**Commanders and Scientific Labourers:**

**Nietzsche on the Relationship between Philosophy and Science**

*Rachel Cristy, King’s College London*

*Department of Philosophy*

*Philosophy Building, Strand*

*WC2R 2ND*

*rachel.cristy@kcl.ac.uk*

**Abstract:** Nietzsche’s attitude toward science is ambivalent: he remarks approvingly on its rigorous methodology and adventurous spirit, but also points out its limitations and rebukes scientists for encroaching onto philosophers’ territory. What does Nietzsche think is science’s proper role and relationship with philosophy? I argue that, according to Nietzsche, philosophy should *set goals* for science. Philosophers’ distinctive task is to ‘create values’, which involves two steps: (1) envisioning ideals for human life, and (2) turning those ideals into prescriptions for behaviour and societal organisation. To accomplish step (2), philosophers should delegate scientists to investigate what moral rules and social arrangements have best advanced this ideal in the past or might in the future.

# **Introduction**

 Nietzsche opens Part VI of *Beyond Good and Evil* (1886), ‘We Scholars’, with a complaint about the state of relations between science and philosophy:

I venture to speak out against an unseemly and harmful shift in the respective ranks of science and philosophy [… Science] now aims with an excess of high spirits and a lack of understanding to lay down laws for philosophy and to play the ‘master’ herself— what am I saying? the *philosopher.* […]

 Finally: how could it really be otherwise? Science is flourishing today and her good conscience is written all over her face, while the level to which all modern philosophy has gradually sunk […] invites mistrust and displeasure, if not mockery and pity. Philosophy reduced to ‘theory of knowledge’, in fact no more than a timid epochism and doctrine of abstinence […] How could such a philosophy — *dominate!* (*BGE* 204)

From this we may gather that Nietzsche thinks philosophy is the rightful ‘master’ that should ‘dominate’ science. In what, though, does this mastery or domination consist? And how far does it extend?

 Nietzsche’s attitude toward science in his mature writings of 1886–7 (*Beyond Good and Evil*, *The Gay Science* Book V, and *On the Genealogy of Morality*) is ambivalent. Despite his trenchant critiques of some aspects of modern science, including the unquestioned faith in the overriding value of truth that motivates some of its most enthusiastic defenders, he frequently expresses admiration for its virtues: its rigorous empiricist methodology, its intellectual integrity, its adventurous spirit (see, e.g., *GS* 293; *TI* III, 3; *A* 47). The recent consensus among scholars[[1]](#footnote-1) is that Nietzsche has a qualifiedly positive regard for science. However, Nietzsche says that when considering the value of anything, ‘the problem “value *for what?*”cannot be examined too subtly’ (*GM* I, Note). I aim to make explicit, first, what exactly Nietzsche thinks science is good *for*; and, second, what he takes to be the proper relationship between science and philosophy that he claims in *BGE* 204 is being violated.[[2]](#footnote-2)

 I will argue that, according to Nietzsche, philosophy is supposed to *set goals* for science. The distinctive task of philosophers is to ‘create values’, which involves two steps: (1) envisioning the ideals that society should realize, and (2) turning those ideals into prescriptions for behaviour and societal organization. Philosophers need scientists’ help to proceed from step (1) to step (2), because scientists — social as well as natural: historians, anthropologists, and psychologists as well as biologists and physiologists — can tell them how various value regimes (encompassing legal and moral codes, family arrangements, economic organisation, and everyday customs) affect the psychology and cultural achievements of their adherents. With a certain ideal for human life in mind, philosophers should delegate scientists to investigate what moral systems and social arrangements were in place when this ideal was most fully realised in the past, or to test hypotheses as to what ways of life might realise it in the future. Philosophers are also entitled to reinterpret the results of the sciences in terms that harmonise with their preferred values, so long as they do not compromise the theories’ predictive accuracy.

# **Philosophers as value-creators**

 In the last few sections of ‘We Scholars’, Nietzsche gives an account of the ‘philosophers of the future’ (*BGE* 210) that he envisions. He ‘insist[s] that people should finally stop confounding philosophical labourers, and scientific people generally, with philosophers’ (*BGE* 211). Philosophers as he understands them are not *primarily* concerned with acquiring knowledge, although many of the ‘preconditions of [their] task’ crucially involve knowledge. They must have experience with being a ‘scientific labourer’ and first-hand knowledge of ‘the whole range of human values and value feelings’ (*BGE* 211). They must also have a ‘passion for knowledge’ and the virtues of the knowledge-seeker, including ‘cleanliness and severity in matters of the spirit’ (*BGE* 210). The philosopher’s ‘task itself’, however, ‘demands something different — it demands that he *create values*’(*BGE* 211). As Nietzsche declares in the section’s rousing conclusion: ‘*Genuine philosophers […] are commanders and legislators:* they say, “*thus* it *shall* be!” They first determine the Whither and For What of man […] Their “knowing” is *creating*, their creating is a legislation, their will to truth is — *will to power*’ (*BGE* 211). As examples of ‘genuine philosophers’, Nietzsche names ‘Heraclitus, Plato, Empedocles’ (*BGE* 204). Nietzsche indicates that Plato has succeeded in reshaping the moral landscape of the world: he assigns Plato credit and blame for the ‘invention of the pure spirit and the good as such’ and labels Christianity ‘Platonism for “the people”’ (*BGE* Preface).

 Nietzsche contrasts genuine philosophers with two types of thinkers who are commonly *called* ‘philosophers’. One group is ‘those hodgepodge philosophers’ of Nietzsche’s day ‘who call themselves “philosophers of reality” or “positivists”’. Nietzsche scoffs that these are ‘at best scholars and specialists themselves’, who ‘resentfully’ deny ‘the masterly task and masterfulness of philosophy’ because they were incapable of performing it (*BGE* 204). One figure Nietzsche names to this category is the outspoken antisemite Eugen Dühring, a frequent target of Nietzsche’s contempt (see *GM* II, 11; III, 14). Stack describes Dühring as an advocate of ‘materialistic positivism’ and ‘strict realism’ who ‘held that human knowledge apprehends reality as it is’, with ‘no ambiguities […] and no room for doubt’ (2005, p. 209 n. 5). Nietzsche may also have in mind mid-nineteenth-century materialists like Moleschott, Büchner, and Vogt who ‘worshipped at the altar of natural science, uncritically seizing upon the latest advances in physiology and chemistry to underpin a crudely materialist and mechanist worldview’, and claimed that ‘in systematising the results and discoveries of the natural sciences, they had finally put an end to philosophy’ or put it in its place as ‘nothing more than the theoretical aspect of the empirical sciences’ (Moore 2004, pp. 7–8; cf. Brinton 1867, p. 176).

 Nietzsche takes a less dim view of the other group of purportedphilosophers: ‘philosophical labourers after the noblemodel of Kant and Hegel’ (*BGE* 211). Their role is to ‘press into formulas […] former value-*positings*, value-creations, which have become dominant and are for a time called “truths”’ (*BGE* 211). Kant and Hegel merely rationalised the prevailing *Christian* morality, stripping it of theological ornamentation and expressing it purely in terms of the basic values at its heart. Although they do not count as genuine philosophers, their ‘preliminary labour’ is useful for philosophers to ‘have at their disposal’, because they can ‘make everything that has happened and been esteemed so far easy to look over, easy to think over’. They distil past value-systems into their core principles or animating spirit, as data for philosophers to consider when evaluating the consequences of adopting various values. Thus they count among the philosopher’s ‘servants, the scientific labourers of philosophy’ (*BGE* 211).[[3]](#footnote-3)

# **Setting goals for scientists**

 On several occasions, Nietzsche issues ‘calls’ for research into social and moral phenomena. Here is one early example:

Anyone who now wishes to make a study of moral matters opens up for himself an immense field for work. […] So far, all that has given colour to existence still lacks a history. Where could you find a history of love, of avarice, of envy, of conscience, of pious respect for tradition, or of cruelty? […]

 The most industrious people will find that it involves too much work simply to observe how differently men’s instincts have grown, and might yet grow, depending on different moral climates. It would require whole generations […] of scholars who would collaborate systematically, to exhaust the points of view and the material […] (*GS* 7)

This passage from Book I of *The Gay Science* (1882) predates the period I am focusing on, but it is representative in the subject matter on which Nietzsche urges research. The research he calls for is generally the kind that would enable a philosopher to accomplish step (2) of value-creation. Nietzsche encourages scholars to investigate the conditions under which various social institutions arise, as well as their consequences for (a) the physical and psychological condition of individuals and (b) cultural production. The philosopher can then evaluate for each set of institutions how well (a) and (b) satisfy their favoured values, and decide on that basis which to establish. The institutions to be studied encompass the fine-grained everyday customs that interest anthropologists and material historians (diet, work schedules, living arrangements: *GS* 7); matters of larger-scale societal organisation that concern political scientists (hierarchical versus egalitarian class structures; see *BGE* 257); religious creeds, practices, and attitudes (*BGE* 45); and the basic values — honour, compassion, freedom, truth, etc. — revered in the society, which are distilled from ordinary moral judgments by ‘philosophical labourers’ like Kant and Hegel (*GS* 7: ‘why is it that the sun of one fundamental moral judgment and main standard of value shines here and another one there?’).

 In 1882, when the first edition of *The Gay Science* was published, Nietzsche seems not to have arrived yet at his mature view on the relationship between philosophy and science. *GS* 7 ends with an open question, which he calls ‘the most insidious question of all’: ‘whether science can furnish goals of action after it has shown that it can take such goals away and annihilate them’. By 1886–7 Nietzsche has answered this question with a resounding ‘no’: science ‘first requires […] an ideal of value, a value-creating power, in the *service* of which it could *believe* in itself—it never creates values’ (*GM* III, 25). Science finds truths about how the world works, which can be translated into instructions for *how to do something*,and *which* questions it prioritises depends on what some agent hopes to *do* with the answers; but science cannot tell people what they should *want* to do. As Nietzsche writes in a note from 1887: ‘the ascertaining of facts […] is fundamentally different from creative positing, from forming, shaping, overcoming, willing, such as is of the essence of philosophy’ (KSA 12:9[48]/ *WP* 605).[[4]](#footnote-4)

 One might object that science is pursued purely for the sake of knowledge, or truth, leaving scientists free to ask any questions at all. But, as Nietzsche points out, this ‘for the sake of knowledge’ already involves the conviction that acquiring as much knowledge as possible is a worthy goal, which is the kind of proposition that science could never discover. ‘[A] philosophy, a “faith”, must always be there first of all, so that science can acquire from it a direction, a meaning, a limit, a method, a *right* to exist’ (*GM* III, 24). Science pursued purely for the sake of truth or knowledge is not science existing independent of philosophical guidance or providing its own foundation. Rather, it is science guided by the *philosophical* view that truth is supremely valuable: ‘the unconditional will to truth’, whose motivation, justification, and value for human life Nietzsche questions ruthlessly (e.g., in *BGE* 1, *GS* Preface 4, *GS* 344, and *GM* III, 24–27). Nietzsche contends that the valuable investigative tools of science would be better employed in the service of a philosophical vision that advances individual and cultural achievement in a way that the unconditional will to truth does not.

 Here is a later example of Nietzsche issuing a call for scientific research into moral values and institutions:

I take the opportunity provided by this treatise to express publicly and formally a desire […] that some philosophical faculty might advance *historical* studies *of morality* through a series of academic prize-essays—perhaps this book will serve as a powerful impetus in this direction. […] I suggest the following question: it deserves the attention of philologists and historians as well as that of professional philosophical scholars:

 *‘What light does linguistics, and especially the study of etymology, throw on the history of the evolution of moral concepts?*’

[…I]t is equally necessary to engage the interest of physiologists and doctors […] The question: what is the *value* of this or that table of values and ‘morality’? should be viewed from the most divers perspectives; for the problem ‘value *for what?*’ cannot be examined too subtly. Something, for example, that possessed obvious value in relation to the longest possible survival of a race […] would by no means possess the same value if it were a question, for instance, of producing a stronger type. The well-being of the majority and the well-being of the few are opposite value-viewpoints: to consider the former *a priori* of higher value may be left to the naïveté of English biologists. — *All* the sciences have from now on to prepare the way for the future task of the philosophers: […] the solution of the *problem of value*,the determination of the *order of rank among values.* (*GM* I, Note)

 Nietzsche’s remark about ‘English biologists’ is aimed not only at Darwin, but also at thinkers like Herbert Spencer, who in his influential book *The Data of Ethics* (1879) attempted to extrapolate an ethical theory from Darwin’s theory of evolution. Nietzsche is talking about Spencer specifically when he says:

It follows from the laws of rank-ordering that scholars, insofar as they belong to the spiritual middle class, can never catch sight of the really great problems and question marks; moreover, their courage and their eyes simply do not reach that far—and above all […] their inmost assumptions and desires that things might be such and such, their fears and hopes all come to rest and are satisfied too soon. (*GS* 373)

What Nietzsche means is that scholars rest content with the mistaken ‘*a priori*’assumption that the prevailing morality of their time answers all questions of value. For nineteenth-century Englishmen like Spencer, this was the utilitarian variant of Christian altruistic morality, which says that the highest good is the happiness of the greatest number, inflected with a bourgeois capitalist ethos which claims that hedonic self-interest is both the fundamental human motivation and the greatest force for progress. This is what leads Spencer to set as the ‘horizon of desirability’ the ‘eventual reconciliation of “egoism and altruism”’ (*GS* 373). But Nietzsche sees how paltry this goal is: that it would produce human beings who aspire to nothing beyond universal comfort (the ‘last men’ of Zarathustra’s Prologue; cf. *BGE* 228). The contemptibility of the society that would result from following that morality to its ultimate goal raises for Nietzsche a question that scholars like Spencer are incapable of seeing: the question of the *value* of that prevailing morality; whether there are better, nobler, farther-reaching ideals around which society might be structured.

# **Nietzsche: philosopher or scientist?**

 All this inevitably raises the question: which side of the line between philosophers and ‘scientific’ or ‘philosophical labourers’ does Nietzsche take himself to be on? Throughout *BGE* he speaks of the ‘new philosophers’ as ‘coming up’ (*BGE* 2, 44) rather than presently existing; he asks: ‘Are there such philosophers today? Have there been such philosophers yet? *Must* there not be such philosophers?’ (*BGE* 211). In the Note to *GM* I, is Nietzsche calling on ‘his fellow scholars and academics’ (Loeb 2019, p. 96) or his ‘servants’ (*BGE* 211)? The *Genealogy* itself is a kind of ‘historical study of morality’, and *GM* I, 4–5 makes a start at answering the question Nietzsche proposes in the Note. What kind of ‘impetus’ for these called-for studies is the *Genealogy*: an exemplar, or a programmatic prologue? For all Nietzsche’s talk of the importance for a genealogy of morals of ‘what is documented, […] the entire long hieroglyphic record […] of the moral past of mankind’ (*GM* Pref. 7), Nietzsche doesn’t provide much documentation for his claims about human history — nor could he, for his claims about human *pre-*history. Often one might reasonably suspect him of the same sort of ‘gazing around haphazardly in the blue’ (*GM* Pref. 7) of which he accuses Paul Rée and the English genealogists of morality (*GM* I, 1).

 Leiter claims that Nietzsche is a *methodological* naturalist (M-Naturalist) of the ‘Methods Continuity’ type (2002, pp. 6–7): that ‘Nietzsche’s actual philosophical practice’ (p. 6, n. 10), involves ‘construct[ing] philosophical theories that are continuous with the sciences […] in virtue of […] their employment and emulation of distinctively scientific ways of looking at and explaining things’ (p. 5). Accordingly, Leiter says, ‘Nietzsche, the philosophical naturalist, aims to offer theories that explain various important human phenomena […] in ways that […] are *modelled* on science in the sense that they seek to reveal the causal determinants of these phenomena, typically in various physiological and psychological facts about persons’ (p. 8). Leiter acknowledges that Nietzsche ‘reserves the label “philosopher”’ as a sort of ‘honorific’ ‘for those who discharge a different kind of task than that of the naturalist: those who create or legislate values’ (p. 6, n. 10). He also implies that Nietzsche does undertake to earn this honorific and ‘utilize the information provided by “physiologists and doctors” as to which values might contribute to […] “producing a stronger type” (*GM* I: Note)’ (2002, p. 68). But Leiter maintains that ‘most of Nietzsche’s books are devoted […] to the M-Naturalistic project’, and in particular that the *Genealogy* offers explanations ‘continuous with both the results and methods of the sciences’ (p. 11). This reading suggests that in the *Genealogy*, Nietzsche the philosopher (in the honorific sense) is getting down in the mud with his scholarly servants and initiating the scientific researches needed to help him create the new values that will realise his vision.

 Loeb (2019) argues that Nietzsche considers himself to be performing the function of a different type of non-philosopher: not a natural or social scientist, but ‘a philosophical labourer along the lines of Kant and Hegel’ (Loeb 2019, p. 95). Loeb deems Nietzsche’s ‘genealogical project’ to be ‘exactly the kind of investigating, comparing, explaining, abbreviating, and codifying of past values that he says is needed as a kind of preparatory service to some future genuine philosopher who will succeed in creating new values’ (p. 96), whom he calls Zarathustra and says ‘*must come one day*’ (*GM* II, 24). However, Loeb acknowledges that Nietzsche ‘believes he is doing something different and more advanced than philosophical laborers like Kant and Hegel’ because he possesses a ‘self-conscious understanding of his task’ as ‘herald and precursor to the philosophical value-creators’ (2019, pp. 97–8). He is, in the terms of Zarathustra’s speech ‘The Three Metamorphoses’, ‘the lion-spirited philosopher who goes to war against the ancient and mightiest dragon named “Thou shalt!”’ (2019, p. 99). But like the lion in this parable, Nietzsche cannot create new values; by destroying previous values, he can only create ‘freedom […] for new creation’ for the benefit of the child who is yet to come (*Z* I, ‘Metamorphoses’).

 It remains ambiguous whether Nietzsche intended, in either completed or planned works, to *create* new values or merely to gesture toward their shape, and whether ‘Zarathustra’ is a future individual whom Nietzsche only heralds (which *GM* II, 24–25 implies) or a mouthpiece for Nietzsche himself (as *EH* ‘Destiny’ suggests). I cannot resolve those issues here. However, I will make the case that we should see Nietzsche as doing something decidedly different than the scientists and scholars he calls on in sections like *GS* 7 and *GM* I, Note, and thus different from the ‘M-Naturalistic project’ Leiter ascribes to him. I will also argue that we need not take the primarily factual rather than normative content of his genealogical investigations as indicating that he is a ‘scientific labourer of philosophy’ rather than a genuine philosopher.

 First of all, Nietzsche’s historical accounts in the *Genealogy* seem too sketchy to count as the thorough historical, linguistic, physiological, and psychological investigations into moral phenomena that he calls for. Moreover, the ever-present *evaluative* elements — his interjected sighs of despair (*GM* I, 12) and longing (II, 24), cries of horror (II, 22) and disgust (I, 11, 14; III, 14, 22) — point away from interpreting Nietzsche’s project as that of a scientific researcher. Not only would these elements be out of place in a scientific treatise, but Nietzsche has indicated that he considers science an inappropriate tool for assessing matters of meaning and value. It is beyond science’s purview to make claims about the *absolute* value of something (rather than its instrumental value for an existing goal), or to suggest an ultimate ideal toward which humanity should strive — as Nietzsche does, even if the details of his life-affirming, power-oriented ethics remain hazy. Nietzsche is indubitably not a ‘scholar’ in the sense in which he applies the term to Herbert Spencer — a member of ‘the spiritual middle class’ who ‘can never catch sight of the really great problems’ (*GS* 373) — or a ‘scientific person’ as described in *BGE* 206: ‘a non-noble [*unvornehme*] type of person’ with an ‘instinctive sense of the mediocrity of their type’. But if we assume that when he speaks of ‘the noble [*edlen*] model of Kant and Hegel’, he means that such ‘philosophical labourers’ (unlike most scholars) belong to a *noble type*, albeit one that ranks below and serves ‘genuine philosophers’ (*BGE* 211), Loeb might be correct to place Nietzsche in that category.

 But Nietzsche’s historical and critical undertakings might be seen as his efforts to perform another task he assigns to *genuine* philosophers: ‘being the bad conscience of their time’, ‘applying the knife vivisectionally to the chest of the very *virtues of their time*’, in order to point the way to‘a *new* greatness of man […], a new untrodden way to his enhancement’ (*BGE* 212). To be able to perform this task, philosophers need broad *knowledge* about the value standards that have been adopted in different times and places, and the possibilities for human greatness. Philosophers must ‘pass through the whole range of human values and value feelings’ during the course of their lives, in order ‘to be *able* to see with many different eyes and consciences, from a height and into every distance, from the depths into every height, from a nook into every expanse’ (*BGE* 211).

 The philosopher’s distinctive skills as regards *acquiring* knowledge involve achieving breadth of perspective: the ability to ‘employ a *variety* of perspectives and affective interpretations in the service of knowledge’ (*GM* III, 12),[[5]](#footnote-5) and to take in and interpret vast *expanses* of time and space in order to perceive large-scale patterns of variation and development. *GS* 380 explains the rarity of this skill:

If one would like to see our European morality for once as it looks from a distance, and […] measure it against other moralities, past and future, then one has to proceed like a wanderer who wants to know how high the towers in a town are: he *leaves* the town. ‘Thoughts about moral prejudices’, if they are not meant to be prejudices about prejudices, presuppose a position *outside* morality, some point beyond good and evil to which one has to rise, climb, or fly […] the question is whether one really *can* get up there.

 This may depend on manifold conditions. […] One has to be *very light* to drive one’s will to knowledge into such a distance and […] to create for oneself eyes to survey millennia […]

This echoes Nietzsche’s remarks in *BGE* 205 about the difficulty with which the philosopher ‘attains his proper level, the height for a comprehensive look [*Überblick*], for looking around, for looking *down*’. It is this ability to distil millennia of history into their overarching patterns — as well as their experience having ‘stood on all those steps on which their servants, the scientific labourers of philosophy, remain standing’ (*BGE* 211) — that qualifies the philosophers to assign research tasks to scientists: it enables them to identify what more specific questions need to be asked and answered in order to choose the shape of the next several millennia of human history.

 So, did Nietzsche climb the final step to become a genuine philosopher, or did he succumb to one of the ‘dangers for a philosopher’s development’ that he warns of in *BGE* 205 — ‘allow[ing] himself to be detained somewhere to become a “specialist”’, or losing the ‘self-respect’ needed to ‘command or *lead* in the realm of knowledge’? As we have seen, Nietzsche does issue ‘commands’ to scholars; though perhaps ‘philosophical labourers’ are entitled to do so as a sort of foreman or deputy to philosophers, the highest-ranked of their scholarly servants. In order to write the *Genealogy*, Nietzsche must have ‘attain[ed…] the height for a comprehensive look’ (*BGE* 205) and ‘create[d] for [him]self eyes to survey millennia’ (*GS* 380); but is that skill exclusive to *genuine* philosophers, or also available to some ‘philosophical labourers’ (perhaps including Hegel)? Is it essential to philosophical labourers that they ‘remain within pre-existing “value-*positings*”’ and ‘press [them] into formulas’ as disciples rather than dissidents — in Kant and Hegel’s case, of ‘Christianized Platonism’ (Lampert 2001, p. 198) — which Nietzsche emphatically does not?

 In either case, Nietzsche assumes for himself a position above *most* scientists and scholars: while he may regard himself as a servant to a future value-creating ‘Zarathustra’, he still regards lesser scholars as his servants, his ‘helpers and hounds’ in the hunt for knowledge (*BGE* 45), and feels entitled not only to assign them research tasks, but also, as I shall discuss in the next section, to suggest reinterpretations of their theories for the purpose of advancing *ethical* as well as epistemic aims.

# **Interpretive pointers and the autonomy of science**

We have established that Nietzsche thinks philosophers should dictate which *questions* scientists pursue. But this raises a further question: What kind of control does Nietzsche think philosophers have over the *answers* science arrives at? Are philosophers also entitled to critique or revise the analyses offered by scientists? How much *autonomy* should science have from philosophy?

 First of all, philosophers have no interest in *falsifying* the results of science, at least not for themselves; Nietzsche certainly thinks that value-creators need *accurate* knowledge of causal relations in order to choose the right means to their ends — and that it is possible, and usually disastrous, to have *false* beliefs on this score (see *TI* VI: ‘The Four Great Errors’). This is why, in *GS* 335, Nietzsche says that to the end of ‘the *creation of our own tables of what is good*’,

we must become the best learners and discoverers of all that is 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.

In *The Antichrist*, Nietzsche describes Christianity as a value-system constructed in ignorance of natural necessities. He implies that one of the many reasons he considers Christianity inferior to Hinduism is that, while both propagate a ‘holy lie’ among their followers (*A* 55), Christian priests do not allow *themselves* to see the falsity of their world-explanation in terms of ‘sin’ and ‘redemption’ (*A* 49). The priests, too, have ‘faith’ in the sense of ‘not *wanting* to know what is true’ (*A* 52); they lie in the sense of ‘wishing *not* to see something that one does see’ (*A* 55). By contrast, Nietzsche claims, the ‘holy lies’ involved in ‘the law of Manu’ are ‘the means of assuring authority for a *truth*’ that ‘sums up the experience, prudence, and experimental morality of many centuries’ (*A* 57).

 Whether Nietzsche thinks philosophers are entitled to strategically *falsify* the results of science for mass consumption is unclear. He *does* make clear, however, that where it would leave the predictive accuracy of a scientific account unchanged or even improve it, philosophers (or almost-philosophers) *can* suggest modifications — in the name not only of truth, but also of promoting their ideals. Nietzsche does this several times in *BGE*, each time suggesting his concept of *will to power* as an alternative to some current model in the sciences (or, in *BGE* 36, to *any* current model). Here are two examples:

Physiologists should think before putting down the instinct of self-preservation as the cardinal instinct of an organic being. A living thing seeks above all to *discharge* its strength — life itself is *will to power*; self-preservation is only one of the indirect and most frequent *results.*

 In short, here as everywhere else, let us beware of *superfluous* teleological principles — one of which is the instinct of self-preservation […] Thus method, which must be essentially economy of principles, demands it. (*BGE* 13)

[…] ‘nature’s conformity to law’, of which you physicists talk so proudly […] — why, it exists only owing to your interpretation and bad ‘philology’. It is no matter of fact, no ‘text’, but rather only a naively humanitarian emendation and perversion of meaning, with which you make abundant concessions to the democratic instincts of the modern soul! ‘Everywhere equality before the law; nature is no different in that respect, no better off than we are’ […] But as said above, that is interpretation, not text; and somebody might come along who, with opposite intentions and modes of interpretation, could read out of the same ‘nature’, and with regard to the same phenomena, rather the tyrannically inconsiderate and relentless enforcement of claims of power […] but he might, nevertheless, end by asserting the same about this world as you do, namely, that it has a ‘necessary’ and ‘calculable’ course, *not* because laws obtain in it, but because they are absolutely *lacking*, and every power draws its ultimate consequences at every moment. (*BGE* 22)

 In *BGE* 13 and 36, Nietzsche appeals to an *internal* methodological guideline of science to support his reinterpretation: ‘economy of principles’. But in *BGE* 22, he does not disguise that his interests are *ethical* rather than merely epistemic; and he even accuses physicists of allowing their own ethical prejudices — the ideals set by earlier philosophers — to push them toward a particular model of explanation. Nietzsche acknowledges that he sees ‘claims of power’ where democratically-inclined physicists see ‘laws’ *because* he has ‘opposite intentions’, and hopes to promote his vision of a spiritual hierarchy that distinguishes those with a ‘noble’ character from the mediocre majority. But he emphasises that these disparate readings are made ‘with regard to the same phenomena’, and that his proposed alternative would ‘end by asserting the same about this world as you do, namely, that it has a “necessary” and “calculable” course’ (*BGE* 22) — i.e., adopting it would not impede physicists’ ability to predict natural events. Even though it would be an instance of the naturalistic fallacy to justify an ethical system by pointing to the organisation of the natural world, adopting the will-to-power model in physics and biology would reinforce Nietzsche’s social ideals, rhetorically and psychologically, by mirroring or harmonising with them in a different sphere of existence.

 Nietzsche’s vague, allusive suggestions raise two inevitable questions: (1) What, exactly, would an evolutionary biology or a physics built around the ‘will to power’ principle look like? And (2) would such theories actually do as well as existing ones in accounting for and predicting observed data? The second question could only be answered through a long-term experiment involving a sizeable scientific community conducting research based on a will-to-power theory of physics or biology. I can only gesture at an answer to the first question, because to a great extent it would depend on how that large-scale experiment turned out, but I will briefly sketch what Nietzsche might have had in mind with each hypothetical model.

 First, to his remarks on biology in *BGE* 13: Nietzsche suggests that the two basic instincts that supposedly lead to the perpetuation of a species or a lineage — the drives to self-preservation and reproduction — should be reduced to one, ‘will to power’, which Nietzsche characterises here as the impulse of a living thing ‘to *discharge* its strength’. What exactly Nietzsche means by ‘the will to power’ is a much-contested issue, but the unifying core is the desire, impulse, or tendency to overcome resistance in order to change the world in some distinctive way, to leave a lasting mark.[[6]](#footnote-6) Reproduction can certainly be considered this way: it consumes the organism’s resources, but also makes a change in the world that will, ideally, last beyond the progenitor’s own lifespan. Some of the activities associated with the survival instinct can also be read this way, including the growth of a tree, or the destruction of other life for the purpose of either nutrition or eliminating competition.[[7]](#footnote-7) But it is unclear how other survival-related activities, such as a prey animal’s instinct to flee, can be explained under this rubric.

 The will-to-power model fares better when we consider levels of selection other than the organism. Nietzsche might well have thought of *species* as units of selection, considering his speculation in *GS* 1 that *every* human impulse and behaviour, however destructive for the individual, serves ‘the most amazing economy of the preservation of the species’. In this early (1882) passage, Nietzsche is still thinking of *preservation* of the species as the goal; later he places more emphasis on *development*. In *Thus Spoke Zarathustra* (1883–4) he presents the ideal of the ‘overman’ as a quasi-evolutionary development of the human species,[[8]](#footnote-8) and emphasises that humankind as we know it would have to perish: ‘Man is a rope, tied between beast and overman […] what can be loved in man is that he is an *overture* and a *going under*’ (*Z* I, P 4). Recall, also, the distinction he draws in the Note to *GM* I:‘Something […] that possessed obvious value in relation to the longest possible survival of a race […] would by no means possess the same value if it were a question […] of producing a stronger type’. A will-to-power biology would measure the success of a species in terms of the persistence of its *legacy* — the changing lineage it gives rise to — rather than its *existence* as such; its success consists in its ‘self-overcoming’, its *replacement* by something new and better able to thrive under changing conditions, rather than its *survival* in its current form. In fact, evolutionary biology has developed in this direction as its understanding of the mechanisms of evolution has progressed. Consider, for example, the recent discovery that dinosaurs did not actually go extinct: we just call some of them ‘birds’ now (see Singer 2015). The idea championed by Dawkins (1976) of the *gene* rather than the organismas the fundamental unit of selection is also friendly to will-to-power biology, considering that a gene secures its persistence in a lineage through the contribution that its *expression* as a protein — the way a gene ‘*discharge*[*s*] its strength’, in Nietzsche’s terms — makes to the organisms that are its vehicle; ‘self-preservation is only one of the indirect and most frequent *results*’ (*BGE* 13).

 There is more textual elaboration elsewhere in Nietzsche’s corpus of the will-to-power physics proposed in *BGE* 22. Other commentators have done extensive work to flesh out Nietzsche’s ‘physics’ (which is set forth mainly in work never published during Nietzsche’s lifetime)[[9]](#footnote-9); I aim only to sketch the conceptual contrast between the physics Nietzsche proposes and the established physics of the late nineteenth century (as he saw it), and to illuminate the connections between Nietzsche’s scientific suggestions and his ethical aims. His objection to the notion of ‘nature’s conformity to law’ — that it expresses ‘the democratic instincts of the modern soul’ and the value of ‘equality before the law’ — provides some clues. It seems that Nietzsche is objecting to a broadly *Cartesian* or *Newtonian* model, according to which all matter has the same minimal properties — extension and (for Newton) mass — but is intrinsically inert, and requires transcendent laws of nature, imposed by God or (somehow) by the universe, to dictate how it moves and interacts with other matter. Nietzsche’s talk of the ‘enforcement of claims of power’ suggests that his proposed alternative involves reviving the Aristotelian or Leibnizian notion of *powers* inhering in things[[10]](#footnote-10) — or rather in ‘centres of force’, since Nietzsche repudiates materialistic atomism (*BGE* 12) and even casts doubt on the notion of a ‘thing’ (see *GS* 110; *TI* VI, 3), and hopes to explain the world wholly in terms of the interactions of forces (see *KSA* 13:14[79] and [186]/ *WP* 634–6, all from 1888).

 A note from 1885–6 both clarifies Nietzsche’s suggestion in *BGE* 22 and illuminates its connection to his ethical aims:

‘Regularity’ in succession is only a metaphorical expression, *as if* a rule were being followed here; not a fact. In the same way ‘conformity with a law’. We discover a formula by which to express an ever-recurring kind of result: we have therewith discovered no ‘law’ […] That something always happens thus and thus is here interpreted as if a creature always acted thus and thus as a result of obedience to a law or a lawgiver, while it would be free to act otherwise if it were not for the ‘law’. But precisely this thus-and-not-otherwise might be inherent in the creature, which might behave thus and thus, not in response to a law, but because it is constituted thus and thus. All it would mean is: something cannot be something else, cannot do now this and now something else, is neither free nor unfree but simply thus and thus. *The mistake lies in the fictitious insertion of a subject.* (*KSA* 12:2[142]/ *WP* 632)

Parts of this passage clearly anticipate the idea of *GM* I, 13:

To demand of strength that it should *not* express itself as strength […] is just as absurd as to demand of weakness that it should express itself as strength. A quantum of force is equivalent to a quantum of drive, will, effect — more, it is nothing other than precisely this very driving, willing, effecting, and only owing to the seduction of language (and of the fundamental errors of reason that are petrified in it) which conceives and misconceives all effects as conditioned by something that causes effects, by a ‘subject’, can it appear otherwise. For just as the popular mind separates the lightning from its flash and takes the latter for […] the operation of a subject called lightning, so popular morality also separates strength from expressions of strength, as if there were a neutral substratum behind the strong man, which was *free* to express strength or not to do so.

The fragment’s links to both *BGE* 22 and *GM* I, 13 makes very clear how Nietzsche’s proposed re-conception of physics relates to his ambition to reshape the ethical landscape. His *primary* aim in *GM* I, 13 is not to put forward the metaphysical thesis that there is no subject separate from and causally responsible for its actions. It is, rather, to criticise one of the premises of slave morality: that there is a free subject, with no distinctive characteristics, that can at any time choose to be either ‘good’ (passive, peaceable) or ‘evil’ (belligerent, domineering). Both Cartesian-Newtonian physics and Christian ethics involve a ‘neutral substratum’ — whether matter as ‘mere extension’ or the pure willing subject — governed by a physical or moral law imposed from above. That the moral subject, unlike the physical subject, has the capacity to disobey the law is merely incidental; the mirroring between the models gives ‘laws of nature’ a normative cast that suggests to the imagination that matter, too, could have done otherwise than obey the laws (perhaps if God had instituted different laws, or momentarily broken them for the sake of a miracle). It is because of this porousness between the physical metaphor and the ethical model that Nietzsche wants to eliminate the substratum in both models and characterise the entities therein (bodies or persons) as consisting in their tendency to behave in certain ways: as the quantity of force they have to exert, in the physical or ethical domain, and the direction (or ‘purpose’) toward which they exert it (see *GS* 360).

 Some of Nietzsche’s remarks indicate that science can rule out some interpretations on its own, simply because they fit poorly with the facts. *BGE* 12 is a good example:

As for materialistic atomism, it is one of the best refuted theories there are, and in Europe perhaps no one in the learned world is now so unscholarly as to attach serious significance to it […] — thanks chiefly to the Dalmatian Boscovich: he and the Pole Corpernicus have been the greatest and most successful opponents of visual evidence so far. For while Copernicus has persuaded us to believe, contrary to all the senses, that the earth does not stand fast, Boscovich has taught us to abjure the belief in the last part of the earth that ‘stood fast’ — the belief in ‘substance’, in ‘matter’, in the earth-residuum and particle-atom: it is the greatest triumph over the senses that has been gained on earth so far.

Boscovich was an eighteenth-century mathematician and natural philosopher — in modern terms, a scientific theorist. He was not a *philosopher* in Nietzsche’s sense, or even a ‘philosophical labourer’ like Kant or Hegel (though the line between physical and metaphysical theorising in his time was blurry at best). According to Boscovich, what appears as matter is made up of indivisible, immutable, non-extended mathematical points exerting attractive force at relatively large distances and repulsive force at very small distances (Ansell-Pearson 2000, p. 13). Like Nietzsche, he favoured abandoning the ‘*Klümpchen-Atom*’ (literally, ‘little clump-atom’) in favour of *centres of force*.

 Boscovich’s motivation seems to have been entirely theoretical rather than, like Nietzsche’s, part of a campaign to transform society’s ethical as well as theoretical worldview. The same is probably true of Copernicus, the other thinker Nietzsche mentions in *BGE* 12, who nonetheless *succeeded* in revolutionising the worldview of modern Europeans — including not only their understanding of astronomy, but their self-understanding: ‘Since Copernicus, man […] is slipping faster and faster away from the centre […] into a “*penetrating* sense of his nothingness”’ (*GM* III, 25). Nietzsche *does* allow that scientific specialists can arrive at certain views and reject others on the basis of purely epistemic concerns such as consistency and adequacy to the evidence. Philosophers, according to Nietzsche, always seek in characteristic ways to shape the world around them in accordance with their own needs and values: by *interpreting* it in a certain way, usually without regard for evidence; by promulgating that interpretation in hopes that it will become generally accepted as truth; perhaps even by actively striving to impose their vision on society. By contrast, ‘among scholars who are really scientific people […] you may actually find something like a drive for knowledge, some small, independent clockwork that, once well wound, works on vigorously without any essential participation from all the other drives of the scholar’ (*BGE* 6). In brief, then, science *can* arrive at results of great theoretical and practical import without instruction from philosophers. But Nietzsche would probably say that this is a lucky accident when it happens, and that science would be more fruitful for culture under the guidance of philosophy.

# **Conclusion**

 The creation of new values requires a collaboration between philosophers and scientists. As Schacht puts it, science is ‘a needed partner’ to philosophy in this project; ‘a *junior* partner, in the end, but a partner nonetheless’ (2012, p. 185). Philosophy sets the ends, while science can furnish only means to these ends, not ends of its own. But of course there are facts about causal relations — which scientists *can* find out with no prompting from philosophers, though they may not know what to do with them — and hence facts about means–ends relations; and philosophers need the diligence and careful method of science to ascertain them if they are to realise their desired enhancement of human life and culture.

# **References**

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Primary texts are cited with an abbreviation for the title, Roman numerals for the larger divisions of the text where relevant, and Arabic numerals for the aphorism numbers.

Abbreviations

*A The Antichrist*

*BGE Beyond Good and Evil*

*EH Ecce Homo*

*GM On the Genealogy of Morality*

*GS The Gay Science*

*KSA Kritische Studien-Ausgabe*

*WP The Will to Power*

*Z Thus Spoke Zarathustra*

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1. Including Clark (1990), Cox (1999), Janaway (2007), and Schacht (2012). [↑](#footnote-ref-1)
2. Bamford (2019) has made explicit the relationship that Nietzsche favours in the ‘free spirit’ works of 1878–82, also including *The Gay Science* Book V (1887) as a resumption of the project. My focus is on the mature works of 1886–7, which express a different view. [↑](#footnote-ref-2)
3. Cf. Loeb 2019, p. 88. [↑](#footnote-ref-3)
4. Translations of Nachlass fragments are by Kaufmann and Hollingdale, in *The Will to Power* (Random House, 1967). [↑](#footnote-ref-4)
5. See Alfano 2019, pp. 143–5. [↑](#footnote-ref-5)
6. The ‘leave a lasting mark’ aspect comes from my own reading; Reginster (2006), Katsafanas (2013), and Hatab (2019) emphasise the ‘overcoming resistance’ aspect. [↑](#footnote-ref-6)
7. *BGE* 36: ‘suppose all organic functions could be traced back to this will to power and one could also find in it the solution of the problem of procreation and nourishment’. [↑](#footnote-ref-7)
8. As Loeb clarifies, the ‘overman’ or ‘superhuman’ would not develop from contemporary humans by means of natural selection, ‘but rather by an action he calls “self-overcoming” (*Selbstüberwindung*)’ (2019, p. 100); hence *quasi*-evolutionary. [↑](#footnote-ref-8)
9. E.g., Ansell-Pearson (2000), Poellner (1999), Small (1986), Stack (1981). [↑](#footnote-ref-9)
10. Leibniz 1989 (1695), pp. 118ff. is instructive regarding the difference in conception between himself (whom he aligns with Aristotle) and the Cartesians (aligned with Democritus). [↑](#footnote-ref-10)