the strong. Yet in Nietzsche's understanding of things, not only had the weak put themselves on top, they had managed to stay there. “Objection to Darwinism. The means the weak employ to keep themselves on top have become instincts, ‘humanity’, ‘institutions’ — ”²⁹ According to Nietzsche, two thousand years of human social evolution had produced not the triumphant society of Darwin, but a society where weakness, sickness, and hostility to life were the rule.

Nietzsche seems to be unaware here of Darwin's concept of the “primal horde”, which held that prehistoric humans lived together, under the rule of a despotic patriarch.³⁰ Although this idea eluded Nietzsche, it did have a profound impact on other German thinkers, most notably Sigmund Freud. Freud used the idea of the horde to construct a hypothetical historical event in which the younger males of the horde rose up to kill the primal “father” — the earliest example of Oedipal rage.³¹ This rebellion of the weaker members of the horde against the “strong” (the primal father) looks quite like Nietzsche's slave revolt. Perhaps, then, Darwinism does contain a way to explain the dominance of weakness in a society; at least, the horde hypothesis as Freud developed it seems to account for this. Nietzsche, however, seized upon what he viewed as the dominant strand of Darwinian theory, namely that part of the theory which described a general evolutionary progression towards superior forms, i.e. towards stronger species.

Nietzsche writes in the *Will to power*: “‘Useful’ in the sense of Darwinist biology means: proved advantageous in the struggle with others. But it seems to me that the feeling of increase, the feeling of becoming stronger, is itself, quite apart from any usefulness in the struggle, the real progress: only from this feeling does there arise the will to struggle — ”³² This is an extremely interesting passage, for although Nietzsche continues to be critical of Darwinian theory here, he retains the idea of progress, and suggests that forces might be acting on humanity to propel us towards some higher state. Of course, Nietzsche strongly disagreed with Darwin about the nature of this progress and about the mechanisms through which it acted. For Nietzsche, it was not the struggle for survival that led to progress, but the “feeling of increase, the feeling of becoming stronger”. This is essential, because it is here that we begin to see that Nietzsche's idea of progress, far from being tied to any Darwinian notion of evolution, revolved instead around the concept of the will to power.

Nietzsche felt that the will to power could account for the triumph and institutionalization of what he called “weakness”, as Darwin’s theory could not. Contemporary theorists often agree. Thus Steven Schwartz argues that “strict adaptationism will do okay explaining morality (and the explanation will be very different from will to power); but strict adaptationism is going to have a difficult time explaining such apparently nonadaptive human endeavors as religion, metaphysical philosophy, art and aesthetics, not to mention nuclear physics. Here is where the will to power theory seems to have the advantage.”³³ Alistair Moles suggests that the will to power represents a much more fundamental drive than the struggle for survival: “Nietzsche points out that creatures in the advance of life ... are non-conservative and creative. They dominate; they make changes; they do not try to preserve, not even themselves. So Nietzsche denies that the primal tendency of living creatures is to struggle for survival. Their more basic tendency is to seek to maximize their levels of power.”³⁴

Nietzsche writes in a note from the *Will to power*: “that will to power in which I recognize the ultimate ground and character of all change provides us with the reason why selection is not in favour of the exceptions and lucky strokes: the strongest and most fortunate are weak when opposed by organized herd instincts, by the timidity of the weak, by the vast majority.”³⁵ This expresses the fundamental difference between the will to power and evolution by natural selection, as Nietzsche understood it: the latter presupposes that the “lucky strokes”, the “strongest and most fortunate” will thrive and prosper. The will to power makes no such guarantee. Rather, those “exceptions” which exhibit the will to power seem rare and delicate; they are easily susceptible to opposition by that antithesis of will to power, the “herd”, which is Nietzsche’s pejorative term for the unexceptional masses of humanity. As Walter Kaufmann aptly puts it, Nietzsche

has in mind the ‘fortunate accidents’ — Socrates or Caesar, Leonardo or Goethe: men whose ‘power’ gives them no advantage in any ‘struggle for existence’ — men who, even if they outlive Mozart, Keats, or Shelley, either leave no children, or in any case no heirs. Yet these men represent the ‘power’ for which all beings strive — for the basic drive, says Nietzsche, is not the will to preserve life but the will to power — and it should be clear how remote Nietzsche’s ‘power’ is from Darwin’s ‘fitness’.³⁶

To be “powerful” in the Nietzschean sense is to be brilliant, but that brilliance does not endure and will not necessarily be transmitted to posterity.

The second major factor which accounts for Nietzsche’s hostility to Darwinist thought has to do with the politics of Darwinism in Imperial Germany. In the *Will to power*, Nietzsche writes: “*Anti-Darwin*. The domestication of man: what definite value can it have? or has domestication in general any definite value? — There are grounds for denying the latter.”³⁷ When Nietzsche speaks here of “domestication”, he is referring to the values of the “herd”, the mob. His rejection

of “herd values” included an attack on mass politics. In particular, Nietzsche was concerned with the use of Darwinism by liberals, socialists and nationalists.

The link between Darwin's ideas and liberal or socialist political thought may seem unusual to the twentieth-century mind, which often equates “social Darwinism” with theories of eugenics and right-wing political agendas. However, Paul Weindling points out that when Europeans first began to consider the political implications of Darwinism, Darwin's theory was more often associated with emancipatory politics than with the politics of racism or nationalism.³⁸ It is essential to realize that in the nineteenth century, Darwin's ideas were used at least as often by the political left as they were by the right. David Hull suggests that liberals and radicals in nineteenth-century Europe took Darwinian evolution to imply that political systems could evolve as readily as could species.³⁹ Alfred Kelly points out that the use of Darwinism by liberals and leftists was particularly notable in nineteenth-century Germany; he argues that there Darwinism became a “pseudopolitical ideological weapon”, first for progressive elements of the middle class who were frustrated by the failures of the 1848 revolution, and later for the working class as “popular Marxism in disguise”.⁴⁰ Kelly notes that this use of Darwinism by the political left contained a strong materialist component; this new materialistic Darwinism, which demanded social as well as species evolution, became a potent weapon of political subversion.⁴¹ The use of Darwinism by the German left — and particularly by Marxists — occurred at both high theoretical levels and at the level of popular Marxism. Friedrich Engels, for example, began to “Darwinize” Marxist theory as early as the 1870s, and the important Marxist theoretician Karl Kautsky arrived at Marxism via Darwinism.⁴² At least as important as the “conversion” of leading Marxist intellectuals to Darwinism, however, was the fact that substantial elements of the working class began to embrace a popular Darwinism in Germany.⁴³ After all, as Kelly aptly puts it, “most popular Darwinism taught rationality, struggle, skepticism of Christianity, and the inevitability of change — all virtues in the eyes of socialists”⁴⁴

Although a thorough consideration of Nietzsche's political philosophy is beyond the scope of this paper, a few remarks on his attitude towards liberalism and socialism are in order here. One particularly interesting facet of Nietzsche's political thought is the equation he drew between liberal and socialist ideas. In *Human all too human*, for example, he writes: “you wealthy bourgeois who call yourselves ‘liberal’, admit to yourselves that it is the desire of your own heart that you find so fearful and threatening in the socialists, though in yourselves you consider them inevitable, as though they were something quite different.”⁴⁵ Here Nietzsche is hinting that the inner spirit of socialism is much the same as that of liberalism, and that what drives them is secretly similar. He expands on this theme in a note from the *Will to power*: “socialism is merely a means of agitation employed by individualism: it grasps that, to attain anything, one must

organize oneself to a collective action, to a ‘power’. But what it desires is not a social order as the goal of the individual but a social order as a means for making possible many individuals.”⁴⁶ Here Nietzsche seems to be suggesting that the emphasis on the rights, freedom and dignity of the individual which is characteristic of certain varieties of socialism (e.g. the early Marxism embodied in the 1844 Manuscripts or in parts of the “German Ideology”) is not really very different from liberal individualism.

For Nietzsche, the problem with liberal and socialist individualism was that both emphasized “herd values”. Thus Nietzsche writes in the *Genealogy of morals* of “the mendacious slogan of *ressentiment*, ‘supreme rights of the majority’” and opposes to this a “rapturous counterslogan ‘supreme rights of the few!’”⁴⁷ Liberal ideology claimed to guarantee the right of anyone who demonstrated perseverance and hard work to enjoy the fruits of that labour; socialism sought to promote equal economic rights for all through a revision of the class structure. Both belief systems thus stood in direct opposition to what Georg Brandes called Nietzsche’s “aristocratic radicalism”, a term which Nietzsche himself approved. The term “aristocratic” is perhaps a bit misleading in this context, since Nietzsche’s politics had little if anything to do with the traditional landed European élite, of whom he was often quite contemptuous. Rather, Nietzsche’s élite was that select group which was able to transcend the limits of modern humanity; for Nietzsche, liberalism and socialism were both perfect examples of those limits. Nietzsche writes in *Twilight of the idols* that “the human being who has *become free* — and how much more the *spirit* who has become free — spits on the contemptible type of well-being dreamed of by shopkeepers, Christians, cows, females, Englishmen, and other democrats. The free man is a *warrior*.”⁴⁸ This is a clear indictment of political liberalism and the *laissez faire* economic system associated with it, a system cherished by “shopkeepers”, particularly in England. Liberal ideology, which promised economic success to anyone who successfully competed in the free market, was very much contrary to the spirit of “aristocratic radicalism”, which promised spiritual triumph to those few who were able to give up liberalism, capitalism, and all other trappings of modernity.

For Nietzsche, socialism represented if anything an even clearer statement of the egalitarian, levelling ideals of modernity than did liberalism: “whom do I hate most among the rabble of today? The socialist rabble, the chandala apostles, who undermine the instinct, the pleasure, the worker’s sense of satisfaction with his small existence — who make him envious, who teach him revenge. The source of wrong is never unequal rights but the claim of ‘equal’ rights.”⁴⁹ Again we see here the critique of “equal rights” as a levelling force, this time coupled with a direct attack on socialists as rabble-rousing demagogues. Interestingly, Nietzsche’s critique targeted the German socialist in particular: “the reason the German socialist was the most dangerous was that he was driven by no *definite*

need; he suffered from not knowing what he wanted; thus, even if he achieved a great deal, he would languish from desire even in the midst of plenty just like Faust, though presumably like a very plebeian Faust."⁵⁰ One might also argue that the German socialist was most dangerous in Nietzsche's mind because it was *this* socialist who had learned to wield the weapon of Darwinism most effectively.

Nietzsche's critiques of liberalism and socialism, combined with the unfortunate appropriation of his ideas by the Nazis, have led some commentators to raise the disturbing possibility that his politics might represent a kind of right-wing nationalism. However, it is difficult to reconcile the image of Nietzsche as a German nationalist with his frequent and vindictive attacks on the German culture and people. In the first of his *Untimely meditations*, Nietzsche claims that "in Germany there no longer exists any clear conception of what culture is".⁵¹ Nietzsche goes on to issue a stern warning: "the philistine become a visionary — that is the unheard-of phenomenon that distinguishes Germany today."⁵² He is referring specifically here to David Strauss, but the implication is that German culture as a whole is deteriorating. To be sure, a certain nationalistic interpretation of this is possible. Nietzsche might be arguing here for the creation of a stronger, more worthwhile Germany. But other passages suggest that what he is talking about is not a brief, correctable aberration in the German spirit but rather something much more fundamental. He writes in *Human, all too human*: "the truly unendurable ... fail to notice they lack *freedom of taste and spirit*. But precisely this is, according to Goethe's well-considered opinion, *German*."⁵³ Nietzsche's works are filled with remarks like this, in which he dismisses the worth of the German nation in a single sentence. Nietzsche did, of course, admit that once there was a time of genius in German culture, but he felt that this time had long since irretrievably passed. "The Germans — once they were called the people of thinkers: do they think at all today? The Germans are now bored with the spirit, the Germans now mistrust the spirit; politics swallows up all serious concern for really spiritual matters. *Deutschland, Deutschland über alles* — I fear that was the end of German philosophy."⁵⁴ Here Nietzsche's critique of nationalism returns with all its force: nationalism meant the end of thought and culture, and for Nietzsche, that was very much like the end of life.

Nietzsche's hostility to nationalist politics grew as he developed towards intellectual maturity. Peter Bergmann notes that Nietzsche came of age during Bismarck's rise to power, and that like many other young men of his era, Nietzsche affirmed the German nation state as a student.⁵⁵ To be sure, Nietzsche admired Bismarck's disdain for party politics and parliamentary regimes, but he also found the legislative content of Bismarck's imperial programme abhorrent. As Keith Ansell-Pearson notes, we must understand the mature Nietzsche's political thought "in the specific context in which [he] articulates his opposition to the development of German *Reichspolitik* under Bismarckian nationalism

and statism".⁵⁶ The mature Nietzsche could not endorse Bismarck's nationalist *Reich*, and the kind of aristocratic élite Nietzsche imagined was radically different from Bismarck's *Junkers*. Richard Weikart has made the interesting and persuasive argument that there was in fact an intimate connection in late nineteenth-century Germany between nationalism and liberalism, and that Darwinism was used to defend both, often simultaneously:

From the earliest expressions of Social Darwinism in the 1860s until the turn of the century, numerous German scholars used the Darwinian theory to defend individualist economic competition and laissez faire, others emphasized a collectivist struggle for existence between societies, while *most upheld both simultaneously*. A synthesis of individualism and collectivism had great appeal to German liberals in the 1860s and 1870s, since the long-standing twin ideals of German liberalism were individual liberty and German national unity.⁵⁷

Small wonder, then, that Nietzsche, a philosopher who was highly conscious of the dangers of Darwinism, would emerge as a critic of Darwinist political thought in its liberal, socialist or nationalist forms.

I wish to turn now to Nietzsche's critique of that other great English evolutionary theorist, Herbert Spencer. First, however, a few words are in order regarding Spencer's place in the tradition that has come to be known as "social Darwinism". As Peter Bowler has ably demonstrated, it is quite misleading to refer to Spencer as a "social Darwinist". The tendency to do so is perhaps ascribable to the fact that it was Darwinism, when combined with the insights of Mendelian genetics, that eventually formed the evolutionary synthesis that is such an important part of contemporary biology. But in the nineteenth century, this was hardly a foregone conclusion. Indeed, even many scientists who were sympathetic to evolutionary models rejected the Darwinian mechanism of natural selection. Many of these scientists, including Spencer, preferred a Lamarckian model, in which the inheritance of acquired characteristics explained evolution. Indeed, as Bowler points out, even Darwinism — at least in its early, flexible form — included a Lamarckian component as well as the mechanism of natural selection.⁵⁸ As the Darwinians acted to purge their theory of Lamarckian elements, however, Lamarckians such as Spencer were forced to turn against Darwinism "to show the inadequacy of the selection theory in order to retain a role for acquired characters. [Spencer's] arguments were seen as a central platform of the new, more militant neo-Lamarckianism."⁵⁹

This raises several interesting questions: what was it about Lamarckianism that so appealed to Spencer? Why was he so adamant about retaining the inheritance of acquired characteristics in his theory? The answer lies, I think, in the fact that Lamarckianism provided a much closer fit with certain elements of

social policy which were very dear to Spencer than did Darwinism. As Bowler notes in *The eclipse of Darwinism*, “Spencer felt that individuals must learn how to adapt to their social environment, and that they would then teach their children the benefits of experience. A policy of *laissez faire* was essential because it was only the constant threat of misery that would keep people up to the mark in an ever-developing society. Free enterprise did not eliminate the unfit — it forced everyone to acquire fitness.”⁶⁰ The inheritance of acquired characteristics was thus fundamental to Spencer’s understanding of *laissez faire* capitalism. If Spencer wished to maintain a liberal political ideology — as he clearly did — then he needed to maintain the fundamental liberal precept that economic success is available to anyone. In Lamarckian terms, Spencer’s liberalism required him to hold that the characteristics associated with success in the free market — industriousness, competitiveness, and so on — could be acquired and then transmitted to future generations. A strict Darwinism would not admit of this possibility; to a strict Darwinist, someone who was born economically unfit would remain unfit. Natural selection would see to it that this person remained in poverty. As Bowler puts it in *The non-Darwinian revolution*, for Spencer, “the unfit individual is not congenitally unfitted to his environment; he is merely temporarily out of phase with it. His suffering is not a prelude to extermination, but an encouragement to improve himself and hence to become fitter.”⁶¹

Spencer, then, was not a Darwinist, social or otherwise, and no one in the nineteenth century who was aware of the major debates in biology would have mistaken him for one. This did not mean, however, that Spencer was immune to the kinds of cultural critiques which Nietzsche levelled against Darwin and the Darwinists. Although Darwin and Spencer accounted for evolution by substantially different mechanisms, Nietzsche saw a number of distinct cultural similarities between the two. Nietzsche writes in his *Nachlaß* (notebooks): “The value of altruism is not the result of science; rather the men of science let themselves be led astray by predominant drives, until they believe that science validates their instincts! *cf.* Spencer.”⁶² According to Nietzsche, scientists like Spencer were trying to follow their instincts as they carried out their scientific activity. Indeed, Nietzsche suggests that for a supremely self-confident scientist like Spencer, the practice of science itself represented the culmination of a basic human drive for knowledge. For Nietzsche, however, science as it was practised by men like Spencer was an example of instinct gone horribly wrong: “that science is possible in this sense that it is cultivated today is proof that all elementary instincts, life’s instincts of self-defence and protection, no longer function.”⁶³ Nietzsche felt that when scientists like Spencer found in science a vindication of their instinct, they were actually responding to a false feeling; true instinct and true value really had nothing to do with contemporary science, since that science represented the “hostility to life” characteristic of the ascetic

ideal. Nietzsche felt that by equating science with instinct, Spencer made himself a decadent, i.e. someone who celebrated the values of modernity rather than condemning them as contrary to true instinct. The implication, of course, is that any society which allowed a decadent such as Spencer to prescribe morality would itself become hopelessly decadent. Nietzsche writes in the *Gay science*: “take, for example, that pedantic Englishman, Herbert Spencer. What makes him ‘enthuse’ in his way and then leads him to draw a line of hope, a horizon of desirability — that eventual reconciliation of ‘egoism and altruism’ about which he raves — almost nauseates the likes of us; a human race that adopted such Spencerian perspectives as its ultimate perspectives would seem to us worthy of contempt, of annihilation!”⁶⁴ Spencerian decadence translated into social reality would result, Nietzsche believed, in the worst kind of society; it would have all the problems of a society based on Darwinian science, and more.

Central to Nietzsche’s attack on Spencerian cultural decadence was his critique of Spencer’s morality. This was even more of a problem for Nietzsche than was Darwin’s morality, since Spencer focused more on the concerns of human society. Thus in one of his most vicious attacks, Nietzsche writes in *Ecce homo*: “to demand that all should become ‘good human beings’, herd animals, blue-eyed, benevolent, ‘beautiful souls’ — or as Mr Herbert Spencer would have it, altruistic — would deprive existence of its great character and would castrate men and reduce them to the level of desiccated Chinese stagnation. — *And this has been attempted! — Precisely this has been called morality.*”⁶⁵ This “morality” was, for Nietzsche, a great danger to humanity; it was opposed to all the life-affirming values that Nietzsche loved. It was based, furthermore, on a fundamentally mistaken notion of what morality is and how it comes about. Nietzsche writes in the *Nachlaß*: “Spencer confuses the ‘how should we act?’ system of morality with the origin of morality. The lack of understanding of causality continues to be important to the end.”⁶⁶ It was not just Spencer who suffered from this misunderstanding; Nietzsche felt that Spencer’s confusion was indicative of a larger confusion that existed throughout English society, and perhaps through European society in general. In a note from the *Will to power*, Nietzsche writes: “shopkeeper’s philosophy of Mr Spencer; complete absence of an ideal, except that of the mediocre man.”⁶⁷ Here Nietzsche is trying to tie Spencer’s decadent moral philosophy to what he scornfully dismisses as the English “shopkeeper’s society”; we may read this as a critique of nineteenth-century England as the era of liberal *laissez faire*, the age in which, much to Nietzsche’s dismay, many of Spencer’s beliefs had already become institutionalized.

We saw that an important part of Nietzsche’s critique of Darwin was his claim that Darwin’s ideas of evolution, especially social evolution, were contrary to what Nietzsche thought to be the actual conditions for the advancement

and improvement of the human species. Nietzsche makes a similar claim about Spencer. Thus “one places ... ‘adaptation’ in the foreground, that is to say, an activity of the second rank, a mere reactivity; indeed, life itself has been defined as a more and more efficient inner adaptation to external conditions (Herbert Spencer). Thus the essence of life, its *will to power*, is ignored; one overlooks the essential priority of the spontaneous, aggressive, expansive, form-giving forces that give new interpretations and directions.”⁶⁸ Nietzsche believed that Spencer, like Darwin, made the mistake of assuming that evolution was an essentially positive force, leading to greater and greater improvements in the human condition. And again, Nietzsche’s critique is motivated here by a distinct awareness of the implications this “mistake” holds for the possible future growth of humanity. “The conditions under which a strong and noble species maintain itself (regarding spiritual discipline) are the reverse of those which govern the ‘industrial masses’, the shopkeepers *à la* Spencer.”⁶⁹ Here again Nietzsche is criticizing Spencer’s understanding of what makes a healthy society: while Spencer took his Victorian England to be the ideal, Nietzsche saw this kind of society as exactly the opposite, a society of decadence and decay. He therefore once again castigates Spencer’s England as a nation of “shopkeepers”, arguing that contrary to Spencer’s claims, the kind of society that Spencer advocated was precisely antithetical to the development of a “strong and noble species”. When speaking of Spencer’s theory of adaptation, Nietzsche remarks that “it is one such adaptation that Spencer had in mind, that each individual might become a useful tool and also feel like nothing more than this”.⁷⁰ For Nietzsche, this is exactly the wrong course for human development to take. It has nothing to do with the development of a stronger, more noble kind of human; it exhibits no understanding of the will to power.

His critique of Spencer’s developmental theories notwithstanding, Nietzsche did share with Spencer an admiration for Lamarckian principles. In the *Gay science*, for example, Nietzsche denounces “Schopenhauer’s mystical embarrassments and subterfuges in those places where the factual thinker allowed himself to be seduced and corrupted by the vain urge to be the unriddler of the world”.⁷¹ He includes among these “embarrassments and subterfuges” Schopenhauer’s claim that “*development* is mere appearance: he calls Lamarck’s idea ‘an ingenuous but absurd error’”.⁷² Clearly, Nietzsche felt that this Lamarckian theory of development was no error; indeed, Lamarck’s theories contributed quite a lot to Nietzsche’s own ideas. Specifically, Nietzsche suggests that humans will be able to acquire the superior characteristics of the Nietzschean aristocracy, and pass these on to posterity. We must be very careful, therefore, not to mistake Nietzsche’s overt hostility towards Darwin and “Darwinism” for an attack on evolutionary biology in general, since Nietzsche had his own Lamarckian evolutionary theories.

If Nietzsche favoured Lamarckian ideas, and if Spencer is better understood

as a “social Lamarckian” than as a “social Darwinist”, then the obvious question is, what motivated Nietzsche’s severe hostility towards Spencer? The answer lies, I think, in the political uses to which Spencer put his Lamarckianism. In particular, Spencer used Lamarckian theory in the service of a liberal politics which Nietzsche could not and did not support. Thus while Spencer and Nietzsche might have made use of a similar mechanism to explain the development of human society, the cultural and political implications they drew regarding that development could not have been more different.

It can be tremendously dangerous, of course, to favour a biological theory which opposes liberal politics. The variety of anti-liberal biology propagated by the Nazis contributed, for example, to political catastrophe in twentieth-century Germany. Given the fact that the Nazis often cited Nietzsche as their philosophical forefather, it is therefore imperative to examine his biological theory for traces of proto-Nazi racism, and especially antisemitism. We must consider, in short, the possibility that Nietzsche’s rejection of liberal politics, coupled with his desire to create a superior breed of human, laid some of the theoretical groundwork for National Socialist racism. In an interesting discussion of antisemitism in Nietzsche’s writing, Sarah Kofman notes that as he developed the idea of the “overman”, Nietzsche began to propose a hierarchy among individuals, with the superior “overman” at the top, and inferior ascetics at the bottom.⁷³ Kofman suggests that Nietzsche “does not hesitate to establish a veritable ‘apartheid’” between these two types of individuals.⁷⁴ Yet Kofman is careful to emphasize that this segregation is not racially based.⁷⁵ This leads Kofman to conclude that “it is only at the price of an interpretive violence that one can make [Nietzsche] into the father of National Socialism and its racism”.⁷⁶ Of course, interpretive violence was one of the many varieties of violence which the Nazis were only too happy to endorse, but we must not allow ourselves to follow their lead in this matter or in any other. And while we might well wish to suggest that the division of humans into segregated hierarchies is an extremely dangerous project, this does not by any means permit us to conclude that Nietzsche’s hierarchies have antisemitic or racist implications.

Nietzsche attacked Spencer’s goal-oriented Lamarckianism and his liberal politics not in the name of a racist political agenda, but rather as part of a Nietzschean critique directed against the concept of progress which developed during the Enlightenment. This philosophy of progress or teleology was expressed most clearly in the German *Aufklärung* (Enlightenment) tradition by Kant, whose work was tremendously influential in the German biological community. Timothy Lenoir notes that “in a penetrating analysis of the different structure of causal relations obtaining between inorganic phenomena and the sort of mechanisms encountered in biological explanations, Kant argued that the life sciences must ultimately rest on an explanatory framework uniting the principles of both teleology and mechanism”.⁷⁷ Nietzsche was quite hostile to

Kantian teleology; for him, Kant's faith in progress and goals represented a new Christian theology, justified and defended in secular, "scientific" terms. Lenoir notes that the ultimate failure of teleological thought in the Western scientific tradition can be ascribed in part to the "unfortunate confusion of teleology with natural theology".⁷⁸ It seems likely that Nietzsche made precisely this confusion. For Nietzsche, teleology would immediately have conjured visions of Kantian theology. As I argued above, Nietzsche saw a clear link between such theology and science, both of which he viewed as servants of the ascetic ideal. Nietzsche felt that Spencer, whose faith in human progress and liberal politics seemed to be very much in the spirit of the *Aufklärung*, fell into the same trap as the German biologists. Spencer was for Nietzsche the worst kind of ascetic: one who used neo-Kantian teleology in the service of an ascetic science which Nietzsche could simply never accept.

This is the heart of Nietzsche's critique of Darwin and "Darwinism". For Nietzsche, nihilism had dramatically exposed the post-Enlightenment values of modernity as empty and meaningless. Among those values Nietzsche numbered the naïve faith in progress which had dominated the natural and social sciences since Kant; most especially, Nietzsche denounced the political views which accompanied this faith. His reservations about the political implications of Darwin and "social Darwinism" provided the strongest motivations for his attacks on those philosophies. In particular, as we have seen, Nietzsche wanted nothing to do with the *laissez faire* liberalism of Herbert Spencer. And the use of Darwin and "Darwinism" by socialists provoked, if anything, an even more vindictive Nietzschean critique. Nietzsche's rejection of German nationalism, however, means that we must not suppose that he made these critiques in the name of some right-wing political agenda. His critiques represent something deeper than that: an attempt to move beyond politics, or at least beyond all modern manifestations of political thought. This is what Nietzsche meant when he called himself "the last anti-political German". The political choices available to the nineteenth-century European were, for Nietzsche, completely inadequate. Any biological theory which could be mobilized in defence of these political views — as Darwinism and Spencer's Lamarckianism clearly could be, and were — therefore invited a strong Nietzschean critique. Ironically, of course, Nietzsche was himself hardly able to resist the temptation to invoke his own brand of Lamarckian theory in defence of his own concept of human progress. This only underscores the pervasive influence that evolutionary thought had on the nineteenth-century mind. But when we consider Nietzsche's reservations about certain varieties of evolutionary theory in the light of his aggressive denunciation of nationalism, it becomes equally clear that Nietzsche was seriously concerned about the excesses of German mass politics. These excesses, too often cloaked in an aura of "respectable" biological science, would lead to political disaster in twentieth-century Germany.

REFERENCES

1. Friedrich Nietzsche, *The birth of tragedy and The case of Wagner*, transl. by Walter Kaufmann (New York, 1967), 18.
2. Friedrich Nietzsche, *Beyond good and evil*, transl. by Walter Kaufmann (New York, 1966), 21–22.
3. Friedrich Nietzsche, *The will to power*, transl. by Walter Kaufmann and R. J. Hollingdale, ed. by Walter Kaufmann (New York, 1968), 339.
4. *Ibid.*, 333.
5. Thomas Kuhn, *The structure of scientific revolutions* (Chicago, 1970).
6. Friedrich Nietzsche, *The gay science*, transl. by Walter Kaufmann (New York, 1974), 266.
7. Alexander Nehamas, *Nietzsche: Life as literature* (Cambridge, Mass., 1985), 65.
8. Friedrich Nietzsche, *Human, all too human*, transl. by R. J. Hollingdale (Cambridge, 1986), 302.
9. Nietzsche, *op. cit.* (ref. 3), 68.
10. *Ibid.*, 9.
11. *Ibid.*, 12.
12. *Ibid.*, 12.
13. *Ibid.*, 13.
14. *Ibid.*
15. *Ibid.*
16. Friedrich Nietzsche, *Twilight of the idols*, in *The portable Nietzsche*, ed. and transl. by Walter Kaufmann (New York, 1984), 463–563, p. 485.
17. Friedrich Nietzsche, *On the genealogy of morals and Ecce homo*, transl. by Walter Kaufmann and R. J. Hollingdale, ed. by Walter Kaufmann (New York, 1969), 152.
18. *Ibid.*, 116.
19. *Ibid.*, 147.
20. *Ibid.*, 153.
21. *Ibid.*, 155.
22. Nietzsche, *op. cit.* (ref. 17), 261. The debate about whether or not Nietzsche may be considered a Darwinist has continued well into the twentieth century. Thinkers who label Nietzsche a Darwinist include Martin Heidegger (see Heidegger, *Nietzsche*, ed. by David Farrell Krell (San Francisco, 1987), iii, 41 and 101), and more recently, John T. Wilcox (see Wilcox, *Truth and value in Nietzsche: A study of his metaethics and epistemology* (Ann Arbor, 1974), 146).
23. Nietzsche, *op. cit.* (ref. 17), 21.
24. Nietzsche, *op. cit.* (ref. 3), 343.
25. *Ibid.*, 362.
26. *Ibid.*, 364.
27. *Ibid.*, 365.
28. Nietzsche, *op. cit.* (ref. 16), 523.
29. Nietzsche, *op. cit.* (ref. 3), 217.
30. Lucille B. Ritvo, *Darwin's influence on Freud: A tale of two sciences* (New Haven, Ct, 1990), 99.
31. *Ibid.*, 101.
32. Nietzsche, *op. cit.* (ref. 3), 344.

33. Stephen P. Schwartz, "The status of Nietzsche's theory of the will to power in the light of contemporary philosophy of science", *International studies in philosophy*, xxv (1993), 85–92, p. 90.
34. Alistair Moles, *Nietzsche's philosophy of nature and cosmology* (New York, 1990), 142.
35. Nietzsche, *op. cit.* (ref. 3), 364.
36. Walter Kaufmann, *Nietzsche: Philosopher, psychologist, antichrist*, 4th edn (Princeton, N.J., 1974), 329.
37. Nietzsche, *op. cit.* (ref. 3), 361.
38. Paul Julian Weindling, *Darwinism and Social Darwinism in Imperial Germany: The contribution of the cell biologist Oscar Hertwig (1849–1922)* (New York, 1991), 16.
39. David Hull, "Darwinism and historiography", in Thomas F. Glick (ed.), *The comparative reception of Darwinism* (Austin, Texas, 1972), 388–402, p. 394.
40. Alfred Kelly, *The descent of Darwin: The popularization of Darwinism in Germany, 1860–1914* (Chapel Hill, N.C., 1981), 5.
41. *Ibid.*, 19.
42. *Ibid.*, 124.
43. *Ibid.*, 144.
44. *Ibid.*, 136.
45. Nietzsche, *op. cit.* (ref. 8), 282.
46. Nietzsche, *op. cit.* (ref. 3), 411.
47. Nietzsche, *op. cit.* (ref. 17), 54.
48. Nietzsche, *op. cit.* (ref. 16), 542.
49. Friedrich Nietzsche, *The antichrist*, in *The portable Nietzsche*, ed. by Kaufmann (ref. 16), 565–656, p. 647.
50. Nietzsche, *op. cit.* (ref. 8), 288.
51. Friedrich Nietzsche, *Untimely meditations*, transl. by R. J. Hollingdale (New York, 1991), 5.
52. *Ibid.*, 16.
53. Nietzsche, *op. cit.* (ref. 8), 282.
54. Nietzsche, *op. cit.* (ref. 16), 506.
55. Peter Bergmann, *Nietzsche, "The last antipolitical German"* (Bloomington, Ind, 1987), 30.
56. Keith Ansell-Pearson, "The significance of Michel Foucault's reading of Nietzsche: Power, the subject, and political theory", *Nietzsche-Studien*, 1991, 267–83, p. 268.
57. Richard Weikart, "The origins of Social Darwinism in Germany, 1859–1895", *Journal of the history of ideas*, liv (1993), 469–88, p. 471.
58. Peter J. Bowler, *The eclipse of Darwinism: Anti-Darwinian evolution theories in the decades around 1900* (Baltimore, 1983), 41.
59. *Ibid.*, 42.
60. *Ibid.*, 71.
61. Peter J. Bowler, *The non-Darwinian revolution: Reinterpreting a historical myth* (Baltimore, 1988), 39.
62. Friedrich Nietzsche, *Nietzsche Werke: Kritische Gesamtausgabe*, ed. by Giorgio Colli andazzino Montinari (Berlin, 1967), Part V, i, 720.
63. Nietzsche, *op. cit.* (ref. 3), 44.
64. Nietzsche, *op. cit.* (ref. 6), 334.
65. Nietzsche, *op. cit.* (ref. 17), 329–30.
66. Nietzsche, *op. cit.* (ref. 62), 358.

67. Nietzsche, *op. cit.* (ref. 3), 206.
68. Nietzsche, *op. cit.* (ref. 17), 78–79.
69. Nietzsche, *op. cit.* (ref. 3), 479.
70. Nietzsche, *op. cit.* (ref. 62), 756.
71. Nietzsche, *op. cit.* (ref. 6), 153.
72. *Ibid.*
73. Sarah Kofman, *Le mépris des Juifs: Nietzsche, les Juifs, l'antisémitisme* (Paris, 1994), 71.
74. *Ibid.*, 71–72.
75. *Ibid.*, 72.
76. *Ibid.*, 73.
77. Timothy Lenoir, *The strategy of life: Teleology and mechanics in nineteenth century German biology* (Boston, 1982), 2.
78. *Ibid.*, 272.