

Nietzsche: Science and Truth

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Gutting has argued that the great French philosophies of the twentieth century can be read primarily as different responses to the problems opened up in Nietzsche's thought¹. Derrida, Foucault and Deleuze have each written important texts on Nietzsche, in each case taking one of Nietzsche's concepts as the major springboard for their own work (the attempt to escape metaphysics, the procedure of genealogy, the philosophy of immanence). These French philosophers can be seen as taking up Nietzsche's challenge, developing further some of the paths only hinted at in his own work. For example, it could be claimed that Nietzsche's claim that 'the "apparent" world is the only world, the "true" world is just *added to it by a lie...*'² only finds its full philosophical expression in Deleuze: in Nietzsche it remains a provocative thought rather than a fully worked-out ontology. Lacan might seem at first to be an exception to this narrative: Lacan almost never mentions Nietzsche, and is always disparaging when he does. I will argue on the contrary that, despite Lacan's minimal engagement with Nietzsche, the two thinkers are much closer than they may appear, in ways which will consequently problematise the 'official' readings of Nietzsche (whether Anglo-American or 'poststructuralist').

Our aim will not be simply to describe Nietzsche's influence on Lacan, rather it will be to use Lacan's conceptual apparatus to re-read some of the 'difficult' or 'problematic' aspects of Nietzsche's thought. Nietzsche's thought, particularly on this topic, undergoes far-reaching changes over the course of

¹ Gutting, 2010, chapter 5: 'How they are all Nietzscheans'.

² Nietzsche, 1997, "Reason" in Philosophy', 2. Where reference is made to Nietzsche's aphoristic texts, I refer to the number of the aphorism, rather than the page.

his writing. ‘Science’ at some points stands for something invaluable ‘with regard to everything one will afterwards do’³, and at others for mere dogmatic anti-aesthetic thinking⁴. The aim of this essay is not so much to give a textually accurate description of Nietzsche’s views, but to explore some interesting open questions that emerge from his writings. For most of the quotes discussed, it would probably be possible to find in another text the opposite view being stated. But this need not overly concern us, since our focus here is on the examination and development of some of Nietzsche’s concepts, working through some of the difficulties and paradoxes he has left us. Our specific focus will be the question of science: what does the famous anti-metaphysician think is the relationship between science and truth?

As is made absolutely clear by statements like ‘physics... is only an arrangement and interpretation of the world’⁵, Nietzsche is an *antirealist* with respect to science. Nietzsche has a number of reasons for taking up this position, but we will focus on one in particular: his belief that in science, ‘we operate only with things that do not exist: lines, planes, bodies, atoms, divisible time spans, divisible spaces’⁶. Nietzsche’s point is that these objects do not have any reality ‘in themselves’: there is no ‘pure’ line or atom in the Platonic sense. Again, Nietzsche has a number of reasons for saying this: his conception of truth as ‘perspective’⁷, his valorisation of flux and becoming over static being⁸, his rejection of the idea that ‘there are identical things’⁹. But, perhaps most importantly, it is his suspicion that ‘it is still a *metaphysical faith* upon which our faith in science rests’¹⁰ that prevents him from subscribing to this position. The straightforwardly realist belief that the objects studied by physics are the ultimate ‘foundation’ of reality cannot but remain a *metaphysical* idea. He sees it as an unjustified presupposition that, as Cox puts it, ‘truth is “already there” waiting to be discovered’¹¹. Nietzsche mocks the naive scientific man thus:

³ Nietzsche, 1974, 256.

⁴ Nietzsche, 2000, 18.

⁵ Nietzsche, 2003, 14.

⁶ Nietzsche, 1974, 112.

⁷ See *ibid.* 354.

⁸ See Nietzsche, 1996a, 16.

⁹ See *ibid.* 19.

¹⁰ Nietzsche, 1974, 344.

¹¹ Cox, 1999, 49.

He has concluded that so far as we can penetrate here – from the telescopic heights to the microscopic depths – everything is secure, complete, infinite, regular, and without any gaps¹².

To assume that reality is ‘out there’ in a fully constituted state, with relations, identities, and mathematical structures already built into it is to anthropomorphise, to naively assume that our own human categories must also be valid for reality itself: ‘to a world which is *not* our idea the laws of numbers are wholly inapplicable: these are valid only in the human world’¹³.

In fact, according to Jean-Claude Milner, the revolution brought about by modern (i.e. post-Galileian) science allowed us to dispense with precisely this notion that reality is ‘in itself’ mathematically constituted¹⁴. The difference between ancient and post-Galileian science, Milner argues, lies in their respective understandings of ‘nature’: for ancient science, ‘nature’ designated ‘the order of the world that exists independently of man’s conventions’, whereas for Galileo it needed only to designate ‘the empirical object of science’¹⁵. Thus for the ancients (and, we could also say, according to spontaneous common sense), the object of science had to be ‘really real’: if we accurately describe how something functions, and can correctly predict how it will continue to function, then we understand what it is in its essence. Modern mathematical science, by contrast, only ‘requires *the mathematisation of the object*; it does not require that the object be a mathematical essence’¹⁶. In other words, we can analyse something scientifically without necessarily committing ourselves to any ontological claims about how the object is ‘in itself’. This is the reason for the proliferation of different ‘regional’ sciences: it is possible for disciplines like economics, anthropology and psychology to exist as legitimate sciences, even though very few people think their specific objects (laws of human behaviour) actually ‘exist’ in any straightforward sense. To put this yet another way, modern science no longer has to rely on the distinction between ‘natural law’ and ‘conventional law’ (*physis/thesis* – ‘what is according to natural necessities and what is according to man’s conventions’¹⁷). Because ‘nature’ now means simply ‘the object of science’, ‘mere’ human conventions can be made the object of inquiry just as easily as can ‘real’ physical phenomena.

¹² Nietzsche, 2010, 120.

¹³ Nietzsche, 1996a, 19.

¹⁴ Milner, 2002, cited in Chiesa, 2010, 163-164.

¹⁵ Ibid. p. 163.

¹⁶ Milner, 2002, 289, cited in ibid., 164 (my italics).

¹⁷ Ibid.

This ‘de-ontologised’ idea of modern science looks like a promising step towards a Nietzschean ‘antirealist’ position. However, this conception still remains an *epistemology* of science, a historically-specific description of the break associated with the Galileian revolution, rather than an ‘absolute’ account of the relation between science and reality. Even if modern science allows us to create new disciplines, investigate new kinds of objects and so on, this does not tell us anything about the *metaphysical status* of the scientific object itself: as Milner suggests, we can ‘do’ science whilst remaining completely agnostic about the actual nature of the object under consideration (this is why, unlike in pre-Galileian times, science and metaphysics are able to function completely independently of one another). As famously scathing as he was about metaphysics, Nietzsche has arguably even harsher words to say about any philosophy which remains at the level of epistemology. He calls it a ‘timid epochism and abstinence doctrine’, which does not even have the boldness to ‘get over the threshold’ and ‘painfully denies itself the right of entry’ to the proper philosophical questions: it is ‘philosophy at its last gasp, an end, an agony, something that arouses pity’¹⁸. In other words, even an intricate study of the scientific method will remain ‘merely’ epistemological: what is needed here is an account of the relationship between science and ‘the real’.

The Reality of the Illusion

What, then, is Nietzsche’s metaphysical position *vis-a-vis* science? In order to answer this question, we will have to take a brief detour through Nietzsche’s conception of truth, first asking the related question: how does Nietzsche conceptualise the *truth* of scientific statements? The most interesting text, for our purposes, is *On Truth and Lies in an Extra-Moral Sense*, where Nietzsche develops his position in a very unexpected (and often missed) direction. At the end of the sentence where Nietzsche famously states that ‘truths are illusions we have forgotten are illusions’¹⁹, he makes the following interesting analogy:

¹⁸ Nietzsche, 2003, 204.

¹⁹ Nietzsche, 2010, 117.

[truths] are metaphors that have become worn out and have been drained of sensuous force, coins which have lost their embossing and are now considered as metal and no longer as coins²⁰.

Nietzsche's point is clear: coins 'in themselves' are simply round pieces of metal. However, once we endow them with the property of being coins (marked by their embossing), they cease to be mere pieces of metal and 'magically' become money, the universal equivalent. This takes place not because of any inherent property, but only through (what on Marx's analysis is) a '*salto mortale*'²¹, a 'leap of faith' on the part of the users. As a result of this 'false semblance', there nevertheless comes about a real change in the way money functions: this is the famous analysis in chapter 4 of *Capital* where the original process of C-M-C transforms itself into the apparently 'irrational' M-C-M. Where money originally functioned in a simple, 'utilitarian' way to ease transactions in a barter system, it eventually comes to have a logic and dynamics of its own, completely independent of this original function. Nietzsche is of course not referring to Marx's theory of money, but it is a useful analogy; Nietzsche is making exactly the same point about the functioning of language. On Nietzsche's evolutionary account, language first arose because it was 'useful'; man does not have 'horns' or 'sharp teeth' like the other animals and so instead used language to better his chances of survival²². This original creation is, as in Marx, a seemingly 'magical' moment, which, once it has taken place, brings about all the 'metaphysical subtleties and theological niceties'²³ that Nietzsche spends the rest of his essay exposing.

To push the similarity further, we can say that, just as the illusions brought about by our 'false' understanding of money have a massive material effect in the world, according to Nietzsche, the 'errors' that are generated by our systematic misunderstandings of the nature of language also bring about real material changes. As Nietzsche puts it in a crucial passage (which strongly resonates with Milner's description of modern science):

Everything which distinguishes man from the animals depends on this ability to volatilize perceptual metaphors in a schema, and thus to dissolve an image into

²⁰ Ibid.

²¹ Marx, 1990, 200.

²² Nietzsche, 2010, 115, but see also Nietzsche, 1974, 110-111.

²³ Marx, 1990, 163.

a concept. For something is possible in the real of these schemata which could never be achieved with the vivid first impressions²⁴.

This formulation emphasises the deeply paradoxical nature of Nietzsche's antirealism. Certainly, words are always falsifications, never truly capturing the essence of things. However, this inevitable transformation of an original image into a 'false' concept nevertheless opens up an entirely new space, marked by Nietzsche with his curious phrase 'the real of these schemata'. This new space is, according to Nietzsche, nothing other than *human culture itself*, that which distinguishes us from the animals. Nietzsche evidently does not think that this conceptual view totally 'captures' the real (he certainly thinks that it engenders a number of dangerous beliefs which he spends most of the rest of his essay denouncing), but, and this will turn out to be an important formulation, this conceptualisation does nevertheless *have real consequences*.

We see a fuller development of this idea in *Gay Science* 58, which Nietzsche begins by proclaiming that 'what things are called is incomparably more important than what they are'²⁵. In this aphorism, Nietzsche once again states a very strong antirealist position; his starting point is that the name of a thing as well as the usual properties we assign it are merely conventional, 'thrown over things like a dress and altogether foreign to their nature'. In other words, Nietzsche is against Russell's descriptivism (which connects the name of a thing to the description that speakers would give of it), and for Kripke's thesis that a name is bestowed in an 'initial baptism', subsequently acting as a 'rigid designator', so that the name remains even if all the predicates we previously associated with the thing change²⁶. The name does not point to the essence of the thing, only to the tautological fact that it has been named in such a way. Nietzsche's next point is that this initially 'false' designation gives rise to a movement where 'what at first was appearance becomes in the end, almost invariably, the essence, and is effective as such'²⁷. However, just as we saw before, Nietzsche's position is considerably more interesting than *just* being anti-essentialist: he asks us 'how foolish it would be to suppose that one only needs to point out this origin and this misty shroud of delusion in

²⁴ Nietzsche, 2010, 118.

²⁵ Nietzsche, 1974, 58.

²⁶ Kripke, 1981, 96-97. For further elaboration of this point, see the classic discussion in Žižek, 2008, 97-101.

²⁷ Nietzsche, 1974, 58.

order to *destroy* the world that counts for real, so called “*reality*”²⁸. We can point out reifying, essentialising illusions as much as we like, but this does not stop them from continuing to function. Nietzsche thus concludes with the insight that ‘it is enough to create new names and estimations and probabilities in order to create in the long run new “things”’²⁹. Far from unconditionally denouncing the ‘false’ world, Nietzsche suggests that we make creative use of this peculiar feature of language in order to bring about effects which are ‘really real’.

Truth is a Woman (who does not exist)

How are we to understand this paradoxical position of Nietzsche’s? On the one hand, he tells us that ‘reality’ is an illusion: we are consistently led by language to group unlike things together, thereby giving ourselves the false impression that they have an underlying essence. On the other, he fully understands that one cannot simply ‘denounce’ reality; even as ‘false’ it exerts a certain efficiency on whatever ultimately *is* real. We come to a better understanding of these issues, I would suggest, by reading Nietzsche along the lines of Lacan’s formulas of sexuation³⁰. Nietzsche’s position is usually read in what Lacan would have called a ‘male’ way, that is, as making a universal claim to which there is a constitutive exception. This is the well-known problem of self-reference in Nietzsche’s conception of truth, nicely formulated by Clark: ‘if it is supposed to be true that there is no truth, then there is apparently a truth after all’³¹. One can only universalise the claim that ‘there is no truth’ by allowing for an exception, which is this statement itself. The usual Nietzschean response to this apparent contradiction is to appeal to different ‘levels’ of truth: for Clark, Nietzsche rejects ‘the existence of

²⁸ Ibid.

²⁹ Ibid.

³⁰ Lacan’s enigmatic formulae are as follows (‘male’ is on the left, ‘female’ is on the right):

$\forall x$	Φx	$\exists x$	$\overline{\forall x}$
$\exists x$	$\overline{\Phi x}$	$\overline{\exists x}$	Φx

For the original formulation, see Lacan, 1999. Whilst there is an important connection between this table and sexual difference, for our purposes we will only be considering the logic of Lacan’s formulae and not their connection to the ‘male’ and ‘female’ subject-positions.

³¹ Clark, 1990, 3.

metaphysical truth... but not truth itself³²; for Danto, Nietzsche rejects the correspondence theory of truth, but accepts a ‘pragmatic’ theory³³; for Schacht, Nietzsche assigns to his own writing a ‘meta-level perspective’³⁴ from which he is able to pronounce the *real* truth.

Nietzsche’s own position, I would argue, follows rather the ‘feminine’ logic of the ‘not-whole’ [*pas-tout*]. With his ‘perspectivism’, Nietzsche seems to be trying precisely to avoid adopting the kind of ‘meta’-standpoint described above³⁵. His position is exactly the opposite one: ‘perspectivism’ means that truth is always absolutely *immanent* to a situation, what is prohibited is precisely any kind of appeal to a different or ‘higher’ level. Such an appeal would miss Nietzsche’s point that even the ‘immediate’ presentation of a situation is always minimally subjectively mediated: there can be no ‘pure’ datum of experience which has not always-already been interpreted. His point is thus not so much ‘there is no such thing as truth’ as ‘it is never possible to tell the truth of a situation from outside of that situation’. There is, then (according to Lacan’s formulae), no exception to this rule: every situation finds its ‘truth’ from an engaged perspective within it, but, and for this very reason, it is impossible to know the ‘full’ truth. The truth that one grasps is ‘not-whole’, it can only ever be partial and incomplete³⁶. But, and this is crucial, this is not because of any epistemological limitation. What Nietzsche aims at in his ‘perspectivism’ is the idea that the concept of a ‘full’ truth which ‘says it all’ is a *metaphysical* impossibility. Unlike on the ‘male’ side, there is no point of exception from which the whole truth can be spoken: *the absolute itself* is lacking, inconsistent, incomplete. Lacan’s own version of this point is, of course, his notorious dictum that ‘Woman doesn’t exist’ [*la femme n’existe pas*]³⁷.

³² Ibid. 21.

³³ Danto, 1965, discussed in Clark, 1990, 31-34.

³⁴ Schacht, 1983, 10, cited in Clark, 1990, 152.

³⁵ I rely here on the analysis in Zupančič, 2003.

³⁶ The usual example of the ‘not-whole’ is late Wittgenstein, whose understanding is similar to Nietzsche’s on this point. With his concept of ‘language games’ we do indeed have an absolutely universal account of language. The mystical exception famously mentioned at the end of the ‘masculine’ Tractatus has disappeared; there is no utterance which cannot be understood as a ‘language game’, no matter how mysterious it may appear. However (and for that very reason) what is stated remains ‘not-whole’: language describes partial connections and ‘family resemblances’, not ‘the absolute truth’, as it did in Wittgenstein’s earlier work.

³⁷ See Lacan, 1999. A formula which, to return for a moment to the problematic of sexual difference, should of course be read alongside Nietzsche’s infamous claim that

This insistence on the *metaphysical* status of our partial knowledge of truth is, as Žižek suggests³⁸, the key difference between the usual ‘post-structuralist’ position and Lacan: the difference lies in how to understand the claim that ‘there is no metalanguage’³⁹ (Lacan’s version of ‘perspectivism’). For a ‘deconstructivist’, this would mean that there is no ‘pure’ literal meaning in a text; it will always contain elements that destabilise it, that undermine any final interpretation. Žižek criticises this position thus:

the position from which the deconstructivist can always make sure of the fact that ‘there is no metalanguage’, that no utterance can say precisely what it intended to say, that the process of enunciation always subverts the utterance, is *the position of metalanguage in its purest, most radical form*⁴⁰.

In other words, the typical post-structuralist appropriation of Nietzsche remains squarely on the ‘male’ side: ‘there is no metalanguage’ is taken precisely as a metalinguistic statement, rather than, as Lacan has it, designating that the field of language is incomplete, incapable of being totalised because it does not have a full, positive reality to begin with.

A Discourse with Consequences

What, then, does this ‘feminine’ understanding of truth mean for our conception of science? As Nietzsche puts it in a crucial aphorism:

It is a profound and fundamental good fortune that scientific discoveries stand up under examination and furnish the basis, again and again, for further discoveries. After all, this could be otherwise. Indeed, we are so convinced of the uncertainty and fantasies of our judgements and of the eternal change of all human laws and concepts that we are really amazed how *well* the results of science stand up⁴¹.

It is clear that, for Nietzsche, scientific formulations are in some basic sense ‘false’. This is a problem that any conception of science will have to deal with at some point: how to account for the efficiency of ‘wrong’ theories. If theory X is superseded by theory Y, we nonetheless still require some explanation of the previous efficacy of theory X. The usual approach is to

³⁸ ‘Truth is a Woman’. The combination ‘Truth is a Woman (who does not exist)’ could serve as the basic formula for our Lacanian reading of Nietzsche.

³⁹ Žižek, 2008, 172.

⁴⁰ See e.g. Lacan, 2006, .688.

⁴¹ Žižek, 2008, 173 (my italics).

⁴¹ Nietzsche, 1974, 46.

show how these old theories nevertheless correctly grasped *some* aspect of the real. This presupposes, however, that there is an underlying ‘absolute truth’ of the matter, of which our theories are only better or worse approximations. As we have seen in his theory of truth, Nietzsche’s position is much more radical: he repeatedly denies the existence of *any* metaphysics which grounds ‘our world’ of change and becoming in ‘another’ stable, unchanging world⁴². He is thus faced with the problem raised in the quote: how are we to explain the undeniable efficiency of the apparently ‘false’ scientific discourse?

Lacan agrees with Nietzsche’s basic antirealist standpoint: modern science ‘posit[s]’ rather than ‘discover[s]’ the reality it works with⁴³. Lacan states, for example, that: ‘energy is not a substance... it’s a numerical constant that the physicist has to find in his calculations, so as to be able to work’⁴⁴. ‘Energy’ is a model we use in order to understand the results of scientific experimentation: it is a discursive formation, not a material thing. This scientific object, then, is ‘a fact experimentally produced by a theory’⁴⁵, rather than something which pre-exists the theory. However, as in Nietzsche, this does not necessarily lead to the ‘postmodern’ relativist position, where science is taken to be just one discourse among others: unlike many of his contemporaries, Lacan does think there is something unique about the discourse of science. Following the work of the French epistemologists, Lacan sees mathematisation and formalisation as the most important aspect of modern science, much more so than the focus on experimentation usually highlighted by the Anglo-American tradition. In stark contrast to a traditional British empiricist view, Lacan sees the key breakthrough of modern science in its ability precisely to ‘allow oneself a free-fall from any recourse to evidence’⁴⁶. The ability to reduce the richness of experiential data to a letter or a number means, in Lacan’s terminology, that science no longer needs to be subject to ‘imaginary capture’: science is able to function perfectly well even *when its object cannot be thought*. One can simply ‘do the maths’ and obtain the correct result without having to have any mental representation of what it ‘means’.

⁴² See e.g. Nietzsche, 1997, ‘Reason in Philosophy’, 2, Nietzsche, 1974, 344.

⁴³ The following analysis of Lacan relies heavily on the interpretations presented in Nobus, 2002, Fink, 1995, Verhaege, 2002, and especially Zupančič, 2011.

⁴⁴ Lacan, 1990, 18.

⁴⁵ Ibid.

⁴⁶ Lacan, 1990, 39 (my italics).

A good example of this is the infamous number *i*, the square root of -1. If there is *anything* which can be said not to exist, this is surely it: a number whose impossibility is built into its very *definition*. And yet, even though it is nothing but a fictitious and ‘false’ construction, nobody could seriously deny the material efficiency of this purely symbolic entity. Even though it ‘doesn’t exist’, we can nonetheless use this number in calculations which allow us to build buildings. Even if its referent is ‘false’ in some sense, the discourse it is a part of literally changes the real, material world:

scientific discourse was able to bring about the moon landings, where thought becomes witness to a performance of the real... using no apparatus other than a form of language⁴⁷.

Modern science is for Lacan not the progressive unfolding of the absolute truth, but a historical event, something which emerged at a particular moment in time. This event nonetheless opened up a new space, and this is the central point of Lacan’s conception of modern science: it is a form of discourse *which has real consequences*.

This aspect of Lacan’s thought, I would suggest then, is an attempt to *formalise* a basic ontological conception of science which he shares with Nietzsche. Nietzsche, as we have seen, is thoroughly sceptical about the real existence of the scientific object, but does not for a moment question that the discourse of science has ‘real’ effects. On the one hand, we know that science doesn’t present us with ‘the real as such’. However, we also cannot deny that nature does at least seem to follow the laws we posit with some regularity. In another crucial quote, Lacan deals with this problem of the relation between science and nature:

We cannot resist the idea that nature is always there whether we are there or not, we and our science, as if science were indeed ours and we weren’t determined by it. Of course I won’t dispute this. Nature is there. But what distinguishes it from physics is that it is worth saying something about physics, and that discourse has consequences in it, whereas everybody knows no discourse has any consequences in nature⁴⁸.

Zupančič immediately relates this quote to the anecdote of Hegel being dragged to the Alps by his friends: they wanted him to see the sublime grandeur of the mountains, and to reassess his thesis according to which only the products of human Spirit can attain real beauty. Hegel’s ironic response

⁴⁷ Ibid., 36.

⁴⁸ Lacan, Seminar XVI second lesson (unpublished), cited in Zupančič, 2011.

was ‘the sight of these eternally dead masses provokes nothing in me but the uniform and at length boring idea: it is [es ist so]’⁴⁹. It is not that we can’t understand the deep mysteries of nature, rather that *there simply is nothing there to understand*: ‘it is’ is all that can be meaningfully said. We can talk about the geological processes which formed the mountains, the chemical reactions which produced the different types of rock and so on, but then we have entered a different kind of discourse, a scientific one, one which precisely does have consequences.

Conclusion

We have seen, then, how it is that the scientific discourse produces its object in both Lacan and Nietzsche; this produced object is ‘false’ in the absolute sense, but it does have undeniable effects in the real (like allowing us to land on the moon). Nietzsche certainly does think that science ‘falsifies’ reality, but his position is, as we have seen, much more refined than the relativism of which he is often accused. Nietzsche was of course not interested in the kind of formalisation carried out by Lacan and his followers, he was no ‘structuralist’, but what I am suggesting is that Lacan’s structuralism (or ‘hyper-structuralism’ as Chiesa designates it⁵⁰) could be seen as a development of this aspect of Nietzsche’s thought (just like deconstruction and genealogy are developments of other aspects). Even though Nietzsche announces the ‘end of metaphysics’, putting an end to all philosophies which aim to fully capture the absolute, this does not at all mean that we have to give up on ‘the real as such’. Modern science, as we have seen, in its own way *produces* a new real, which, even if it is not fully complete or even ‘correct’, nonetheless functions. Of course, our investigation has been limited to the discourse of science: we have not dealt with the broader question of how we are to conceive of what ultimately *is* real. But is Nietzsche’s anti-metaphysical position not opposed to precisely this kind of gesture? His opposition to atomism, for example, is not a result of his belief that there is some ‘deeper’ level of substance: if, as has been argued, Nietzsche thinks that reality *itself* is ‘not-whole’, then all such ‘foundationalist’ enterprises must be mistaken. This is precisely what Lacan’s conception of science avoids: the presupposition that there is a true underlying reality of

⁴⁹ Hegel, 1997, 53.

⁵⁰ Chiesa, 2010, 159.

natural laws ‘out there’ waiting for us to discover them. If Nietzsche is right, then there can *only* be ‘regional ontologies’, different forms of discourse which somehow touch on the real; modern science may prove to be only one among many.

Bibliography

- Lorenzo Chiesa, ‘Hyperstructuralism’s Necessity of Contingency’, in S: *Journal of the Jan Van Eyck Circle for Lacanian Ideology Critique* (3), 159-177, 2010.
- Maudemarie Clark, *Nietzsche on Truth and Philosophy*, Cambridge: Cambridge University Press, 1990.
- Christopher Cox, *Nietzsche: Naturalism and Interpretation*, California: University of California Press, 1999.
- Arthur Danto, *Nietzsche as Philosopher*, New York: Macmillan, 1965.
- Bruce Fink, *The Lacanian Subject*, Princeton: Princeton University Press, 1995.
- Gary Gutting, *Thinking the Impossible: French Philosophy since 1960*, Oxford: Oxford University Press, 2011.
- Georg Wilhelm Friedrich Hegel, trans. Robert Legros and Fabienne Verstraeten, *Journal d’un Voyage dans les Alpes Bernoises (du 25 au 31 Juillet 1796)*, Grenoble: Millon, 1997.
- Saul Kripke, *Naming and Necessity*, Oxford: Blackwell, 1981.
- Jacques Lacan, trans. Bruce Fink, *Écrits*, London: Norton, 2006.
- trans. Bruce Fink, *Seminar XX*, London: Norton, 1999.
- trans. Denis Holler, Rosalind Krauss and Annette Michelson, ed. Joan Copjec, *Television*, London: Norton, 1990.
- Darian Leader, ‘The Not-All’, in *Lacanian Ink* (8), 1994, 43-50.
- Karl Marx, trans. Ben Fowkes, *Capital Volume I*, London: Penguin, 1990.
- Jean-Claude Milner, *Le Périple Structural: Figures et Paradigme*, Paris: Seuil, 2002.
- Friedrich Nietzsche, trans. Brittain Smith, *Dawn*, Stanford: Stanford University Press, 2011.
- trans. Daniel Breazeale, ‘On Truth and Lies in a Nonmoral Sense’, in *The Nietzsche Reader*, Oxford: Blackwell, 2010, 114-123.
- trans. R. J. Hollingdale, *Beyond Good and Evil*, London: Penguin, 2003.
- trans. Douglas Smith, *The Birth of Tragedy*, Oxford: Oxford University Press, 2000.
- trans. Richard Polt, *Twilight of the Idols*, Indianapolis: Hackett, 1997.
- trans. R. J. Hollingdale, *Human, All too Human*, Cambridge: Cambridge University Press, 1996a.

--- trans. Douglas Smith, *On the Genealogy of Morals*, Oxford: Oxford University Press, 1996b.

--- trans. Walter Kaufmann, *The Gay Science*, New York: Vintage, 1974.

Danny Nobus, 'A Matter of Cause: Reflections on Lacan's Science and Truth', in *Lacan and Science* ed. Jason Glynos and Yannis Stavrakakis, London: Karnac Books, 2002, 89-118.

Richard Schacht, *Nietzsche*, London: Routledge and Kegan Paul, 1983.

Paul Verhaege, 'Causality in Science and Psychoanalysis', in *Lacan and Science* ed. Jason Glynos and Yannis Stavrakakis, London: Karnac Books, 2002, 119-145.

Slavoj Žižek, *The Sublime Object of Ideology*, London: Verso, 2008.

Alenka Zupančič, 'Realism in Psychoanalysis', in *Journal of European Psychoanalysis* (32:1), 2011 accessible at:

<http://www.psychomedia.it/jep/number32/zupancic.pdf>

--- *The Shortest Shadow: Nietzsche's Philosophy of the Two*, Massachusetts: MIT Press, 2003.