



University of Warwick institutional repository: <http://go.warwick.ac.uk/wrap>

A Thesis Submitted for the Degree of PhD at the University of Warwick

<http://go.warwick.ac.uk/wrap/77278>

This thesis is made available online and is protected by original copyright.

Please scroll down to view the document itself.

Please refer to the repository record for this item for information to help you to cite it. Our policy information is available from the repository home page.

Philosophy and the Sciences in the Work of Gilles Deleuze, 1953-1968

David James Allen

Thesis submitted in partial fulfilment of the requirements for
the degree of Doctor of Philosophy in Philosophy

University of Warwick
Department of Philosophy

September 2015

Table of Contents

Acknowledgements	i
Declaration	iii
Abstract	iv
Introduction. Science and Scientism in Anglophone Deleuze Scholarship	1
1 ‘Scientism’ in Deleuze Scholarship	9
1.1 A Genealogy of the Scientistic Reading	10
1.2 The Scientistic Reading’s Metaphilosophical Deficit	16
1.3 Critical Readings.....	27
2 ‘Deleuzian’ History of Philosophy and Anachronism	29
3 Structure of the Thesis	37
Chapter 1. Situating Transcendental Empiricism: Scientificity, Structuralism and the Specificity of Philosophy in 1950s and ’60s French Thought.....	39
Introduction	39
1 Science as Object, Problem and Ideal in Postwar French Philosophy.....	41
1.1 Philosophy’s Changing Relation to the Sciences in the 1950s and ’60s .	47
1.2 Philosophy between Two Cultures	59
2 Alquié, Guérout, Hyppolite.....	66
2.1 Between Alquié and Guérout.....	66
2.2 Between Logic and Existence: Hyppolite’s Hegelianism.....	72
3 Transcendental Empiricism: Synthesis and Schematism.....	79
3.1 Against the Dialectic.....	80
3.2 ‘Superior Empiricism’: Concepts, Ideas, Dramatisation	89

3.2.1	The Limitations of the Schematism.....	91
3.2.2	Virtual Ideas and their Actualisation.....	96
3.2.3	The Dramatisation of Concepts.....	101
	Conclusion.....	104

Chapter 2. Cognition, Creation and Critique: The Task of Philosophy and the Limits of Science..... 107

	Introduction.....	107
1	Representation and the Transcendental Illusion of the Self-Sufficiency of Concepts.....	109
1.1	The Representational Structure of Cognition.....	109
1.2	Representation as the Site of Transcendental Illusion.....	117
2	Philosophy as Critique and Creation.....	121
2.1	Critique.....	122
2.2	Creation.....	129
3	Thinking and Knowing in the Sciences.....	134
	Conclusion.....	153

Chapter 3. Becoming Philosophical: The Philosophical Appropriation of Scientific Concepts..... 155

	Introduction.....	155
1	Deleuze's Use of Mathematical Concepts: Differential Calculus.....	158
1.1	Problematic Ideas and their Differential Determination.....	159
1.2	Lautman and the Dialectic of Problems.....	166
1.3	Calculus as a 'Model' and the Idea of a <i>Mathesis Universalis</i>	170
2	Deleuze's Engagement with Physical Concepts: Classical Thermodynamics.....	177
2.1	Individuation and Intensive Difference.....	179

2.2	Entropy as ‘Image of Thought’	181
2.3	Anticipating Nonlinear Thermodynamics?.....	187
3	Metaphor, Meaning and Problems	189
	Conclusion	192
	Chapter 4. Monism, Naturalism and Univocity: Immanence in Modern Science and Deleuzian Philosophy	194
	Introduction	194
1	Immanence and Science	196
2	Ontological Monism	203
2.1	The Univocity of Being	205
2.2	Ontological Monism and Contemporary Metaphysical Naturalism	210
2.3	Deleuze as ‘Liberal Naturalist’?	214
3	Ontological Monism and Differential Ontology	221
	Conclusion	237
	Conclusion. Deleuze, Continental Naturalism and the Ideal of a Scientific Philosophy	242
1	Deleuze and ‘Continental Naturalism’	248
2	Creativity versus Consensus: Countering the Ideal of ‘Normal Science’ in Philosophy.....	256
	Bibliography (with abbreviations)	263

Acknowledgements

Firstly, I would like to thank my supervisor, Prof. Miguel de Beistegui, for his encouragement and guidance throughout my years at Warwick. Without Miguel's inspiration this project would never have been set in motion, and without his insight and advice it would never have come to fruition.

I am indebted to my internal and external examiners, Profs Keith Ansell Pearson and John Protevi, for their warmth and openness in discussion, and for their invaluable questions, insights and suggestions.

Thanks also to my Progress Committee members, Profs Peter Poellner, Keith Ansell Pearson, David Smith and Diarmuid Costello, and to the Arts and Humanities Research Council for funding my doctoral research. Many thanks to Sue Podmore, whose unending helpfulness, calm and patience have been a salve for a nervous disposition.

During my time at Warwick I have had the good fortune to meet and share ideas with a great many interesting and inspiring people, all of whom have contributed to informing, challenging and enriching my thinking. Special thanks to Stephen Barrell, Alex Tissandier, Ben Berger, Matthew Dennis, Graham Wetherall, Pete Wolfendale, Simon Scott and Richard Birt, as well as to Giuseppe Bianco, to whom I owe a great debt of gratitude for opening my eyes to an ocean of methodological nuance the shores of which I am still exploring.

I have had the opportunity to present work-in-progress from this thesis at a number of conferences and workshops, and my thinking has benefited immeasurably from the discussions these events have made possible. I would thus like to thank the

organisers and attendees of the Deleuze, Philosophy, Transdisciplinarity workshop at Goldsmiths (2012), the Joint Annual Conference of the Society for European Philosophy and the Forum for European Philosophy at Manchester Metropolitan University (2012), the third Making of the Humanities conference at the Royal Netherlands Institute in Rome (2012), the Deleuzian Metaphysics workshop at Ghent University (2013) and the Annual Conference of the British Society for the History of Philosophy at the University of York (2013). From amongst the many valuable encounters I have had at these events, I would like especially to thank Henry Somers-Hall, Eric Schliesser, John Mullarkey, Judith Wambacq, Jeff Bell, Mary Beth Mader, Jackson Reese Faust, Patrice Haynes and Kyla Bruff.

From my other life in the frozen north, I would like to thank Aled Dilwyn Fisher, Roar Høstaker, Terje Ødegaard, Feroz Mehmood Shah, Jonas Jervell Indregard, Sigurd Jorem, Ragnar Myklebust, Tove Pettersen, Anstein Gregersen and Kåre Letrud, for teaching me to think in a new language.

Formative encounters: thanks to Chris Williams, Dan Brigham, Joseph Peach, Greg Smale, James Lamont and Ema Sullivan-Bissett, as well as to Dr. James Clarke for getting the whole thing started.

Finally, I cannot possibly thank enough my friends and family. Thanks to my parents, Helen and Chris Allen, as well as to my parents-in-law, Nora Ahlberg and Svein Bjerke, for all their love, support and encouragement. Thanks to my brother-in-law, Ernst Hugo Bjerke, who made me wish I was a historian, and who taught me that a sea monk just was a sea monk. And finally, thanks to my wife, Mildrid Bjerke, for her love, support, understanding and patience – det er du som gir det hele mening.

Declaration

This thesis is entirely the original, unpublished and previously unsubmitted work of the author.

Abstract

This thesis seeks to understand the nature of and relation between science and philosophy articulated in the early work (1953-1968) of the French philosopher Gilles Deleuze. It seeks to challenge the view that Deleuze's metaphysical and metaphilosophical position is in important part an attempt to respond to twentieth-century developments in the natural sciences, claiming that this is not a plausible interpretation of Deleuze's early thought.

The central problem identified with such readings is that they provide an insufficient explanation of the nature of *philosophy's* contribution to the encounter between philosophy and science that they discern in Deleuze's work. The philosophical, as opposed to scientific, dimension of the position attributed to Deleuze remains obscure. In chapter 1, it is demonstrated that this question of philosophy's contribution to intellectual life and of how to differentiate philosophy from the sciences is a live one in Deleuze's early thought. An alternative, less anachronistic interpretation of the parameters of Deleuze's early project is offered.

The remaining chapters of the thesis examine the early Deleuze's understanding of the divergence between philosophy and science. Chapter 2 gives an account of Deleuze's metaphilosophy, alongside a reconstruction of his largely implicit early understanding of science. The divergent intellectual processes and motivating concerns that account for Deleuze's understanding of the differentiation of science and philosophy are thus clarified. In chapter 3, Deleuze's use of mathematical and physical concepts is examined. It is argued that these concepts are used metaphorically. In chapter 4, the association between modern science and the Deleuzian concept of immanence that has been proposed by some Deleuze scholars is examined and ultimately challenged.

The thesis concludes with some reflections on the significance of Deleuze's early work for contemporary debates concerning the future of continental philosophy and the nature of philosophy more generally.

Introduction

Science and Scientism in Anglophone Deleuze Scholarship

The following thesis will investigate the status of science in the early work of the twentieth-century French philosopher, Gilles Deleuze, and his understanding of the relation between science and philosophy.

In this introduction, I will be concerned with the following:

- (i) I will first clarify the above formulation of the problematic of the project and its parameters;
- (ii) I will outline briefly the position (or family of positions) in Anglophone Deleuze scholarship that I will seek to question in the present thesis, its development and the problems with it that motivate the project;
- (iii) By way of some methodological reflections, I will consider the status of the present thesis as a study in the history of philosophy in relation to Deleuze's own concerns regarding the history of philosophy;
- (iv) Finally, I will outline the structure of the thesis.

Before I can begin to explore in more detail the motivations, aims and approach of this project, then, I will need to clarify some more basic, terminological points.

In speaking of Deleuze's 'early' work, I mean to indicate the line of thought that he follows (roughly) from the early 1950s to the late 1960s. The published works that I will take to define the outer limits of the period with which I am concerned are *Empiricism and Subjectivity* (1953) and *Difference and Repetition* (1968). The consistency of the viewpoint articulated in the various works composed by Deleuze in the course of this fifteen-year period is a point of contention in the literature, especially when it is a question of the relation between his early historical studies and his primary doctoral thesis, published as *Difference and Repetition*.¹ Deleuze himself has somewhat muddied the waters here by positing a philosophically significant break between his early historical studies and *Difference and Repetition*, despite the readily apparent continuities of concern and often of material. 'There is', Deleuze claims,

a great difference between writing history of philosophy and writing philosophy. [...] After I had studied Hume, Spinoza, Nietzsche and Proust, [...] *Difference and Repetition* was the first book in which I tried to 'do philosophy'.
(*DR*, p. xv [from the preface to the English translation])

Part of what has made this remark so troublesome is that the distinction between history of philosophy and 'first-order' philosophising as Deleuze understands it is not going to easily map onto the way such a distinction has been understood in recent English-speaking philosophy. Viewing Deleuze's remark through the lens of

¹ Brian Massumi (1992), for example, embraces a narrative (Deleuze's own narrative, if perhaps an exaggerated form of it) whereby Deleuze's early historical studies represent a cage from which the 'first major statements written in his own voice' (p. 2) were an attempt to escape. Levi Bryant (2008) too insists on a distinction between 'the works explicating [Deleuze's] own philosophy' and 'Deleuze's studies of other philosophers' (p. xi). Meanwhile, other commentators doubt the coherence of studying Deleuze's 'own' philosophy in isolation from its evolution out of his studies of historical thinkers: see, for example, Boundas (1996, esp. p. 82), Smith (2012a, esp. pp. 29-30) and Tally (2010).

the assumptions we have inherited from ‘classical’ analytic philosophy’s anti-historical stance threatens to obscure the fact that it is *a particular way* of doing the history of philosophy that is being distinguished from ‘doing philosophy’, and not history of philosophy *tout court*.² But whatever Deleuze’s own view on the personal significance for his own intellectual development of this first attempt to ‘speak in [his] own name’ (*DR*, p. xv [preface to the English translation]), to treat the early historical studies as belonging to a distinct period of Deleuze’s oeuvre to the doctoral work seems artificial. The view taken in this thesis will be that, even if not everything written in the works of these periods can be seen to articulate a single coherent position, there is such a position being developed. This is the position that comes to fruition in *Difference and Repetition*. The readings of figures from the history of philosophy developed in Deleuze’s earlier historical studies make, in places, crucial contributions to the conceptual scaffolding of this position.

This periodisation will exclude work that can be regarded as Deleuze’s ‘juvenilia’ – the various essays he published as a student in the 1940s – and likewise the 1969 work, *Logic of Sense*. Although it continues and develops a number of themes and ideas found in the earlier work, the latter is a transitional work in which Deleuze begins to formulate new ideas and approaches, some of which will be taken up in the markedly new phase of his work that begins with his collaboration with Félix Guattari, some of which will be abruptly terminated by this same encounter.³

Likewise with the juvenilia: while there are undoubtedly points of communication

² I will say a little more on this below.

³ On the differences between *Difference and Repetition* and *Logic of Sense*, see Deleuze (2006a, p. 65). On the differences between *Logic of Sense* and Deleuze’s subsequent work with Guattari, see his comments in the discussion following his presentation at the Cerisy conference on Nietzsche in 1972 (*DI*, p. 364/p. 261).

and continuity between Deleuze's first published attempts at philosophising and the work that will occupy him in the subsequent two decades, this work of the 1940s seems to me to belong to a different phase, to be motivated by different problems, a different philosophical atmosphere.⁴

The work of the '50s and '60s, at least up to the '68 publications, by contrast, displays a remarkable continuity of concerns and problems. This is perhaps ultimately unsurprising: the two major publications of 1968 which bring this period of Deleuze's thought to a close, *Difference and Repetition* and *Spinoza and the Problem of Expression*, were the products of doctoral research with which he had been occupied throughout this period.⁵ Furthermore, the thematic commonalities between the various works in the history of philosophy Deleuze published in the course of the 1950s and '60s are apparent to any reader of his work; the readings of various figures he develops in those studies are loadbearing components of the position he puts forward in *Difference and Repetition*. In Deleuze's work – as in the work of many thinkers educated in the French university system – the idea of a stable distinction between 'first-order' philosophising and the history of philosophy is effectively absent. And while Deleuze disparages 'scholarliness' in philosophical historiography (a point to which I will return in the course of this introduction), it is clear that this in no way constitutes a dismissal of the prevailing notion of philosophy in France as informed by and engaged with its history. The sort of anti-

⁴ On Deleuze's juvenilia, see Faulkner (2002) and Van de Wiel (2008).

⁵ According to Deleuze's biographer, François Dosse (2010), 'his secondary thesis on Spinoza', which would be published in 1968 as *Spinoza and the Problem of Expression*, 'was practically finished in the late 1950s' (p. 118); whilst *Difference and Repetition* reprises at various points lines of interpretation and inquiry that can already be seen expressed in historical studies published across the span of the two decades in question.

historical stance espoused by many influential analytic philosophers at the highest pitch of that movement's revolutionary fervour is quite alien to Deleuze, whatever aspersions he may have cast on a subjugation of philosophical creativity to the intellectual demands of an accurate scholarly representation of philosophy's past.

I will, as I have said, focus on the status of science in Deleuze's *early* work in particular. I do this for three reasons. Firstly, although Deleuze clearly engages with material drawn from the natural and social sciences in this work, he fails to articulate any clear philosophy of science, or to reflect explicitly on the nature of science or of his engagement with it. In this respect, a study of the status of science in Deleuze's early thought is in a position to make a contribution to our understanding of Deleuze's philosophy, as it can help to reconstruct an aspect of Deleuze's thought that is key to our understanding of this thought even though it remains implicit in Deleuze's text. Secondly, and I will comment more on this below, there has been a tendency to read Deleuze's later remarks concerning the nature of science and of its relation to philosophy back into his early work in a way which, I would suggest, is liable to lead to a neglect of the form these concerns take in Deleuze's early philosophy itself. To read the work of the '50s and '60s as if it had been constructed with some foreknowledge of categories and distinctions only to be formulated several decades later strikes me as a recipe for misinterpretation and the detection of false patterns.⁶ A third reason for focusing on the early work: this work emerges out of a period of French philosophy in which questions pertaining to philosophy's relation to the sciences were particularly alive and important for setting the general

⁶ That said, it must be noted that this is precisely the sort of move that Deleuze himself makes in his own historical studies, which, as will be discussed in chapter 1, are indebted to the 'synchronic', structural approach to the study of philosophical systems proposed by Martial Gu eroult.

tone of philosophical discussion, something which makes Deleuze's relative lack of explicit pronouncement on these issues at this time all the more intriguing.⁷

Returning to the above formulation of this thesis' guiding question, the term 'science' also needs some clarification. First of all, when I say that I intend to investigate the role of science in Deleuze's early work, I have in mind both particular fields of scientific research and 'science' as an epistemic ideal. (I will often use the term 'scientificity' to refer to the latter – a useful Gallicism in the present context.) I will thus be concerned with both how Deleuze seeks to orientate his philosophy in relation to particular sciences and their conceptual resources, and in relation to science as a potential model for the activity of philosophy itself.

Secondly, I should clarify that while I will be particularly interested in the natural sciences (and in this connection occasionally with mathematics), as it is these that have tended to play the leading role in the family of readings of Deleuze's philosophy that I will be concerned to criticise, I will also have occasion to discuss the role of the social sciences, particularly when considering the historical context into which Deleuze's interventions were made. While this indicates that a particularly broad notion of science is in play here, I hope it will become apparent in what follows that, given the nature of discussions regarding the relation between philosophy and the social sciences in France in the mid-twentieth century, and particularly the notion of scientificity in play there, this usage is not unmanageably vague.

In this study of Deleuze's early thought, I will be particularly interested in Deleuze's early *metaphilosophy*, his philosophy of philosophy. By Deleuze's

⁷ I will discuss this point in more detail in chapter 1.

‘metaphilosophy’, I mean his second-order philosophical reflections and pronouncements about what philosophy is, its characteristic tasks, methods and aims, and its difference from other areas of intellectual activity. With reference to the last of these points, I will often speak of philosophy’s ‘specificity’, that is to say, that which is unique to philosophy and constitutes its difference from any other mode of intellectual activity. Its specificity in relation to science, in particular, will often be in question in what follows.

Metaphilosophical reflections of this kind can be either *descriptive* or *prescriptive*, depending on whether one seeks to give an accurate description of how philosophical practice does in fact function or whether one is rather concerned to argue for how philosophy should be practiced. Generally speaking, in his early work, Deleuze’s metaphilosophical claims are prescriptive in character, as he speaks about philosophical practice in the manner of an ideologue laying down the terms of a bold new manifesto. However, there is at times a sense that Deleuze takes his remarks to also be of descriptive significance, since he seems to suggest that philosophy just is practiced in the manner that he prescribes when it is practiced without self-deception.⁸

‘Metaphilosophy’ is not a term that is indigenous to Deleuze’s corpus, and in utilising it here I am keenly aware that it may seem to imply a degree of separation, or a clear division of labour, between ‘first-order’ philosophising and ‘second-order’

⁸ It is noteworthy that in the 1991 work, *What Is Philosophy?*, where metaphilosophical considerations are explicitly in focus, Deleuze (writing with Guattari) takes a descriptive approach. Here, readings of various figures from the history of philosophy are presented in which it is suggested that the real philosophical significance of their work can only be made sense of in the context of the conception of philosophy articulated by Deleuze and Guattari themselves. There may well be some illuminating reason for this change of strategy on Deleuze’s part, but I will not pursue this line of inquiry here.

reflection on the nature of philosophising that is not acknowledged by Deleuze himself. In his work, as in the work of many twentieth-century French thinkers, reflection of a ‘meta-philosophical’ character is simply part and parcel of what it means to do philosophy.⁹ If I make a point of making such a distinction here, then, it is in order to provide myself with the necessary terms in order to speak more clearly about the various components of Deleuze’s early project than he himself does. Although there is clearly a unity of mutual dependence amongst these components, Deleuze’s ontology, his metaphilosophy, his ethics can usefully be discussed separately – and doing so will help to show how these mutual dependencies function.

If Deleuze’s metaphilosophy is of particular interest in thinking about the status of science in his early thought, this is because the question of the status of science in Deleuze’s philosophy has circulated around questions of his conception of philosophy, his conception of science and his understanding of their relation. Correlatively, it is by clarifying Deleuze’s understanding of the nature and specificity of philosophy in his early work that I hope to make clear that there is a meaningful discontinuity between philosophy and the sciences in that work. In order to understand what is at stake in defending such a position, it will be helpful to take a look at the way discussions of these questions have unfolded in the English-speaking secondary literature on Deleuze over the last few decades.

⁹ This, I would suggest in passing, is one of the reasons ‘continental’ philosophy has struggled to form anything like a coherent disciplinary framework within which to pursue collective, cumulative research of the kind aspired to by many ‘analytic’ philosophers, the coherence of this would-be tradition lying instead primarily in a set of shared historical reference points. If the basic method and aims of philosophy are being constantly reassessed, it is difficult to establish the sort of ground-level background agreement required for a progressive research programme. In the conclusion to this thesis I will suggest that this is no bad thing.

1 ‘Scientism’ in Deleuze scholarship

In the introductory essay to his 2010 edited collection on Deleuze and science, Peter Gaffney (2010) points to the existence of what he terms a “‘scientificity’ polemic’ (p. 7) in contemporary Anglophone Deleuze scholarship. This debate is concerned with the status of science in Deleuze’s thought and the role of science in the development of his philosophy. The debate has been carried out, Gaffney (2010) states, between ‘two divergent approaches in Deleuzian studies’ (p. 8). One, which he terms ‘the scientific approach’, ‘compares Deleuze’s work to theories and discoveries advanced by contemporary “radical” science’; whilst the other, which he terms the ‘critical approach’, ‘proceeds by drawing a line between physics and metaphysics’ (Gaffney 2010, pp. 8-9). While Gaffney is no doubt correct that such positions have been taken, the debate has not been all that polemical, insofar as each side has been fairly content to ignore the other and elaborate its own interpretation of Deleuze’s work without going into much detail regarding the faults it sees in the other approach. Within the oversimplified terms of this formulation of the opposing poles of the debate, the reading developed here is certainly ‘critical’, in that I will seek to show that a fairly clear line can be drawn in Deleuze’s early work between science and philosophy. I will not, however, simply ignore the claims of the so-called ‘scientific’ camp, but will endeavour to actively and explicitly clarify why they constitute a misreading of Deleuze’s early philosophical project, and consequently a misrepresentation of what Deleuze has to offer contemporary philosophical debates concerning the nature and role of philosophy, its distinctiveness and its relation to the sciences.

1.1 *A genealogy of the scientific reading*

Whence this interpretative approach (which, for want of a better term, I will follow Gaffney in calling ‘scientific’)?¹⁰ From early on in its development (which begins in dribs and drabs in the late ’80s), Anglophone Deleuze scholarship has had a notable interest in Deleuze’s engagements with the sciences. Already in the early ’90s, Brian Massumi (1992, e.g. p. 58 ff.), in a commentary on Deleuze and Guattari’s *Capitalism and Schizophrenia*, had used conceptual resources drawn from thermodynamics in order to elucidate certain aspects of the philosophical edifice constructed in those works. This would prove an increasingly popular focus for commentators on Deleuze’s (and Deleuze and Guattari’s) work in the years to come. Beginning in earnest in the mid-’90s, there is an upsurge of interest (for which the University of Warwick was itself an important hub, due in large part to the influence of Warwick philosophers Nick Land (2011) and Keith Ansell Pearson (1999)) in reading Deleuze’s philosophy in relation to emerging technologies and ‘cybernetic culture’, as well as evolutionary biology and its philosophical significance.

These early Anglophone readings spawned a range of more or less explicitly articulated attitudes regarding the relation between philosophy and science in Deleuze’s thought. Under the influence of Land’s ‘cyberpunk’-inspired Deleuzianism, a minority of commentators adopt the view that Deleuze’s anti-humanism can be productively assimilated to the sort of post-Darwinian

¹⁰ I am a little squeamish about using the term ‘scientism’ in this context, since this term’s frequent rhetorical use as a term of abuse has leant it the air of a rhetorical cheap shot. At the same time, it may show itself to be an appropriate term in the present context all the same, since my criticism of ‘scientific’ readings of Deleuze will be that, regardless of any intentions to the contrary, they tend to lose sight of the difference between philosophy and science in Deleuze’s thought – to the detriment of philosophy.

philosophical naturalism defended in the work of cognitivist philosophers of mind like Daniel Dennett.¹¹ This is not the most common approach, however, and alternatively Deleuze will be read as the architect of ‘a novel “philosophical biology”’ – a contribution to a ‘tradition [...] of modern biophilosophy’ – which aims both to contribute to articulating the philosophical underpinnings of ‘contemporary developments in neo-Darwinian and post-Darwinian paradigms [...] in biology’ and to developing ‘an “ethological” ethics’ capable of meeting ‘the challenge of biological nihilism’ with which neo-Darwinian evolutionary biology purportedly threatens us (Ansell Pearson 1997a, p. 17; 1999, pp. 1, 4, 9-10).

On this reading, although Deleuze is indeed seen to be engaging with evolutionary biology and to be concerned to draw out its significance, this relationship is in no way unidirectional: as much as ‘biophilosophy’ draws its problematic from developments in biology and their philosophical and sociocultural impact, it is expected to force the science of biology itself to reassess its own theoretical orientation. For example, Ansell Pearson (1997b) argues that Deleuze can help show that the move in (then) ‘contemporary biology’ from ‘the genetic reductionism of ultra-Darwinism’ to ‘organismic holism in complexity theory’, while in some respects a welcome one, is not sufficient: a further move is needed to a model of ‘the flows, intensities and pre-vital singularities of pre-stratified, non-organic life’ (p. 186). In addition, the ethical dimension of the Deleuzian project is

¹¹ See Welchman (1997), who suggests that a ‘new alliance between Deleuze’s machinic thinking and Anglo-American analytic engineering philosophy’ is discernible (p. 225). Welchman is amongst the only scholars to so explicitly attribute to Deleuze a philosophical naturalism of a sort recognisable to contemporary analytic philosophers. In this respect, his reading avoids many of the difficulties through which theorists such as Protevi will put themselves in trying to establish an affinity without identity between Deleuze and such positions. Nonetheless, as I will go on to show in the course of this thesis, such a reading is ultimately hard to sustain.

taken to be external to the concerns of biological science, even if scientific developments play a key role in inducing the nihilistic cultural conditions to which such an ethics is intended as a response. Thus, however intimate the envisaged interaction between philosophy and biology at the heart of Deleuze's biophilosophy, it is emphasised that his work remains in a philosophical (and thus not a scientific) register. Indeed, '[i]t is [...] incumbent upon [Deleuzian] philosophy to philosophize in the most radical manner conceivable, doing violence to the mind by *breaking* both with the natural bent of the intellect and *with habits of scientific praxis*' (Ansell Pearson 1997a, p. 2 [my emphasis]). In the biophilosophical encounter between biology and philosophy, it is 'biological thinking' which is '*in the service of a philosophy of internal difference*' (Ansell Pearson 1997b, p. 183 [my emphasis]).

A related exegetical current emerging already at this time in early Anglophone Deleuze scholarship aligns Deleuze with some form of *materialism*. It is interesting to note that, in this context, although Deleuze's purported materialism *is* associated with the sciences, this is often done in a way which explicitly distances him from 'the seemingly reductive materialisms of cybernetics' noted above (Mullarkey 1997, p. 439).¹² Rather, what these commentators discern in Deleuze is a reconceptualisation of 'matter' as active and self-organising – as in some sense *living*.¹³ At the heart of this pananimist (one might equally say vitalist) materialism

¹² Indeed, if philosophical naturalism implies 'that even the human is reducible to the natural realm – or rather, that it is reducible to the scientific and materialist view of the natural realm', then 'Deleuze could not be called a naturalist on this score' (Mullarkey 1997, p. 448).

¹³ It is important to note that my characterisation of a biophilosophical current and a pananimist current in early Anglophone Deleuze scholarship are idealisations from a more mixed reality. Thus, Ansell Pearson (1997a) too claims that '[t]hinking "machinically" involves showing the artificial and arbitrary nature of the determination of boundaries and borders between living systems and material forms' (p. 17).

are debates in the philosophy of science concerning the proper relations between scientific theories about different levels or scales of reality (that is, debates about reductionism). Particularly central here is the idea that the flourishing of complexity science and the recognition of the importance of complex systems and emergence should urge a reassessment of the notion of reduction as a key mechanism of scientific explanation, or as a way to understand the relations between the sciences. Deleuze's materialism will be seen as contributing to thinking through the conceptual groundwork of a coherent anti-reductionist metaphysics of the diverse domains of reality handled by scientific theories ('emergence' will prove to be a key term of art in this connection).

Crucially, amongst those who attribute this sort of pananimist materialism to Deleuze is Manuel DeLanda, who will play a key role in the next phase of thinking about the relation between philosophy and science in Anglophone Deleuze scholarship. In 'Immanence and Transcendence in the Genesis of Form', DeLanda (1997) attributes to Deleuze a 'rigorous philosophy of physics' – or what he also refers to as a 'philosophical physics' – capable of providing 'the basis for a renovated, reinvigorated materialism' (p. 513).

The seed DeLanda (1997) plants in the minds of subsequent Deleuze scholars is the idea that if it can be shown that 'some basic ideas in [Deleuze's philosophy] cohere rather well with the relevant scientific findings' (p. 513), then these findings might be thought to *support* Deleuze's philosophical theorising – at the same time as the latter could be taken to constitute an elaboration of the philosophical significance of this scientific work. In this way, DeLanda's 'philosophical physics' begins to complicate and compromise the autonomy of philosophy in relation to the scientific materials with which it engages, an autonomy that had still been evident in Ansell

Pearson's 'philosophical biology'. DeLanda proposes an interpretative approach in which, at the same time as Deleuze's engagements with the sciences are increasingly seen to be central to a clear and coherent exposition of his thought, the role of philosophy in relation to science in that thought will become confused and hard to discern.

An important event in the development of the family of readings I am interested in here is the publication in 2002 of DeLanda's *Intensive Science and Virtual Philosophy*. In this work, DeLanda (2002) offers a 'reconstruction' of Deleuze's philosophy as a non-essentialist ontology (p. 2),¹⁴ where the rejection of essentialism is seen to be motivated by the nature of physical reality as described by complexity science.¹⁵ Deleuze's ontology, as reconstructed by DeLanda (2002), is a species of scientific realism, in the sense that it grants to the entities posited by our currently most successful scientific theories 'full autonomy from the human mind, disregarding the difference between the observable and the unobservable' (p. 2).¹⁶

¹⁴ 'Ontology' is understood here in the Quinean sense of the 'set of entities [one] assumes to exist in reality, the types of entities [one] is committed to assert actually exist' (DeLanda 2002, p. 2). This is thus not the Heideggerian sense of 'ontology', which is precisely the study of what it means to be and *not* the determination of what there is. In chapter 4 of this thesis, I will have occasion to argue that it is because of Deleuze's 'ontology' (in the Heideggerian sense) that he has no fixed 'ontological commitments' (in the Quinean-DeLandian sense).

¹⁵ Apparent here is the influence of Ilya Prigogine and Isabelle Stengers' (1986, pp. 290-293) earlier remarks to the effect that Deleuze should be counted as an important philosophical *precursor* to the development of the scientific field of nonlinear thermodynamics, having anticipated much of the philosophical significance of such changes in our understanding of physical reality. I will return to these remarks in chapter 3.

¹⁶ This scientific realism is contrasted with a naïve realism that would 'grant to the objects of everyday experience a mind-independent existence, but remain unconvinced that theoretical entities [...] possess such an ontological autonomy'; as it is with the idealist view that 'reality has no existence independently from the human mind' (DeLanda 2002, p. 2).

Furthermore, the mind-independent reality it describes does not conform to the constraints of ‘essentialism’ or ‘*typological* thinking’, understanding individuation and the genesis of form instead in terms of ‘*dynamic processes*’ and their ‘abstract (or rather *virtual*) structure’ (DeLanda 2002, p. 3 [original emphasis]). Such processes and structures are ‘what gives objects their identity and what preserves this identity through time’ (DeLanda 2002, p. 3).

Throughout his discussion, DeLanda builds on Deleuze’s appeals to conceptual resources drawn from mathematics and physical theory, specifically differential calculus and dynamic systems theory. Furthermore, DeLanda heavily foregrounds this aspect of his own presentation, suggesting that a rigorous explication of Deleuze’s concepts requires such an appeal to scientific and mathematical concepts and theories. DeLanda (2002) claims, in addition, that this essential engagement with the sciences – along with his purported scientific realism – is indicative of the fact that Deleuze takes the sciences (indeed, especially the hard sciences) seriously in a way that ‘the “post-modern” tradition’ with which he is often associated has, according to DeLanda, refused to do (p. 1).

DeLanda’s work encourages the view that Deleuze’s philosophy displays an essential complicity with specific twentieth-century developments in the natural sciences. On this point, DeLanda and those sympathetic to his reading of Deleuze often take their lead from a remark made by Deleuze in an interview with the philosopher Arnaud Villani, conducted in 1981 and subsequently published as an appendix to Villani’s 1999 book on Deleuze, *La Guêpe et l’orchidée*. Deleuze’s notorious remark is that ‘modern science has not found its metaphysics, the metaphysics it needs’, and that ‘it is that metaphysics that interests me’ (Deleuze and Villani 2007, p. 41). This is what DeLanda’s reconstruction of Deleuzian ‘ontology’

in the terms of mathematics and physical theory is supposed to have confirmed, then: that Deleuze's project is indeed one of articulating the metaphysics of contemporary science.¹⁷

1.2 *The scientific reading's metaphilosophical deficit*

There are, I would suggest, problems with this approach, and these problems concern the underdevelopment of ideas pertaining to the relation between philosophy and science in DeLanda's reading.

DeLanda (2002) speaks of a '*philosophical transformation*' (p. 32 [original emphasis]) of mathematical and scientific concepts in Deleuze's work, through which the latter come 'to be detached from their original context' (p. 172).¹⁸ A proper understanding of the need for and nature of such a transformation is going to depend upon how the difference between philosophy and science is understood. But it is on precisely this point that DeLanda's exposition becomes unclear. This is not to say that DeLanda evades the issue entirely. He does gesture towards a solution. But he does so in a way that is not altogether satisfactory, either within the context of his own account or (as I will show in subsequent chapters) as a reading of Deleuze's early treatment of this issue.¹⁹

¹⁷ DeLanda sets his reading of Deleuze explicitly in the context of this remark in an interview with Peter Gaffney (DeLanda and Gaffney 2010, p. 325).

¹⁸ I will have occasion to examine in more detail what sense can be made of the notion of a philosophical transformation of scientific concepts in Deleuze's thought in chapter 3, where my suggestion will be that a proper understanding of Deleuze's handling of scientific concepts in fact undermines DeLanda's scientific reading.

¹⁹ Whilst DeLanda does not specify that his presentation of Deleuze's ontology should be restricted to the philosopher's 'early' work (in the sense in which I am using that periodisation), it is nonetheless legitimate to require that his presentation be adequate as a reading of that period of Deleuze's work,

On those few occasions when DeLanda (2002) gestures towards some account of philosophy's distinctive task, he generally defaults to cursory references to Deleuze and Guattari's final collaborative work, *What Is Philosophy?*, from which he draws the conclusion that philosophy's task is to 'make the virtual *intelligible*' (p. 174 [original emphasis]). Philosophy is distinguished from science by its 'constructivist method' (DeLanda 2002, p. 115), using which it moves 'from qualities and extensities, to the intensive processes which produce them, and from there to the virtual' (p. 68). Science, on the other hand, moves 'in the opposite direction', 'concentrat[ing] on the final product [i.e. qualities and extensities], or at best on the process of actualization but always in the direction of the final product' (DeLanda 2002, pp. 67-68). Hence, the 'transformation' of scientific concepts into philosophical concepts should be understood as a matter of 'get[ting] rid of any trace of actuality that these concepts may still bear despite their already highly abstract nature' (DeLanda 2002, p. 71).

DeLanda is far from clear on how this distinctively philosophical method is to be understood. He makes some suggestive remarks (with reference to *Logic of Sense*) about the philosopher taking on the role of what Deleuze refers to in *Difference and Repetition* as the *précurseur sombre*, which is involved in the actualisation of a system, but such comments remain, in my view, merely suggestive in the absence of a fuller cashing out by DeLanda of how exactly the philosopher's intellectual labour might bear such a role. Perhaps more concretely, DeLanda (2002) will also point to an 'empiricism of the virtual' (p. 78), which would consist in 'locat[ing] those areas of the world where the virtual is still expressed [namely, far-

since DeLanda does claim (2002, p. 6) that his account is mainly drawn from the framework outlined in that period.

from-equilibrium systems], and us[ing] the unactualized tendencies and capacities one discovers there as sources of insight into the nature of virtual multiplicities' (p. 67). (Here, I would contend that DeLanda falls prey to the same criticism to be outlined below, namely that he fails to make clear why such an 'empiricism' is a philosophical task rather than one already being carried out by complexity science.)

Even setting aside the question of precisely how this 'method' is to be understood, a question remains as to how adequately this attempt at defining the specificity of philosophy in relation to science fits with DeLanda's own exposition of Deleuze's ontology. The issue is that if DeLanda's account of the role of scientific and mathematical conceptual resources in the articulation of Deleuze's philosophical concepts demonstrates anything, it is, I would argue, just how far these scientific concepts go towards doing the intended philosophical work *on their own*. That is to say, DeLanda does such a good job of articulating a plausibly Deleuzian ontology using scientific concepts, that it is easy to be left wondering whether much by way of 'transformation' can plausibly be said to have taken place. Is DeLanda's work a particularly clear and illuminating piece of popular science writing? No doubt these scientific concepts and conclusions are translated into a Deleuzian vocabulary, but they exhibit little by way of more substantive *conceptual* transformation of the sort that might be expected to result from the transport of these concepts into a philosophical register. Philosophy's task, which is supposed to distinguish it from the sciences, is supposed to be, as I have noted, to make the virtual intelligible. But DeLanda's own presentation seems to demonstrate that it is the scientific study of nonlinear, far-from-equilibrium dynamic systems that provides the conceptual resources to achieve such intelligibility.

I do not at all mean to suggest that *Intensive Science and Virtual Philosophy* is a work devoid of specifically philosophical merit. However, where DeLanda is most clearly going beyond an exegesis of the conceptual underpinnings of complexity science is in his positioning of Deleuze within contemporary debates in the philosophy of science, in particular those debates concerning the importance of modal notions for scientific explanation. These aspects of DeLanda's work serve not so much to clarify how scientific notions are translated into a philosophical context, as to make a more traditional contribution to the interpretation of the philosophical significance of scientific notions. This is philosophy *of* science firmly in the objective genitive. Furthermore, these are the passages where it is least plausible that what DeLanda is offering is a reading of Deleuze's texts, as it is far from clear that Deleuze's own discussions of modality are meant as a contribution to debates concerning realism about modal structure in scientific explanation.

I also do not mean to say that DeLanda's work is uninformative as a clarification of some of Deleuze's key concepts. On the contrary, it is often extremely helpful in this regard. What it fails to clarify, however, is what exactly is going on in Deleuze's philosophy which might be *specifically philosophical*, which is to say, which might *add* something to the fabric of our intellectual lives which is not already provided by the work of the various scientific fields in which complex systems of various kinds are studied.

That DeLanda falls short on this question is perhaps unsurprising given his scepticism towards the question itself. DeLanda (2002, pp. 178-180) will distance himself from what he sees as the lingering 'positivism' of Deleuze and Guattari's discussion of science in *What Is Philosophy?*, expressing instead his preference for the distinction developed in *A Thousand Plateaus* between 'royal' and 'minor'

science. This formulation, as he himself notes, ‘makes the distinction which [*What Is Philosophy?*] establishes between science and philosophy pass right through the middle of science itself’ (DeLanda 2002, p. 180). This displacement of the distinction between philosophy and science to within science itself would seem to make apparent the artificiality of the gesture towards a differentiation between philosophy and science made elsewhere in DeLanda’s work. And in fact, where he does distinguish philosophy from science it is often only from ‘linear’, ‘classical’ science – the question remains as to whether philosophy is simply to be identified with those areas of scientific research where ‘the virtual’ manifests itself, or whether some further distinction can be made.²⁰

My suspicion is that ultimately DeLanda’s approach is to see philosophy as continuous with science, or at least with certain sciences or certain research programmes within the sciences (such a position is indeed strongly suggested by the title of DeLanda 2004).²¹ I doubt, however, whether it is plausible to construe Deleuze as adopting such a position, for reasons that will be explored in the course of subsequent chapters.

²⁰ Similar manoeuvring is made by Isabelle Stengers (2010), who seems to suggest that a determinate boundary between philosophy and science in Deleuze’s work can only be drawn insofar as the science in question is ‘royal’ rather than ‘minor’ science.

²¹ DeLanda seems then to end up attributing to Deleuze the sort of position David Papineau (2009, §2.1) terms ‘methodological naturalism’, according to which ‘philosophy and science [are seen] as engaged in essentially the same enterprise, pursuing similar ends and using similar methods’. I take it this is also the sort of view Peter Gaffney (2010) has in mind when he speaks, apropos the sort of reading of Deleuze articulated by DeLanda and Protevi, of a ‘general merger of metaphysics and theoretical science’ (p. 9). See also Holdsworth (2006).

The most outspoken and explicit defender of a broadly ‘DeLanian’ reading of Deleuze in the wake of DeLanda’s landmark work has been John Protevi.²² In their work on *Deleuze and Geophilosophy*, Protevi and co-author Mark Bonta (2004) claim that ‘[i]n his solo works, Deleuze strives to present a basic ontology or metaphysics adequate to contemporary physics and mathematics’ (p. 12). Here, contemporary physics and mathematics are explicitly understood in terms of ‘complexity science’, where this is ‘a catchall phrase’ for scientific fields concerned with non-linear dynamics, complex adaptive systems, non-equilibrium thermodynamics, and related fields (Protevi and Bonta 2004, pp. 191-192 n. 2). Deleuze is ‘the Kant of our time’, in the sense that ‘[j]ust as Kant’s *Critiques* were in a sense the epistemology, metaphysics, ethics, and aesthetics for a world of Euclidean space, Aristotelian time, and Newtonian physics, Deleuze provides the

²² Dorothea Olkowski (2007) has defended a related view, claiming – from within a perspective strongly influenced by ‘[m]id to late twentieth-century French theory’ – that the ‘new view of physical reality’ asserted by certain developments in twentieth-century physics and mathematics demands a new ‘ontology and [philosophical] methodology’ (pp. 1-2). However, while Deleuze is clearly an influence on her view, she suggests that the position she articulates constitutes ‘a critique of the *limits* of the particular formalist, mathematical structure used by Deleuze’ to this end, namely ‘the manifold of continuous space-time of dynamical systems theory’ (Olkowski 2007, p. 1). For this reason, I will not focus here on her position. See also Olkowski (2012).

Miguel de Beistegui (2004) also offers a reading of Deleuze’s philosophy which bears some relation to that of DeLanda and Protevi, insofar as he takes Deleuze’s philosophy to have a strong affinity with the developments of complexity science (and other twentieth-century developments in the physical sciences), and indeed to be an exploration of the *ontological* ramifications of ‘the way in which twentieth-century physics has radically altered the metaphysical conception of nature inherited from Greek antiquity [...] and modernity’ (p. 191). However, de Beistegui’s reading is distinguished from those of DeLanda and Protevi by his acknowledgement of the *Heideggerian* resonances of Deleuze’s notion of ‘ontology’, neglected by DeLanda’s Quinean conception of ontology. As a consequence, de Beistegui’s reading is more awake to the question of how Deleuze’s philosophical engagements with the sciences are to be distinguished from these sciences themselves. I will come back to the importance of these Heideggerian themes in Deleuze’s early work in chapter 4.

philosophical concepts that make sense of our world of fragmented space [...], twisted time [...], and the non-linear effects of far-from-equilibrium thermodynamics' (Protevi and Bonta 2004, pp. vii-viii).

What is interesting about the new picture of physical reality foregrounded by complexity science research, according to Protevi and Bonta, is that it recognises that 'nonlinear', 'far-from-equilibrium' systems are far more abundant than 'linear' or 'steady-state' systems. In effect, as is often the case with theory succession in the sciences, the cases which were taken as the rule to which all cases ought ideally to be assimilated have come to be recognised as only a particular and indeed reasonably exceptional instance: 'today linearity or equilibrium is often seen as a special case and nonlinearity and far-from-equilibrium systems the majority of cases' (Protevi and Bonta 2004, p. 195 n. 10). This has implications, Protevi and Bonta assert, for what counts as reasonable expectations regarding our capacity to predict the behaviour of physical systems (since nonlinear systems are for various practical and principled reasons resistant to exact prediction), as well as for our understanding of the status of 'emergent' phenomena and of the objective reality of time. These developments are understood to be 'the scientific endeavors whose results prompted Deleuze' to formulate 'his ontology' (Protevi and Bonta 2004, p. 16).

In more recent work, Protevi (2013) has reiterated this view of Deleuze 'as providing a metaphysics of contemporary science', citing directly Deleuze's 'very clear self-description' from the 1981 interview noted above (p. 1).²³ Deleuze, he

²³ Where DeLanda (2002) emphasises that his is a *reconstructive* reading of Deleuze and therefore takes some defensive distance from the letter of Deleuze's texts in putting so strong an emphasis on their use of mathematical and scientific conceptual resources, Protevi (2013) is explicit that he takes the development of the metaphysics of contemporary science to be the project 'Deleuze in fact sees himself' as conducting (p. 1).

argues, ‘offers us a naturalist ontology that maps well onto wide-ranging current research projects that use nonlinear dynamic systems modeling’ (Protevi 2013, p. 1).²⁴ Such an ontology, Protevi (2013) states, insofar as it ‘can help us think of individuation’ (p. 1) in a certain way, ‘helps us see some of the philosophical significance’ (p. 4) of key ideas employed in modelling non-linear dynamic systems, systems that are now the object of study of all manner of ‘scientific fields [...], from geomorphology and meteorology in the earth sciences to ecology and genomics in the life sciences, economics and sociology in the social sciences, and neurodynamics and developmental biomechanics in the cognitive sciences’ (p. 1).

What starts to become clear in these descriptions by Protevi (2013) of the ‘utility’ (p. 1) of Deleuze’s philosophy is that what remains obscure in Protevi’s approach is what role *philosophy* is playing in the interaction between science and philosophy envisaged here. Thus, Protevi effectively inherits a problem I have already noted in DeLanda’s reading. At one point, Protevi (2013, p. 12) asks: ‘do working scientists need to know the Deleuzian scheme to understand the ontology of models?’ His answer, perhaps surprising given his allusion to Deleuze’s notion of the metaphysics contemporary science *needs*, is: ‘Of course they do not’ (Protevi 2013, p. 12). He is unwilling to acknowledge a deficit of knowledge or understanding (or whatever one might take philosophy to contribute) on the part of the scientist regarding the nature of her own conceptual, methodological and technical apparatus – a deficit for which it might have been thought that Deleuze’s

²⁴ ‘Naturalism’ is here understood as primarily an ‘antihumanist’ position, ‘in the Spinozist sense of [...] refusing a special status to human beings’ (Protevi 2013, p. 213 n. 2). I will have reason to return to and to scrutinise the notion of naturalism as it applies to Deleuze’s thought in chapter 4 of this thesis.

philosophy was to compensate. The philosopher learns from the scientist (and not least, the historian of philosophy finds in science a helpful hermeneutic framework for making sense of Deleuze's texts), but it is not clear that Protevi sees any central role for the reverse procedure.

Trying to discern the role of the philosopher in the work of the sciences in his reading of Deleuze, one could perhaps attribute to Protevi the view that Deleuze's philosophy of complexity science provides an amenable medium for the dissemination of the use of dynamic systems modelling techniques into new domains, particularly in the social sciences. Thus Deleuze's 'ontology' of complexity science would provide a basic, non-domain-specific framework from which new domains could trace the lines of an approach with ramifications for their own field. I find this suggestion a little strained, however, as it is unclear why a terminological detour through Deleuze's baroque and (for the purposes of the scientist) hopelessly general and imprecise conceptual apparatus should be a helpful tool for the transport of concepts and techniques from one scientific field to another. The spread of useful modelling techniques and conceptual innovations from one scientific field to another, and the hybridisation of fields this is wont to generate, seems to unfold quite without the need for philosophical supervision or assistance – as Protevi himself admits in his above-quoted remarks. The scientist does not need the philosopher to comprehend her own activity.

What then is the role of philosophy here? What does philosophy add to what the sciences in question are already doing? Protevi suggests, as I have shown, that Deleuze's philosophy helps us to extract from the general methodological approach underlying the interdisciplinary research programme of complexity science the latter's *philosophical significance*. Given that Protevi does not take this to be

primarily for the scientist's benefit, is this to be understood as an exercise in granting *philosophers* access to material that is important for their own activities? That is, is the value of Deleuze's philosophy that it translates complexity science into a language philosophers can understand? This does not seem to be the case, because Protevi, building on DeLanda's approach, is just as much concerned to use the language of complexity science as an interpretative frame through which to understand Deleuze's philosophical concepts as he is to elucidate the philosophical significance of complexity science in the language of Deleuzian philosophy. It seems that Deleuze's idiosyncratic terminology and style is no more readily accessible a medium than the terminology of the complexity sciences themselves.

What DeLanda, Protevi and other proponents of the scientific reading of Deleuze seem to struggle to articulate, then, is the nature of philosophy as Deleuze conceives it, and the *specificity* of philosophy's contribution to our intellectual lives.²⁵ Other than in some of DeLanda's remarks, these commentators seem reticent in attributing to Deleuze the view that philosophy collapses into science. Such a view would seem difficult to sustain given Deleuze's many strident proclamations of his own status as *philosopher*. And yet, this reading leaves philosophy's distinctive contribution to an encounter between philosophy and science, supposedly at the heart of Deleuze's philosophical project, unclear. In this thesis, I will present an account of

²⁵ For a couple of recent examples of this tendency to lose track of the difference between philosophy and the sciences in Deleuze's work, see Gangle (2014) and Calamari (2015). Éric Alliez, on the other hand, explicitly argues (2011; 2013) that the 'transdisciplinarity' of Deleuze's thought leads to an exit from philosophy, although the resulting notion of a *post-philosophical ontology* is not very clearly articulated. Alliez's conclusions are not in conflict with the main thrust of the argument of the present thesis, however, insofar as he identifies Deleuze's collaborative work with Guattari as the site of this post-philosophical transdisciplinarity, in contrast to the persistence of disciplinary philosophy in Deleuze's earlier writings.

Deleuze's metaphilosophy that allows us to get a clearer view of the relative statuses and positions of philosophy and science in Deleuze's early thought. In doing so, I hope not only to correct the metaphilosophical deficit in the scientific reading, but to show that a plausible non-scientific account of Deleuze's early metaphilosophy can be formulated.

In seeking to clarify what sort of relation between philosophy and science is supposed to obtain in Deleuze's thought, and what distinctive role, if any, *philosophy* is supposed to be playing, commentators are more often than not led to Deleuze and Guattari's final jointly authored work, *What Is Philosophy?* (1991). In this text, Deleuze and his co-author are explicitly concerned with the differences between philosophy, science and art. On this basis, the separation of philosophy and science in Deleuze's work is emphasised, with the consequence that the attribution to Deleuze of anything like a Quinean collapse of the distinction between philosophy and the empirical sciences (of the sort found in many defenders of so-called 'methodological naturalism' in contemporary analytic philosophy) is strongly disavowed. Alternatively, where something like a collapse of philosophy into science is indeed contemplated, commentators might appeal to Deleuze and Guattari's discussion of 'royal' and 'nomad' science in *A Thousand Plateaus*, identifying philosophy and science only on the condition that it is a 'nomad' or 'minor' science. I have noted both these approaches in DeLanda's work (as well as that of Isabelle Stengers).

Such an approach displays a problematic lack of concern for periodisation. It cannot simply be assumed that conclusions or ideas in the philosophy of science or in metaphilosophy that Deleuze formulates in the 1980s and '90s, and what is more in collaboration with a co-author (Félix Guattari), are representative of an attitude

under which Deleuze is already operating in the '50s and '60s (prior to ever having met Guattari). This sort of retrospective reading is, unfortunately, a general tendency in Deleuze scholarship: it is seemingly more common for scholars to endeavour to treat Deleuze's corpus as a more or less unified or unifiable whole, even to attribute to him positions which are composited from remarks made at various different stages of his work, than it is to see detailed studies of particular texts or periods of his thought. I find it hard to see how such an approach can be justified, and I will attempt to avoid the production of such ahistorical chimeras in what follows.²⁶

1.3 Critical readings

The present study is not the first to take a critical stance towards scientific readings of Deleuze's work. However, it aims to work through these criticisms in a greater degree of detail than has been attempted elsewhere, and, in the process, to develop a distinctive reading of Deleuze's early philosophy.

Amongst other commentators who have discussed philosophy and science in Deleuze from a non-scientific perspective, James Williams' work should be noted. Williams (2006) criticises DeLanda's reading of Deleuze for 'over-stressing the link between Deleuze and a particular science', and 'fus[ing] philosophical and scientific explanation' (p. 99). This is a consequence of DeLanda's inattentiveness to the 'critical stance with respect to scientific methods and theories' that Williams (2006) claims to observe in Deleuze's work, a stance which 'allows for change in scientific

²⁶ This is not to say that an attempt to discern continuities in Deleuze's work is wholly illegitimate; only that reading backwards from Deleuze's later works to his earlier works in search of such continuities has its risks. In the conclusion, I will comment on possible continuities between Deleuze's early and later work, but I will seek to do so on the basis of an analysis of the early work that does not rely on this sort of retrospective projection.

theories, but also – and more importantly – for scepticism with respect to the latest science and an awareness of the implications of earlier failures’ (p. 100). The problem, in effect, is that DeLanda’s reading binds the fate of Deleuze’s philosophy to the fate of specific, fallible empirical theories in a way which, according to Williams, misunderstands the intended status of Deleuze’s claims as *transcendental* claims.²⁷ Williams’ criticisms are apposite to the argument put forward in the present thesis, which is generally in keeping with the spirit of Williams’ remarks and will indeed appeal in places to a similar line of argument to that offered by Williams. Williams’ argument is made, however, in a brief article and in the context of a comparative study of Deleuze and Gaston Bachelard on the nature of theory change in the sciences. My argument will seek to build on the arguments and ideas Williams puts forward and explore the difficulties with the scientific reading in more detail. In the process, I will develop a reading of Deleuze’s philosophy which diverges on certain key issues from that offered in various works by Williams.

Also worthy of note is Todd May’s work. First of all, May (2005, p. 239) is one of the only commentators of whom I am aware to note the danger of misinterpretation that lies in using the conception of science developed in *What Is Philosophy?* as a lens through which to view Deleuze’s earlier references to science. The reason this would be a mistake, May (2005) argues, is that, in the latter, Deleuze ‘is not offering us a view of science that either conforms to or confirms his own philosophical project’, but rather ‘appropriating and often reworking scientific themes for his own philosophical purpose’ (p. 239). For Deleuze, May continues:

²⁷ In a 2010 interview with Peter Gaffney, DeLanda acknowledges this consequence of Williams’ reading, although he does little to satisfactorily respond to it (DeLanda and Gaffney 2010, pp. 328-331).

Philosophy is a project distinct from science. Its goal is neither to clarify science nor to offer it conceptual foundation. Science's role is neither to provide evidence for philosophy nor to illustrate it.

(May 2005, p. 254)

If Deleuze discerns in science resources relevant to his own project, May (2005) suggest, this is because 'both science and philosophy concern the virtual', although they do so in divergent ways (p. 254). However, despite his earlier warnings against falling back on the account of science given in *What Is Philosophy?* in order to explain Deleuze's appeals to scientific concepts in his early work, May (2005, p. 251 ff.) ultimately falls back on precisely such a move in his attempt to make sense of Deleuze's use of these resources. While the argument pursued in this thesis will be generally in step with May's approach, I hope to offer a more satisfying account of what is going on in Deleuze's early work when he appears to rely on specific conceptual developments in the sciences.

2 'Deleuzian' history of philosophy and anachronism

As a reading of Deleuze, the scientism (inadvertent or not) of Protevi and DeLanda is marked by anachronism, in the sense that it attributes to the early Deleuze concerns and motivations alien to his own philosophical context. This is because the formulation of such a reading has been motivated, in large part, by conflicts quite alien to the philosophical field of postwar Paris. The idea of a scientific Deleuze is, I would suggest, best understood as the product of those theoretical (but also, more broadly, institutional and 'academico-political') conflicts arising between scientifically-minded rationalists and so-called 'postmodern' cultural relativists in English-speaking (particularly US) academia in the 1990s. (More recently, as I will

explore in more detail in the conclusion of this thesis, it has played a role in the changing tides of intellectual fashion amongst Anglophone ‘continental’ philosophers.) Deleuze is presented as a ‘third way’: an unrepentant scientific realist at the heart of ‘post-structuralism’. In DeLanda’s work this is quite explicit (2002, pp. 1-2), but I think it is plausible to suggest that these sorts of institutional pressures have played an important role in surging up the influence of this kind of reading more generally.

That Deleuze scholarship should have become an arena in which this conflict plays out is explained by the importance of the Anglophone reception of mid-twentieth-century French philosophy (what would come to be known as ‘French Theory’) for the formation of the ‘postmodernist’ position that would become so prevalent in many humanities (and some social sciences) faculties in the English-speaking world from the late 1970s onwards (see Cusset 2008). Against this backdrop, DeLanda’s (2002) bid to paint Deleuze as a scientific realist of a stripe recognisable to ‘an audience of analytical philosophers of science, and of scientists interested in philosophical questions’ (pp. 1-2) is explicitly advertised as an attempt to show that not all French post-structuralist philosophers are ‘French Theorists’ in the above noted sense. In particular, DeLanda intends his reconstruction of Deleuze’s philosophy as an answer to the criticisms of physicists Alan Sokal and Jean Bricmont (1997; 1998), who had taken Deleuze and various other representatives of French Theory to task for their purportedly sloppy or downright nonsensical uses of mathematical and scientific terminology. This intervention was part of the aforementioned conflict raging at the heart of US academe between pro-science rationalism and postmodern relativism, and DeLanda’s concerted effort to vindicate in detail Deleuze’s use of scientific language as literal and meaningful, and

indeed philosophically illuminating, effectively deploys Deleuze as a tool in this polemic. I want to distance the early Deleuze from this anachronistic view by determining what sort of intervention Deleuze can plausibly be seen to make in his own intellectual context, something that strikes me as an appropriate precursor for a discussion of what relevance, if any, Deleuze's thought might have in our own intellectual context.

I envisage this thesis as a study in the history of philosophy. This is not the place for a detailed discussion of the proper aims and methods of the history of philosophy, a discussion which is only gaining in momentum, and consequently in depth and nuance.²⁸ However, it seems pertinent to offer some remarks on some of the central methodological assumptions guiding the present project – and how these relate to (and perhaps find themselves in tension with) Deleuze's own thoughts on the aims and methods of the history of philosophy.

I have noted above that the scientific reading of Deleuze is marked by anachronism, in the sense that its formulation is, in certain key respects, a response to an intellectual and academic situation that is not Deleuze's own. It is implicit in my aim to correct the misapprehensions of such a reading that I object to this anachronism, but it is in no way a given that anachronism is a vice in the history of philosophy (at least insofar as the latter is understood to be a *philosophical* rather than simply historical enterprise). In particular, Deleuze himself embraces certain

²⁸ See, for example, the range of positions represented in Lærke *et al.* (2013) and Sorell and Rogers (2005).

kinds of anachronism as a productive tool for philosophers engaging with historical texts.²⁹

The antipathy Deleuze expressed (in particular in his 1973 open letter to Michel Cressole) towards a certain form of history of philosophy is often noted (see Deleuze 1995, pp. 5-9).³⁰ John Sellars (2007) articulates the orthodox view of ‘Deleuzian’ history of philosophy when he states that the history of philosophy ‘may best be conceived as a creative encounter between two philosophers’ that ‘afford[s] the opportunity for the author to develop his own thoughts’; and that this approach is ‘at odds with the usual scholarly approach’, which demands, according to Sellars, that the work of history, at least ideally, ‘contain *absolutely nothing* added by the scholar at the level of philosophy’ (p. 556). The latter point, namely that Deleuze’s approach to the history of philosophy is in tension with mainstream history of philosophy, is questionable – perhaps all the more so when the ‘mainstream’ in question is contemporary Anglophone history of philosophy rather than mid-twentieth-century French history of philosophy.³¹ If Deleuze has something to add to

²⁹ For a presentation of Deleuze’s approach to the history of philosophy formulated explicitly in terms of the productivity of anachronism, see Neil (1998).

³⁰ For an illuminating account of Deleuze’s evolving attitude towards the history of philosophy, and the latter’s place in his thought, see Smith (2012a).

³¹ See Lærke (2015): ‘Even though Deleuze himself was eager to distance himself from historians, and to depict his readings as highly unorthodox, [...] Deleuze’s work in the history of philosophy is in reality much less exotic than what both Deleuze and his commentators would have us believe’ (p. 394). Lærke (2015) rejects the ‘reviled figure of the “traditional historian of philosophy”’ – ‘pedestrian historians of philosophy engaged in pointless repetition opposed to the inventive Deleuzian reader engaged in inventing new concepts in conversation with the great philosophers’ – as ‘a straw man’ (p. 395). ‘[T]here is, in the end, nothing particularly avant-garde or wildly unorthodox’ about Deleuze’s historical studies; ‘[t]hey are just very good readings alongside other very good readings that should be allowed to inform each other’ (Lærke 2015, p. 395).

contemporary debates about the aims and methods of the history of philosophy, it is not overly plausible that this contribution lies in the rejection of a purist antiquarianism. Such an approach would seem to be fairly marginal in English-speaking academe today, at least in philosophy departments. In the latter institutional context, the need to justify the *philosophical* merit of the history of philosophy in an atmosphere dominated by analytic philosophy's traditionally anti-historical attitude has fostered a 'presentist' approach focused on reading historical texts in terms of, and justifying the worth of such reading in relation to, current philosophical problems and assumptions – an approach nearer to Deleuze than it is to either traditional antiquarian history or modern social-scientific history.

Nevertheless, it is no doubt still true that criticising a reading of Deleuze's philosophy for its anachronism is not a particularly 'Deleuzian' gesture – especially given that I am perfectly happy to acknowledge that this anachronism has led to a great deal of philosophically interesting and productive work. I should clarify, then, the attitude to anachronism expressed here, and how it underlies the aims of the present study.

What, if anything, is the problem with anachronism in the history of philosophy? What is the problem with anachronism in the history of postwar French philosophy? I find myself sympathetic to Yitzhak Melamed's (2013) view that anachronism 'deprives us of the rare opportunity to challenge ourselves in a critical dialogue with intelligent views that are different from ours' (p. 274). Part of what is valuable about the history of philosophy – and this, I think, *is* a Deleuzian point – is that the demands of historical and contextual reconstruction force us to enter into and try to make sense of an intellectual milieu different from our own, and so force us to recognise the contingency of our own intellectual habits. This is a general point. A

more specific point pertains to the particular instance of anachronism in question, namely the scientific reading. If I object to this particular reading on the grounds of its anachronism, it is because this anachronism obscures what I take to be (and will argue to be in the course of this thesis) Deleuze's more interesting contribution to contemporary debates about the nature of philosophy and its relation to science. That is to say that the particular dynamics of the Anglophone reaction to perceived French 'postmodernism' and of the defensive strategies of Anglophone 'continentalists' in response to their analytic critics has obscured aspects of Deleuze's relation to the sciences that can be interesting for our current situation. I will return to these points in the conclusion.

So, I want to get a more accurate picture of what sort of intervention Deleuze is in fact making in his early work given the philosophical context in which this intervention was originally made; but I want to do this because I believe that doing so gives us an insight into a different Deleuze, one of more interest and relevance for contemporary metaphilosophical debates than the Deleuze offered by the scientific reading.

This being said, I am nevertheless not of the view that the history of philosophy *needs* to provide some justification of itself in terms of its relevance for current philosophical debates. It seems to me legitimate to claim, in the words of Lærke, Smith and Schliesser, that 'the history of philosophy is to be studied and understood for its own sake and on its own terms, even when the problems of interest to the figures in this history have since fallen off the philosophical agenda' (in the introduction to Lærke *et al.* 2015, p. 1). The interest of a contextually sensitive reading of Deleuze's early philosophy is thus not dependent, as I see it, on Deleuze's relevance for currently prevalent philosophical debates – despite the fact

that, as I will indicate in the conclusion, his thought's contemporary relevance is brought out more clearly by a more context-sensitive reading.

A worrying prevalent tendency in the literature on Deleuze towards which I am not sympathetic is the view that the only legitimate way to read Deleuze is a 'Deleuzian' way; that if Deleuze is to be an object of study for the history of philosophy this must be history of philosophy conducted in a mode that he would have found appealing. This might be expressed as the view that only Deleuzians can read Deleuze. Such a view strikes me as ironic given that – regardless of whether or not Deleuze would have been sympathetic to the present study – it is certainly true that he was disdainful of 'disciples', and of any philosophy that displayed a tendency towards the formation of a 'school'.³² In this respect, I am not convinced that yet another self-consciously Deleuzian reading of Deleuze would be any more in keeping with the spirit of *le maître*.

It is worth mentioning at this point that Simon Duffy has argued against taking too seriously debates in Deleuze scholarship concerning the relation between philosophy and science for reasons that are pertinent to the methodological questions presently at hand. The disagreement about Deleuze's attitude to the sciences that lies at the heart of the so-called 'scientificity polemic' is, according to Duffy (2013, pp. 167-169), a consequence of the sort of methodological disagreement I have noted here, namely a disagreement about whether the historian of philosophy should be engaged in contextual reconstruction of historical texts or appropriating them as resources with a view to tackling current philosophical problems. Duffy concludes from this that the key players in the 'polemic' are often simply engaged in different

³² See Deleuze's comments on 'Wittgensteinians' in his *L'Abécédaire* (Deleuze and Parnet 2004).

enterprises – that is, they are talking past each other. Commentators such as DeLanda are openly ‘engaged in the project of *redeploying*, more or less adequately aspects of Deleuze’s philosophy specific to a particular task at hand in other domains’ (Duffy 2013, p. 168 [my emphasis]). This approach should not be conflated with ‘the project of explicating the arguments drawn from the history of philosophy and the history of various disciplines in science that Deleuze draws upon in the construction of his philosophy’ (Duffy 2013, p. 168). Consequently, much of the force of the debate is supposed to come from a lack of clarity of aims, or at least a mutual misunderstanding of aims, since ‘the only basis for these different strategies to be perceived as competing with one another is if the proponent of one approach makes the false claim to be working under the jurisdiction of the other approach’ (Duffy 2013, p. 169).

By way of response to this thought, I would first note that I am, as I have said above, more than happy to acknowledge the great philosophical worth of the sort of anachronistic readings articulated by DeLanda and Protevi. In this respect, I am not overly committed to the idea of a ‘polemic’, and I am happy to acknowledge that this is more than one legitimate way in which Deleuze’s text can be used. However, I am not convinced that reconstructive projects such as DeLanda’s are capable of remaining wholly agnostic regarding the historical and textual accuracy of the readings they put forward, at least insofar as they are offered as, precisely, *readings* of Deleuze. While I understand Duffy’s contention, it seems to me that so long as scientific readings are offered as attempts to illuminate Deleuze’s philosophy, rather than simply as autonomous projects inspired by Deleuze’s work, there will be room for a more historically attentive corrective to these readings. It is such a corrective that I will try to formulate in this thesis.

3 Structure of the thesis

I will structure my exploration of the role of science in Deleuze's early philosophy as follows:

In chapter 1, I will set Deleuze's early work in the context of broader debates in philosophy in France in the 1950s and '60s by outlining the general contours of some of these debates and attempting to locate Deleuze's philosophy within the logical space they form. In particular, I will consider how Deleuze positions himself in relation to his then more prominent teachers, as this will help us to see how Deleuze tries to carve out his own distinctive position. I will show how Deleuze seeks to produce a reconciliatory position which brings together resources from across the spectrum of available philosophical possibilities, although I will tentatively conclude that his focus on creativity ought to lead us to raise questions as to the extent of his affinity with scientific, as opposed to literary, culture.

In chapter 2, I will turn to a more detailed characterisation of Deleuze's metaphilosophical stance. In particular, I will consider Deleuze's conception of philosophy as *critique* and as *concept creation*, with a view to clarifying his understanding of philosophy as a 'critical-creative' enterprise. In the process, I will show how critical-creative philosophical thinking relates, for Deleuze, to scientific cognition. I will argue that Deleuze takes the role of critical-creative thinking to be quite different within philosophy and science.

With this account of Deleuze's understanding of philosophy as background, I will then turn, in chapter 3, to an examination of Deleuze's use of scientific and mathematical concepts. I will argue that the philosophical position Deleuze adopts in his early work is not essentially dependent on these terminological resources; rather,

they provide him with the means to illustrate and express philosophical positions that are articulable and defensible independently of the use of these resources. Consequently, Deleuze's early philosophy is not a response to, nor is it dependent upon, specific developments in mathematics or the exact sciences.

In chapter 4, I consider the broader theme of immanence as it appears in Deleuze's early work, and consider whether a connection can be drawn between Deleuze's concern with immanence and the question of philosophy's relation to the sciences. An understanding of the full range of resonances and the full significance of this notion of immanence in Deleuze's early work, it will be argued, rather than serving to establish a connection between philosophy and science, instead serves to further clarify the divergence between philosophy and science in Deleuze's thought that is explored in chapters 2 and 3.

I will conclude the thesis with some reflections on what Deleuze's philosophy might contribute to our understanding of the proper relation of philosophy to the sciences today. Against the approach of proponents of the scientific reading, my concluding suggestion will be that Deleuze's early metaphilosophical reflections help us to think about ways in which philosophy can resist the demand to become 'scientific', and – perhaps more importantly – reasons why we should resist such a demand.

Chapter 1

Situating Transcendental Empiricism *Scientificity, Structuralism and the Specificity of Philosophy in 1950s and '60s French Thought*

Introduction

As I have outlined in the introduction to the present thesis, one of the problems with the scientific interpretation of the relation between philosophy and science in Deleuze's early work is the anachronistic lens through which it views this relation. In particular, its understanding of the significance of Deleuze's engagement with the sciences is coloured by the rhetorical demands of tensions within English-speaking (particularly North American) academe concerning the proper attitude of the humanities and social sciences towards the natural sciences and the role of 'French Theory' in that debate. It is in response to these polemics that Manuel DeLanda has offered a reading of Deleuze in terms of the concerns of contemporary Anglophone philosophy of science, concerns quite alien to Deleuze's native intellectual milieu. This chapter begins the work of correcting the distortions engendered by this anachronism by considering the context of Deleuze's early work, that is, the French philosophical field of the 1950s and '60s.

I will argue that Deleuze's location within the philosophical field does not indicate that he embraces the idea of a particularly close affinity between the sciences and philosophy. Indeed – and this claim will be cashed out further in coming chapters – the conception of philosophy Deleuze is working to articulate in

the '50s and '60s is in tension with a project that would seek to subject philosophy to the demands of 'scientificity', either in terms of a disciplining¹ of philosophy by the sciences or even in terms of conceiving philosophy as a discipline with its own distinctive standards of 'scientificity' (*à la* Bergson).²

My discussion will be structured as follows. In §1, I will examine the role an engagement with the sciences has played in French philosophy, with a view both to showing that Deleuze's interest in the sciences is not particularly distinctive in its context and to giving a sense of the structure of the philosophical field in France during this period. I will suggest that Deleuze adopts a reconciliatory stance to the key tensions that structure the field. In §2, I will examine the nature of this reconciliatory approach by elucidating the ways in which Deleuze situates himself in relation to more well-established figures within the field, namely Ferdinand Alquié, Martial Guérout and Jean Hyppolite. These three figures effectively form a spectrum of positions between a literary model of philosophy orientated towards sub-conceptual experience (Alquié) and a quasi-scientific model of philosophy orientated towards the autonomous dynamics of conceptual systems (Guérout), with Hyppolite attempting to find a philosophically satisfying middle ground. Deleuze, I will argue, formulates his position as an attempt to construct an alternative middle

¹ For this notion of philosophy as needing to be 'disciplined' by extra-philosophical (presumably less 'wayward') research areas, see Williamson (2007, pp. 285-286). This idea should be distinguished from Deleuze's understanding of the productivity for philosophy of maintaining a connection to its 'outside', which has nothing to do with 'disciplining' philosophy in Williamson's sense.

² Indeed, from at least the mid-'60s – at which point he begins to criticise the idea of 'method' whilst continuing to emphasise that one of Bergson's key innovations was his method – this would seem to be one of Deleuze's key disagreements with Bergson (*NP*, pp. 118-126/pp. 103-110; Deleuze 2008a, p. 12, p. 47, pp. 60-65; *DR*, pp. 213-216/pp. 164-167; compare Deleuze 1988, chap. 1). On Bergson's insistence on the importance of a rigorous philosophical method, see Janicaud (1997, pp. 169-178).

ground to that offered by Hyppolite's Hegelianism. In §3, I examine Deleuze's anti-Hegelian alternative to Hyppolite's reconciliatory position (i.e. transcendental empiricism) in more detail, considering first Deleuze's reasons for rejecting Hyppolite's position, before looking at how transcendental empiricism differs from this position (and how its reconciliation of Alquié and Guérout is cashed out). Whilst the resulting position refuses to emphasise the role in thought of sub-conceptual experience *at the expense* of the role of concepts and ideal structures, it will nevertheless be argued that Deleuze's reconciliatory position airs more on the side of the literary than the scientific.

1 Science as object, problem and ideal in postwar French philosophy

In this first section, what I want to address is an idea that seems to recurrently appear in the background of scientific interpretations of Deleuze's relation to science, namely that Deleuze's engagements with the sciences, particularly mathematics and the hard sciences, are distinctive, even idiosyncratic, in the context of twentieth-century French philosophy.³ This could not be further from the truth. Deleuze's engagement with the sciences hardly serves to distinguish him from a great number of his compatriotic contemporaries – even those who might be presumed to be the likely bearers of DeLanda's distinctly accusatory label, 'postmodernist'.

³ DeLanda (2002), for example, foregrounds the distinctiveness of Deleuze's scientific realism, suggesting that this sets him apart from the sort of social constructivism associated with 'postmodernism' (pp. 1-3); whilst Protevi contrasts 'the Deleuze and science connection' to 'a deeply entrenched suspicion of science on the part of many phenomenologists and post-phenomenologists' (DeLanda *et al.* 2005, p. 67).

The changing faces and fortunes of philosophy in the modern era are entangled with the emergence and development of modern science. A central aspect of this entanglement is the way in which transformations in the scope of the sciences, in the way in which their ‘scientificity’ is conceived and in the intellectual and cultural status of being able to proclaim one’s intellectual activity ‘scientific’, particularly relative to other kinds of intellectual quality – coupled of course with corresponding transformations in the social and institutional parameters of intellectual activity – have affected and been affected by transformations in how *philosophy* is conceived, its role and value, and renegotiations of its (*de jure* and *de facto*) borders. Perhaps the most striking product of this ongoing process is the separation of philosophy and the sciences, generally considered an artefact of the nineteenth century, which has resulted in the philosophy department finding itself – to the discomfort of some – in the humanities faculty, institutionally segregated from the sciences.

The reception of French philosophy in the English-speaking world in the second half of the twentieth century has tended to focus on those thinkers, and those aspects of the work of these thinkers, primarily concerned with literature and the aesthetic (as well as politics), whilst downplaying or ignoring philosophical engagements with the sciences, particularly where these engagements are broadly sympathetic. In this way, an image of philosophy in France in the twentieth century as essentially humanistic and literary in spirit, rather than scientific and rationalistic, and perhaps even as hostile to science and rationality, has for some time prevailed both amongst its enthusiasts and its detractors. This image is liable to distort. That humanistic culture has played an important role in French philosophy, whilst, likewise, philosophy has played an important role in humanistic culture in France, is

no doubt true. The importance of philosophy in the French education system is inseparable from the importance of the humanities in French intellectual culture, and the relative decline of the latter (relative to the growing cultural prestige of the sciences) has contributed to a growing insecurity of the former. It is also true that whilst the professionalisation of philosophy as an academic discipline in the English-speaking world has effectively succeeded in establishing a tangible distance between philosophers on the one hand (that is, those who feel themselves entitled by their institutional situation to adopt the title of ‘philosopher’) and literary culture and the public sphere on the other, in France (particularly during the period with which this study is concerned), the borders between academic philosophy and the literary avant-garde, not to mention academic philosophy and engagement in politics and the public sphere, have been persistently porous.⁴ (For those Anglophone philosophers who insist on identifying philosophy with the policing of norms of academic communication, these dalliances with extra-academic means of expression are surely an especial affront.) Nevertheless, it is impossible to understand the significance of debates concerning the nature and value of philosophy in France in the twentieth century, the evolution and mutation of strategies for determining philosophy’s specificity, without an appreciation of the importance of science as both an object and a model, and in some cases a challenge, for philosophy.

One point to note, then, is that France plays host to a rich heritage of philosophical thinking about the sciences. Going back to Descartes and the French Enlightenment, through the positivism of Comte and Littré and the neo-Kantianism of Brunschvicg, carrying on into the middle of the twentieth century in the history

⁴ See Fabiani (1988, pp. 163-164).

and philosophy of science of Koyré, Bachelard and Canguilhem and the philosophy of mathematics of Cavailles, Lautman and Vuillemin, rationalistic philosophical engagements with the sciences have been a persistent feature of French philosophy. The philosophy of science (or *épistémologie*) has steadily maintained a solid academic presence, unperturbed by the changing tides of intellectual fashion. Thus, the 1940s, the heyday of Sartrean existentialism with its literary bent and distinct lack of interest in the sciences, saw the publication not only of *Being and Nothingness* but of Bachelard's *La Philosophie du non* and *Le Rationalisme appliqué*, works of epistemology in a staunchly critical-rationalist vein.

A further point is that a degree of scientific competence, and an interest in the sciences, has not, in France, been reserved for specialist *épistémologues*. One can expect a degree of familiarity with the sciences amongst most philosophers educated in the first two thirds of the century, since between 1904 and 1965 a science component was a compulsory part of the *agrégation* examination taken by all those wishing to pursue teaching careers in philosophy (the favoured career trajectory for philosophy graduates).⁵ When a philosopher like Merleau-Ponty, who ultimately wants to assert the limitations of empirical science and the incapacity of 'objective' thought to achieve an 'originary' grasp of human subjectivity, nevertheless bolsters his phenomenology of perception with cases drawn from contemporary psychological research, he thereby draws on a scientific education shared by his fellow *agrégés*. Even prior to this institutionalisation of science education in the

⁵ See Schrift (2006): 'Until 1965, a student of philosophy was required to undertake advanced work and be certified in one of the sciences, whether hard (physics, mathematics, chemistry, biology) or soft (psychology, ethnology, prehistory) in order to qualify to take the *agrégation de philosophie* and receive a teaching credential in philosophy' (p. 41). Also see Schrift (2006, p. 41 n. 3 and n. 5).

careers of academic philosophers, those currents of philosophy in France that have sought to determine the limitations of empirical science and to regulate its expansion into the sphere of humanistic culture – which is to say, those currents of thought one might expect in, say, a German context to revel in irrationalism and a cultivated ignorance of the sciences – have tended to attempt to confront the sciences in an informed and sensitive manner: Bergson is of course the exemplar here.

A third point to note is that in France, as in other national contexts, since at least the second half of the nineteenth century, a central aspect of metaphilosophical debate has been the question of how to situate philosophy in relation to the sciences. If the sciences have posed a challenge to philosophy in France, this is not necessarily due to any explicit polemical intent – although no doubt such polemics have occurred. Rather, the very existence of the sciences, insofar as they have emerged from philosophy to become autonomous disciplines, has forced philosophers to reconsider the scope and nature of their enterprise as an enterprise that must now define its specificity in relation to these disciplines that can no longer be taken to fall within its remit. This challenge can only be made all the more pressing as ‘scientificity’ gains ever greater cultural prestige, since the need for these high status disciplines to separate themselves from philosophy in order to realise their full scientific status might seem to imply a devaluing of what remains within philosophy. Questions of the role and value of philosophy in France from the late nineteenth century to today are thus hard to separate from questions of the specificity of philosophy in relation to the sciences.

Consequently, different strategies and responses have emerged by which philosophers seek to define the role and value of their own activity and its specificity in relation to science. Conceptions of philosophy can be distinguished by whether

philosophical activity is in some sense subordinated to scientific activity – as is the case when philosophy is conceived (in a neo-Kantian fashion) as carrying out some kind of methodological housekeeping, disposing of obstacles to scientific progress – or rather goes beyond (*dépasse*) the limitations of scientific thought to achieve a ‘higher’ mode of intellectual activity. These are not the only options: in *What Is Philosophy?*, for example, Deleuze and Guattari attempt to reject this hierarchical conception and conceive science and philosophy as simply ‘adjacent’ modes of creation.⁶ There is also the possibility that the two poles can bleed into one another: even when the philosophical work of reflection is carried out in a spirit sympathetic to science, or even rhetorically subordinated to the sciences – as is the case with the neo-Kantian conception of philosophy – this nonetheless testifies to the belief that the sciences are not equipped to carry out their own methodological housekeeping, and correspondingly that an extra-scientific body – traditionally speaking, philosophy – is required to take charge of the task of ‘reflection’.⁷ These nuances aside, the point is that an important part of French philosophers’ understanding of the nature and value of their own activity has consisted in its demarcation from the activity of the gradually coalescing figure of the scientist (*le savant, le scientifique*).

⁶ For an account of the rejection of disciplinary hierarchies in Deleuze’s later work, see Rae (2014, esp. chap. 8).

⁷ The dispute between Pierre Bourdieu and Jacques Rancière is emblematic of the ongoing struggle over the rights to critique and its connection to the question of the relation between philosophy and science in French intellectual life. Bourdieu’s (2001) insistence that the social sciences must engage in a rigorous practice of ‘auto-objectification’ is part of an ongoing bid to wrestle this responsibility for meta-criticism away from philosophers and place it in the hands of scientists themselves. Meanwhile, Rancière’s (2003) critique of the ‘authority’ of science in Bourdieu’s work, whilst couched in political terms, can also be seen as a bid to assert the rights of philosophy over science as the activity most capable of carrying out critical reflection (pp. xxv-xxviii, p. 165 ff.).

Where conceptions of philosophy differ, divergent attitudes towards the sciences are often not too far beneath the surface.

The image of twentieth-century French philosophy as participating primarily in humanistic rather than scientific culture thus needs to be tempered and nuanced by an awareness of the persistent philosophical interest in the sciences in France, the high level of scientific competence possessed by even those ultimately keen to subordinate the scientific to the philosophical in the hierarchy of modes of intellectual activity, and the importance of the relation between philosophy and science for debates about the role and value of philosophy. That Deleuze's familiarity with and interest in mathematics and the sciences were far from exceptional should thus be apparent. If anything, what is striking about Deleuze, in relation to his contemporaries, is his relative silence on 'epistemological' issues (in the French sense).

1.1 Philosophy's changing relation to the sciences in the 1950s and '60s

The importance of the relation between philosophy and the sciences for debates about the role and value of philosophy in France is manifest in the 1950s and '60s, the decades during which Deleuze composed his early works and pursued the line of thought that culminated in the publication in 1968 of *Difference and Repetition*. In this period, one of the most important factors determining the shape of metaphilosophical debate in France was the increased status, especially considered relative to philosophy, of the human sciences (*les sciences de l'homme*) –

particularly cultural anthropology, psychoanalysis and linguistics.⁸ Particularly relevant is the way in which this increase in the status of the human sciences puts pressure on certain established strategies for conceiving the specificity of philosophy, creating a tension that gives rise to the production of new philosophical possibilities and a corresponding reframing of the philosophical field. Deleuze's 'transcendental empiricism' is one of these new philosophical possibilities opened up by the conditions of the human sciences' postwar challenge to philosophy. But it remains to be seen in precisely what sense this is the case, and what this implies for the relation between philosophy and science in Deleuze's early work.

What role does a confrontation with the sciences play in the changing dynamics of metaphilosophical debate in France in the '50s and '60s? Three factors are especially relevant here: (i) the general conceptions of philosophy available at the beginning of this period; and the way in which these conceptions are challenged by (ii) the expansion in scope of credibly 'scientific' activity, and (iii) the professed stakes of the conception of scientificity employed in this connection. How are these factors connected, and how does the manner of their connection lead to new metaphilosophical strategies characterised by reappraisals of philosophy's relation to the sciences?

Existentialism and French phenomenology are, generally speaking, characterised by a conception of philosophy's specificity couched in terms of the specificity of philosophy's proper object or domain of inquiry, namely human existence, experience or subjectivity – *la réalité humaine* (Henry Corbin's French translation of Heidegger's *Dasein*). Philosophy's specificity as an intellectual

⁸ See Bianco (forthcoming, §2); Bourdieu and Passeron (1967); Pinto (1987, p. 62 ff.); Schrift (2006, chap. 4).

activity is thus indexed to the specificity of its object. The latter is understood, in part, in terms of the resistance of human existence or experience to effective study by *savoirs positifs* (objective, empirical, third-personal modes of inquiry). Consequently, philosophy's specificity will also have a methodological component – that is, the philosophical method will have to be differentiated from that of the empirical sciences insofar as philosophy's proper object is characterised by a resistance to the epistemic techniques of the sciences.⁹

The wave of attempts associated with Deleuze's generation to construct new conceptions of philosophy can be seen as a response to the challenge to this metaphilosophical strategy posed by the advancement in the status and self-confidence of the human sciences described above. The nature of this challenge is quite straightforward. If philosophy's specificity relies upon the resistance of the human sphere to scientific study, then a convincing scientific inquiry into this sphere poses a challenge to the presuppositions of this metaphilosophical strategy. If the role and value of philosophy is grounded in the need for a philosophical anthropology, which is in turn grounded in the impossibility of a scientific anthropology, then the construction of a plausible scientific anthropology is in a position to undermine philosophy's role and value.¹⁰ For those aspiring philosophers

⁹ Even Merleau-Ponty (2002), who is far more positively inclined towards and engaged with the empirical sciences than Sartre, insists that phenomenology 'is from the start a foreswearing [*désaveu*] of science' (p. ix).

¹⁰ To nuance this point a little, it is not that phenomenology is unable to accommodate the pronouncements of a scientific anthropology, so much as that it is unable to do so unless the theoretical significance of these claims is firmly kept in place within an 'empirical' perspective. As Bourdieu and Passeron (1967) suggest, it is the theoretical ambitiousness of Lévi-Strauss' structural anthropology which allows it to pose a threat to philosophical anthropology, insofar as it cannot easily be put in its place by accusations of 'positivism'.

for whom phenomenology or the philosophy of existence might have provided a fruitful philosophical approach – namely, those wishing to be philosophical ‘producers’ rather than simply ‘reproducers’ (Fabiani 1988, pp. 164-167) – but who found themselves impressed by the renewed claims to scientificity of the human sciences, the need and opportunity for the formation of a new conception of philosophy became apparent.

A key factor here is that the human sciences’ claim to scientificity took the form of a claim to autonomy from philosophy (see Boudieu and Passeron 1967). Hence, the assertion of the possibility of a scientific study of human phenomena was part of an assertion of the possibility of the *non-philosophical* study of human phenomena. The polemic between Sartre and Lévi-Strauss,¹¹ as well as Lévi-Strauss’ debate with Paul Ricœur,¹² serve to indicate that both proponents of phenomenology and of the new anthropology saw an empirical science of the human sphere as potentially undermining the methodological presuppositions of humanistic philosophy (as, in a slightly different way, does Canguilhem’s (2005) critical response to the phenomenological critique of Foucault’s ‘archaeology’).¹³

Thus, in the face of a shift in the balance of power between philosophy and the human sciences, various philosophical projects emerge which are engaged in a reappraisal of science and of the relation between philosophy and the sciences. To

¹¹ See Lévi-Strauss (1966, chap. 9); Schrift (2006, pp. 46-48); and Dosse (1997a, pp. 232-236).

¹² Ricœur (1963) and Lévi-Strauss (1963); see also Dosse (1997a, pp. 236-238).

¹³ Also note the fact that Simone de Beauvoir’s (1949) positive reception of Lévi-Strauss’ work is based on the assumption that ‘Lévi-Strauss refrains from venturing onto philosophical terrain, never abandoning rigorous scientific objectivity’ (p. 949).

take a few examples, consider Althusser's Marxist epistemology;¹⁴ the 'Lacano-Althusserian' project of Althusser's ENS students in the Cercle d'Épistémologie, documented in the journal *Cahiers pour l'analyse* (Hallward and Peden 2012); Foucault's (2002) 'archaeology of the human sciences'; or indeed Derrida's (1997) new 'science' of writing, 'grammatology'. Derrida encapsulates something of the shared spirit of these projects in describing his work as the product of a 'concern that I shared with a fair few people at the time [...], to substitute for a phenomenology *à la française* [...], little concerned with scientificity and epistemology, a phenomenology turned more towards the sciences' (Derrida, in Janicaud 2001, p. 93 [my translation]). 'We were very much occupied', he continues, 'with the question of scientific objectivity' (Derrida, in Janicaud 2001, p. 93 [my translation]). Most of the projects named above were not as comfortable as Derrida with continuing to associate themselves with phenomenology; the key part of Derrida's statement is rather this dissatisfaction with the attitudes towards the sciences promulgated by 'phenomenology *à la française*', and a corresponding sense of the need to pay greater attention to 'epistemological' questions and to reconceive the nature and value of philosophy accordingly.

While some of those educated as philosophers at this time would be sufficiently convinced by the human-scientific challenge to philosophy to switch disciplines and forge academic careers in the human sciences themselves – which 'recruited numerous researchers and teachers from amongst the philosophers' in this

¹⁴ '[F]rom Plato to Husserl and Lenin [...], by way of Cartesian philosophy, eighteenth-century rationalist philosophy, Kant, Hegel and Marx, the philosophy of science is much more than one part of philosophy among others: it is philosophy's *essential* part, to the extent that, at least since Descartes, science, the existing sciences [...], serve as a *guide* and a *model* for every philosophical reflection' (Althusser, in Macherey 1998, pp. 161-162 [original emphasis]).

period (Pinto 1987, p. 77 [my translation]) – for those still wishing to identify themselves as philosophers, this renewed interest in epistemology and in philosophy’s relation to the sciences provided a means to respond to the challenge (Pinto 1987, pp. 77-78). These projects can be seen as an attempt by a generation of up-and-coming philosophers (spearheaded by those, like Deleuze, who had completed their pre-doctoral tertiary education, and thus were able to begin academic careers, in the late 1940s) to map out a new philosophical space outside the ‘humanism’ of French phenomenology – which in practice meant outside the philosophical options presented to them by their teachers.

The need for a new space of this kind is connected to the position of these relatively young academics within the system of academic philosophy in France, as well as to the role that had been played, for the previous generation of academic philosophers, by existentialism and phenomenology. In effect, what phenomenology and the philosophies of existence had provided for the generation prior to Deleuze’s was an alternative to academic orthodoxy, which is to say an alternative way of doing philosophy to that offered by the orthodox academic practice of scholarly commentary characteristic of the traditionalist history of philosophy which dominated *la philosophie universitaire*. Those philosophers of Deleuze’s generation for whom the idea of a defeat of ‘humanist’ philosophy at the hands of the human sciences was a compelling intellectual event were thus generally those, like Deleuze himself, eager to find alternatives to academic orthodoxy, but for whom phenomenology no longer seemed an appealing such alternative.¹⁵ This search for an exit from academic orthodoxy, a subversiveness which seems to evolve out of more

¹⁵ This ambivalence towards academic orthodoxy tends, as Fabiani (1988, p. 165) has noted, to be correlated with a relatively marginalised academic position. See also Bourdieu (1988, pp. xviii-xix).

traditional ideas of the freedom of philosophical thinking from the mundanities of quotidian academic work (Fabiani 1988, pp. 159-60, pp. 170-1), contributes to explaining why these philosophers were not compelled by the challenge to phenomenology to take up the broadly neo-Kantian project of post-Bachelardian epistemology and history of science, since the latter, although relatively marginalised by traditionalist history of philosophy, is far from breaking with the prevailing norms of conventional research culture.

For many of these aspiring or relatively institutionally marginalised philosophers, the term ‘structuralism’ would come to seem an appropriate one to designate this variegated space of new philosophical possibilities.¹⁶ Structuralism effectively replaced existentialism as the dominant orientation of a philosophical ‘avant-garde’¹⁷ populated by academics with an ambivalent relationship with the mainstream of their discipline, in search of ‘new means of philosophical expression’ (*DR*, p. 3/p. xxi).¹⁸

One key aspect of philosophers’ self-identification with structuralism in the 1960s is an appropriation of the human-scientific challenge to philosophy (which had proclaimed itself ‘structural’ – ‘structural anthropology’, ‘structural linguistics’, etc. – although its proponents generally took their distance from the notion of a structural-*ism* taking form within the philosophical and literary avant-garde (Dosse

¹⁶ ‘Not long ago we used to ask: What is existentialism? Now we ask: What is structuralism?’ (*DI*, p. 239/p. 170)

¹⁷ I adopt this notion of a philosophical avant-garde in twentieth-century French philosophy from the sociologist of philosophy Louis Pinto (1987).

¹⁸ On the formation of ‘structuralism’ as an umbrella term for a space of possibilities for a new generation of the philosophical avant-garde, see Balibar (2003) and Pinto (2009, chap. 4).

1997a, p. xxiv; Pinto 2009, pp. 219-220)),¹⁹ and a displacement of this challenge such that it ceases to be an external challenge to philosophy *tout court* and is recommissioned as an internal challenge to a ‘humanist’ paradigm in philosophy, represented most exemplarily by Sartre and the archetype of the *intellectuel engagé*. Whilst the use of the term ‘structuralism’, and the project of constructing a philosophical structuralism or a structuralism in philosophy, might thus seem to indicate a *scientistic* or at least scientific or quasi-scientific intent, in the sense of taking the sciences as a model for philosophy or even of closing the gap between philosophy and science, this does not, in practice, prove to be the case. Rather, philosophical structuralism turns out to be a broad church, incorporating a spectrum of attitudes towards the human sciences and science more generally. Thus, although the space of positions that emerges under the rubric of philosophical structuralism is in part motivated by a renewed attentiveness to epistemological questions and by a dissatisfaction with established ways of framing philosophy’s relation to the sciences, an adherence to a ‘structuralist’ philosophical project cannot be taken, in and of itself, to determine a particular attitude towards the sciences. Consider, for example, Foucault and Derrida.²⁰ Both associated with philosophical structuralism, Derrida’s (e.g. 1997) work of the mid- to late ’60s is engaged in a critique of the claims of the human sciences to be able to escape the horizon of ‘metaphysics’, and consequently a critique of the very idea of science as something extra-philosophical; whilst Foucault’s (2002) work of the same period assimilates the tools of ‘positive’

¹⁹ See Milner (2008, p. 277 ff.) for an account of the distinction between *structuralism* and the structural project in the human sciences as a project of renewing the scientificity of the latter.

²⁰ I follow Pinto (2009, pp. 283-285) in taking Foucault and Derrida as representative of divergent attitudes towards the relation between philosophy and science *within* philosophical structuralism.

science in the service of a project which ultimately proclaims its philosophical pretensions. Foucault's work thus exhibits a far more positive attitude towards the sciences, whereas Derrida's attitude is essentially critical²¹ – although it is noteworthy that both question, in different ways, the possibility of the human sciences' escaping from the horizon of philosophy (precisely what was at stake in the original 'structural' human-scientific challenge to philosophy). The decline of existentialism and the rise of structuralism amongst the French philosophical avant-garde does not, therefore, correlate to a broadly more positive attitude towards the sciences on the part of philosophers, or a general conception of philosophy that would place it in the service of the sciences, so much as it indicates an increased interest amongst the philosophical avant-garde in engaging with extra-philosophical concepts and experimenting (more or less seriously) with scientificity, or at least some of its trappings.²² A broad array of positions on the relation between philosophy and the sciences persists in this space.

This structuralist tendency does not, of course, succeed in hegemonising the philosophical field, and other currents persist throughout the heyday of philosophical structuralism. Phenomenology, Christian philosophy, Marxist philosophy can all still be found, not to mention history of philosophy in various more or less traditional

²¹ On the ambiguity of Derrida's rhetorical relationship with 'scientificity', especially in relation to his claims to the quasi-scientificity of his own discourse, see Dosse (1997b, chap. 2)

²² Pierre Bourdieu (1990) has questioned the seriousness of some 'structuralist' philosophers' engagements with science, suggesting that the 1960s played host to an "'-ology effect'" – in allusion to all those nouns that use that suffix, archaeology, grammatology, semiology, etc.: 'half-hearted changes of label which enable one to draw freely on the profits of scientificity and the profits associated with the status of philosopher' (p. 6). A 'flirtation' with scientificity was sufficient in order to adopt 'the external signs of scientificity without the constraints of a genuine research programme' (Fabiani 2010, p. 120).

configurations. The emergence of philosophical structuralism is, nonetheless, perhaps the most striking and novel development of this period, as well as marking a change in the status of philosophical engagements with the sciences.

Where, then, does Deleuze fit into this mutating intellectual landscape? The first thing to note is that Deleuze (at least by the closing years of the 1960s) identifies with philosophical structuralism.²³ Although Deleuze's affinity with structuralism is evident from the numerous references to structuralist figures and ideas that pepper *Difference and Repetition*, this affinity is most clearly evidenced in his article, 'How Do We Recognise Structuralism?' (written in 1967 but only published a few years later in 1971). Structuralism, he claims, can provide us with 'a new transcendental philosophy' (*DI*, p. 244/p. 174.).²⁴ It seems plausible that the reconfiguration of transcendental philosophy Deleuze himself sought to carry out in his work of this period was intended to realise these philosophical consequences of structuralist thought.

Deleuze's presentation of structuralism pays little attention to disciplinary boundaries; he gives a list of criteria for 'recognising' structuralism that are drawn from anthropology, literary criticism, psychoanalysis, mathematics etc. However, this apparent porousness of the boundaries between disciplines in Deleuze's presentation of structuralism, particularly between philosophy and these other disciplines, does not seem to indicate a 'scientism' on Deleuze's part, that is, a

²³ Despite the influence of Sartre on his thought in the 1940s, Deleuze seems never to have identified with Sartre's 'humanism' or his model of the philosopher as engaged intellectual.

²⁴ Here, Deleuze takes up Ricœur's complaint, already recast in a positive light by Lévi-Strauss in his response to Ricœur, that structuralism (in the form of structural anthropology) has overstepped its proper bounds *qua* science by coming to constitute a 'Kantianism without a transcendental subject' (as cited in Dosse 1997a, p. 237).

collapse of the distinction between philosophy and the sciences. If anything, it seems that Deleuze's presentation of structuralism represents a particularly clear example of the *appropriation* of conceptual resources from other disciplines *by philosophy*.²⁵ This dynamic in Deleuze's thought is evidenced by comments made following a presentation to the Société française de philosophie, made the same year that he composed his text on structuralism (i.e. 1967). In the discussion following this presentation, which consisted in a précis of material that would later be published as the final chapters of *Difference and Repetition* (and which appears in the collection *Desert Islands* under the title 'The Method of Dramatisation'), Ferdinand Alquié (to whom I will return shortly) raises concerns regarding the place of the philosophical in Deleuze's presentation: '[W]hat struck me was that all the examples [Deleuze] uses are not properly philosophical examples' (*DI*, p. 148/p. 106). Instead one finds – much as in Deleuze's presentation of structuralism's 'philosophy' – mathematical examples, physiological examples, biological examples, psychoanalytical examples, etc. Alquié states that he appreciates that Deleuze is seeking 'to orient philosophy toward other problems, [...] criticiz[ing] classical philosophy – justifiably so – for not providing us with concepts sufficiently adaptable to science, or psychological analysis, or even historical analysis' (*DI*, p. 148/p. 106). However, in this supposed re-orientation of philosophy away from traditionally philosophical questions, Deleuze has posed and endeavoured to solve questions which 'are perhaps not strictly philosophical questions': alongside these non-philosophical problems, according to Alquié, 'there remain classical philosophical problems, namely

²⁵ In this respect, I concur with Éric Alliez's (2011, p. 38; 2013, p. 224) suggestion that Deleuze's does not so much embrace structuralism as a 'transdisciplinary' project as he engages in a 'philosophical re-foundation' of structuralism.

problems having to do with essence' (*DI*, p. 148/p. 106). Thus, for Alquié, in displacing the concept of essence, something is concurrently misplaced, namely the specificity of philosophy itself. Setting aside Alquié's apparent misunderstanding of the intended philosophical significance of Deleuze's discussion (which is strictly speaking a reformulation of the concept of essence rather than a dismissal), what is important about this criticism is that Deleuze perceives it to jar with his own conception of his metaphilosophical stance. Taken aback by Alquié's suggestion, Deleuze insists: 'I do believe in the specificity of philosophy [*je crois entièrement à la spécificité de la philosophie*]' (*DI*, p. 149/p. 106).²⁶ What this exchange demonstrates, then, is that while Deleuze, in keeping with an eclecticism or 'encyclopaedism' (Pinto 1987, p. 66) typical of the structuralist tendency amongst the philosophical avant-garde, borrows conceptual resources from a wide range of disciplines, and shows little concern for the disciplinary borders that define these concepts' original contexts, this is not a dissolution of philosophy into these other disciplines so much as an appropriation of these extra-philosophical resources in order to articulate a project which remains resolutely philosophical.²⁷

This redeployment of conceptual resources drawn from the sciences is an important characteristic of Deleuze's philosophy and one which plays a central role in motivating the scientific reading. Consequently, I will have cause to return to this feature of Deleuze's philosophy and address it in more detail subsequently (in

²⁶ I will have cause to return to this remark and its context later in the chapter.

²⁷ Étienne Balibar (2003) exemplifies this attitude when he states that 'structuralism is a *properly philosophical* movement and that is where its importance lies', *in spite of* the fact that 'more than one protagonist of the structuralist adventure' would be designated, or designate themselves, 'a *nonphilosopher* (for example, a "scientist", particularly in the field of the "human sciences" [...]), even an *antiphilosopher*' (p. 4 [original emphasis]).

chapter 3). For now, given Deleuze's apparent commitment to the 'specificity' of philosophy, even in the midst of philosophical structuralism's varied engagements with and appropriations from the sciences, a question arises as to how Deleuze conceives this specificity.

1.2 Philosophy between two cultures

I have already emphasised the importance of situating philosophy in relation to the sciences for metaphilosophical debates in France from the second half of the nineteenth century. The twentieth century witnesses a change in the dominant academic culture in France (and across Europe): a decline of the humanities and a rise to dominance of natural science. The rise of the social sciences in the postwar period further contributed to the emergence of new images of the academic and of academic work, competing with established humanistic models. This new emphasis on scientific criteria of intellectual prestige was not necessarily terribly hospitable to philosophy, a discipline the exceptional status of which within the French education system was based on an idea of the value of philosophy distinctly in tension with a scientific model.²⁸ Nevertheless, in this atmosphere, philosophers relate to scientific culture in different ways. In particular, some philosophers are attracted to the methodological rigour and acuteness of focus of scientific research culture, seeking to conduct their philosophising in a manner that would be deemed legitimate by this

²⁸ Jean-Louis Fabiani (1988) has produced an illuminating study of the historical emergence of this idea of philosophical 'exceptionalism' in France during the Third Republic, and the tension between this idea and the demands of a research culture increasingly regulated by 'scientific' norms and ideals. The final chapter of this work contains some suggestive remarks on the continuity between the Third Republic figure of the philosopher as legislator and regulator and the mid-twentieth-century figure of the philosopher as academic subversive, ideas which are fleshed out in Fabiani (2010).

culture; whilst others continue to embrace an essentially humanistic, even literary or artistic, model of philosophy, emphasising the freedom of philosophical thought from the mundane constraints demanded by scientific culture and specialised research.

In a piece on Georges Canguilhem, published in the *Revue de métaphysique et de morale* in 1985,²⁹ Foucault seems to gesture at something like this distinction. In the article, he posits a ‘dividing line’ in French philosophy ‘that separates a philosophy of experience, of meaning, of the subject, and a philosophy of knowledge, of rationality, and of the concept’ (Foucault 1998, p. 466). On the side of the philosophy of experience, he places Sartre and Merleau-Ponty, but also Bergson, Lachelier and Maine de Biran; whilst on the side of the philosophy of the concept, he places (implicitly) himself, Cavailles, Bachelard, Koyré, Canguilhem, and delving further back Poincaré, Couturat and Comte. Throughout the article, a broad array of sympathetic philosophical engagements with the sciences are placed on the side of ‘the philosophy of the concept’, while the capacity of those philosophers situated on the other side of the divide to do justice to the sciences and scientific rationality is put in question.

There are numerous respects in which Foucault’s distinction, as he formulates it, is liable to distort matters. It seems to seek to be exhaustive, but in fact excludes important possibilities by conjoining too many diverse terms (experience,

²⁹ The *Revue* article is a reworked version of an article originally published in 1978 as the introduction to the English translation of Canguilhem’s *Le Normal et le pathologique*. The 1978 version is less historically ambitious than the 1985 version, the latter projecting Foucault’s schema back into the nineteenth century.

meaning, subject; knowledge, rationality, concept).³⁰ In addition, the assignment of philosophers to one side or the other of this dividing line submerges nuances and ambiguities of these thinkers' positions – a point that various commentators have felt the need to make particularly in the case of Bergson (see Bianco 2011; During 2004). Nevertheless, Foucault's distinction does seem to pick up on a dimension along which philosophers might be distributed within the philosophical field in postwar France, namely the extent to which they identify with, or rather seek to resist and subvert, a scientific research culture and the constraints that it seeks to place on philosophical thought. It also indicates the way in which this tension manifests itself at the level of concrete philosophical commitments; that is to say, agents within the field perceived this dispute regarding philosophy's relation to scientific culture as bound up with the extrication of philosophy from the 'humanist' concerns of French phenomenology ('experience', 'meaning', 'subject'). If Foucault's division is excessively binary, it is probably because it bears the traces of the 'anti-humanist' polemics which helped forge the idea of a new space of philosophical structuralisms opposed to phenomenology and the philosophies of existence.³¹ Interpreted in this way, the French philosophical field can be thought of as partially structured in terms of a spectrum stretched between scientific culture and humanistic culture, and of philosophers' views on the relation between concepts and experience as being indicative of their position on this spectrum. Philosophers are pulled in one direction

³⁰ Pierre Cassou-Noguès (2010, pp. 233-234) clearly articulates this point, showing how the idea of a 'philosophy of the concept' evolves from Cavaillès' initial formulation to Canguilhem's reformulation and finally Foucault's version.

³¹ In this respect, Foucault's historical tableau seems to be a good example of what Eric Schliesser (2013a) has termed 'philosophic prophecy', a rhetorical use of the history of philosophy in order to lend legitimacy to an attempted reframing of the terms in which philosophical debate develops.

by the rising cultural status of the sciences and scientific models of intellectual practice, at the same time as they are pulled in the other direction by ingrained associations between philosophy's exceptional status within French humanistic culture and its creativity, critical authority and freedom from the strictures of specialised, empirical research.

If Foucault sees fit to associate the poles of this spectrum with 'concept' and 'experience' respectively, it is thus because of the sorts of positions that have operated nearest to each pole. That is to say, the clearest example of a twentieth-century French philosophical current with an affinity with scientific culture is undoubtedly that of Bachelardian epistemology, which strongly emphasises the rational-historical dynamic of concepts, in opposition to immediate experience, as a criterion of scientificity;³² meanwhile, certain strands of existentialism, in emphasising 'lived experience' (*le vécu*) as the proper domain of philosophy, seem to exemplify a particularly literary philosophical bent.³³ Whilst Foucault's insistence on a binary division is ultimately polemically motivated, then, it nonetheless seems that his terms do give us a flavour of the spectrum of positions that populate the philosophical field in France in the '50s and '60s, between the pull of the sciences

³² Related is Cavaillès' (1970) work, which sees the development of transfinite mathematics and the formalisation of infinity as invalidating the idea that the dynamics of concepts in mathematical thought must be grounded in concrete experience. Bachelard also argues that the plasticity of mathematical form exceeds the limits of our intuitive, pre-scientific categories, associating the freedom of mathematical concepts from the constraints of common sense with the 'epistemological break' between pre-scientific and scientific thought (Tiles 1984, chap. 3).

³³ An interesting example in this connection is Jean Wahl (1944), whose work valorises sub-representational experience at the same time as it calls for 'thinker-poets [*poètes-penseurs*]', who are set in opposition to 'the historian and the professor of philosophy' (i.e. to academic orthodoxy) (pp. 7-8).

and the pull of the humanities, between the self-sufficiency of conceptual systems and their dynamics on the one hand and concrete experience with its resistance to conceptual thought on the other.

Frédéric Worms (2005) offers another way of framing the sorts of positions to be found at the poles of this spectrum, pointing to ‘two types of philosophical relation to science’ in twentieth-century French philosophy: ‘the critical deepening [of science]’ and ‘the metaphysical surpassing of science’ (p. 39). The latter tasks philosophy with ‘study[ing ...] that which resists, in the real itself or in our thought, the endeavours of scientific thought’, whilst the former tasks philosophy with ‘study[ing ...] the risks that threaten this thought from within with being frozen into a dogmatism or an ideology’ (Worms 2005, p. 54). Assimilating Worms’ description with Foucault’s, the spectrum of positions can be seen as passing from a philosophy of experience which seeks to demarcate scientific thought’s *de jure* limits in a certain kind of experience and which sees philosophy as the mode of thought that is equipped to venture beyond these limits; and a philosophy of the concept which sees philosophy’s task as one of facilitating the ongoing development of scientific conceptual systems through an analysis of their functioning.

Where should Deleuze be located on this spectrum? How does he situate philosophical activity in relation to these oppositions? One particularly striking suggestion comes from Alain Badiou (2000; 2004, chap. 6; 2009, pp. 7-8, pp. 267-268), who claims that Deleuze’s philosophy is an archetypal example of the ‘philosophy of experience’: a vitalism, or even a mysticism, complicit with phenomenology, concerned to delimit the power of conceptual thought in the face of

concrete existence.³⁴ Recapitulating Foucault's schema, Badiou (2000) portrays French philosophy in the twentieth century as split between the dual inheritances of Bergson and Brunschvicg: 'on the one hand, a depreciation of the abstract as a simple instrumental convenience, and, on the other, an apologia of the Idea as the construction in which thought is revealed to itself' (p. 98). 'Deleuze's immense merit', Badiou (2000) claims, 'was to have assumed and modernized the Bergsonian filiation': 'Deleuze single-handedly succeeded in [...] secularizing Bergsonism and [...] connecting its concepts to the creations at the forefront of our time' (p. 99). Such a doctrine 'does not', however, 'support the real rights of the abstract', insofar as 'it cannot avoid continually depreciating what there is of conceptual stability in the order of theory' (Badiou 2000, p. 99). Deleuze's philosophy, according to Badiou, concerns itself with concrete existence at the expense of a proper appreciation of the power of conceptual thought. Correspondingly, Badiou doubts the seriousness of Deleuze's engagements with mathematics and the sciences.

Is Badiou's assessment correct? There are reasons for regarding it to be misleading. What is striking, upon examining Deleuze's philosophical commitments in more detail, is not that they sit particularly clearly on one side of Foucault's divide or the other, but rather that Deleuze's allegiances are markedly split. (Badiou's insistence on a historically persistent binary, no less than Foucault's, testifies to his ultimately polemical intent.)

The intellectual historian Knox Peden (2011; 2014, chap. 2), in discussing the divisions within the postwar French philosophical field out of which Foucault's schema seems to have grown, identifies Martial Guérout and Ferdinand Alquié as

³⁴ See also Hallward (2006), who also seeks to associate Deleuze's philosophy with mysticism.

particularly clear exemplars of the two poles of the spectrum of available positions, that is to say, proponents of philosophies particularly attentive to the demands of ‘the concept’ and of ‘experience’ respectively. Historians of philosophy, both figures rejected the idea that history and the social sciences were better positioned than philosophy to investigate the latter’s history. However, the nature of their understanding of the proper method of the history of philosophy and what renders it properly *philosophical* were opposed, and their longstanding conflict is emblematic of the dynamic of the postwar metaphilosophical debate in France. As Bianco (forthcoming, p. 2) notes, Alquié represents a literary model of philosophy orientated towards experience’s resistance to conceptuality and objectivity, whilst Guérout represents a quasi-scientific model of philosophy orientated towards a rational interrogation of concepts, structures and systems. What is interesting about the metaphilosophical dispute between these figures from the point of view of the present chapter is that Deleuze manifests a clear commitment to both of them. This immediately indicates that any attempt to position Deleuze within the space of the debates indicated by Foucault’s schema will have to be more nuanced than Badiou’s. The conception of philosophy at which Deleuze ultimately arrives (‘transcendental empiricism’) is an attempt to reconcile certain aspects of Alquié’s and Guérout’s conceptions of philosophy, and thus to find a point of intersection at which the divide described in Foucault’s schema becomes indiscernible.³⁵ In other words, Deleuze is nearer the middle of the philosophical spectrum than either of its extremes. In taking this reconciliatory line, as I will show, Deleuze follows the lead

³⁵ Here I follow Bianco (forthcoming) and Peden (2011; 2014, esp. chap. 2) in seeing the work of reconciling Alquié and Guérout as central to the formation of Deleuze’s own early conception of philosophy.

of Jean Hyppolite – and an important determining factor for his eventual position is an attempt to extricate such a reconciliatory position from the Hegelian approach embraced by Hyppolite.

An examination of the way in which Deleuze situates himself in relation to these figures can thus help us to clarify his position and how it is situated in the philosophical field.

2 Alquié, Guérout, Hyppolite

2.1 Between Alquié and Guérout

Peden (2011) summarises the dispute between Alquié and Guérout as a dispute between ‘a philosophy which emphasizes the limits of rational thought to the profit of a more primordial, ineffable experience or intuition, and a philosophy which insists upon the capacity of rationalism to transgress the limits of lived experience to articulate conceptual insights of a universal or indeed absolute variety’ (p. 365). Philosophy is conceived either as the excavation of a sub-conceptual experience or as the analysis of ideal rational structures. How does Deleuze situate himself in relation to these seemingly divergent conceptions of philosophy?

Deleuze makes clear statements of affiliation with Ferdinand Alquié at two points in his early work (although many more in private correspondence).³⁶ The first is in a 1956 review, published in the journal *Cahiers du sud*, of Alquié’s *Descartes*,

³⁶ Alquié was an esteemed Sorbonne historian of philosophy and Deleuze’s longtime teacher, supervising his secondary doctoral thesis on Spinoza. Deleuze dedicated his monograph on Kant to him. For an overview of Alquié’s role in Deleuze’s education and intellectual development, see Bianco (2005, pp. 91-6; forthcoming); see also Dosse (2010, p. 95, pp. 97-98, p. 110, pp. 113-114, pp. 117-120, p. 143). For accounts of Deleuze’s correspondence with Alquié, see Bianco (forthcoming).

l'homme et l'œuvre, an introductory text building on the reading presented in Alquié's 1950 monograph, *La Découverte métaphysique de l'homme chez Descartes*.³⁷ There, Deleuze states that in Alquié's Descartes – and it is quite clear that, throughout the review, Deleuze attributes to Alquié himself the positions he takes the latter to attribute to Descartes³⁸ – he discerns ‘a conception of philosophy we must preserve’ (*FAD*, p. 473 [my translations throughout]). While Deleuze does not embrace the whole of Alquié's Cartesianism,³⁹ there are nevertheless clearly aspects of Alquié's general conception of philosophy that Deleuze takes to be persuasive. The second statement of affiliation is made in 1967, during the discussion (mentioned above) following Deleuze's presentation to the Société française de philosophie. As noted above, in response to Alquié's suggestion that his presentation lacked specifically philosophical content, Deleuze responded: ‘I do believe in the specificity of philosophy’; ‘and’, he continues, ‘I've inherited this conviction from you yourself’ (*DI*, p. 149/p. 106 [translation modified]). Thus, despite a sense of mutual philosophical incomprehension between the two men that

³⁷ Deleuze (1956) also speaks approvingly of Alquié's work in another 1956 book review published in *Études philosophiques*, on Alquié's *Philosophie du surréalisme*. Here Deleuze (1956) discusses the importance of signs in art in a way that will clearly influence his later work on Proust, and attributes to Alquié ‘a rationalism which is not system-building and which is enriched by the double content of desire and signs’, ‘a metaphysics that is strangely living’ (p. 316).

³⁸ Interestingly, this was Guérout's accusation against Alquié: that he insisted on using philosophy's ‘mighty dead’ as vectors for the transmission of his own philosophical message (Peden 2011, p. 371).

³⁹ It is likely that Deleuze was already at this point working with a fairly well-developed version of his secondary doctoral dissertation on Spinoza, since the latter ‘was practically finished in the late 1950s’ (Dosse 2010, p. 118), and his attitude to Cartesianism in this work is distinctly critical. Indeed, Spinozism is part of an ‘Anticartesian reaction’ undertaken in the name of ‘a new “naturalism”’ (*SPE*, p. 227/p. 207), a point to which I will return in chapter 4.

would only grow in the time following the second pronouncement noted above,⁴⁰ it seems that Deleuze adopts from Alquié, and subsequently maintains, certain core ideas concerning the nature and value of philosophy and its specificity in relation to other kinds of intellectual activity.

It is possible to get a clearer sense of the conception of philosophy in question here by returning to Deleuze's aforementioned 1956 review of Alquié. The conception of philosophy Deleuze praises in the context of this review frames philosophy's specificity in terms of its surpassing the limitations of scientific thought, understood as the exemplar of objective, rational, conceptual knowledge. 'Descartes saw the original condition of his project of a universal and certain science: Nature, as a spatial, actual and mechanical system, was deprived of its thickness [*épaisseur*], of its potentialities [*virtualités*], of its qualities, of its spontaneity'; and yet this rationally cognisable world – a world without qualities – is a world *deprived* of 'being', insofar as it is this 'thickness' which is proper to that experience of being 'the evidence for which is primary in any mind' (*FAD*, p. 474).⁴¹ That is, there is a richness of determination that is manifest in pre-conceptual experience and yet which is necessarily suppressed as a condition of the possibility of scientific knowledge: 'If Nature [i.e. the object of science] is not being, Being is

⁴⁰ By the time of the defence of his thesis in 1968, Deleuze would describe the distance that had opened up between himself and Alquié, as much personal as philosophical, as an 'abyss' – a remark made in a letter to his friend and fellow philosopher, François Châtelet (as cited in Dosse 2010, p. 178). As Bianco (2005) notes, Deleuze would ultimately come to refer to Alquié with 'merciless sarcasm', and would not contribute to the *hommage* to him edited by Jean-Luc Marion (p. 92).

⁴¹ This notion of 'thickness' (*épaisseur*) would appear to be one that Deleuze takes from Jean Wahl (1932), who speaks of a 'worship of reality in its thickness [*épaisseur*]' (a term he finds in Whitehead and William James) as characteristic of that 'empiricism in the second degree' which he likewise attributes to Bergson (pp. 6-7).

not nature, and is not scientifically understood, but must be conceived philosophically' (*FAD*, p. 474). Philosophy is the endeavour to elucidate without eliminating this 'thickness' which is the 'being' of the world as we experience it, this plenitude of determination which is *experientially* available though it resists scientific, rational or objective conceptualisation.

Alquié's is thus a philosophy dedicated to the notion of an irreducibly subjective experience of being, beyond the limits of conceptual thought; to the ultimately ineffable character of such experience; and to the dangers of its obfuscation at the hands of the will to expand scientific knowledge into all available domains.⁴² Thus, philosophy's task, conceived explicitly in opposition to the guiding concerns of modern science, is to cultivate this universal ontological experience: 'Properly philosophical knowledge [*savoir*] explicates a fundamental experience, a non-conceptual presence of being to consciousness' (Alquié 1950, p. 148). This notion of a philosophy built around a conceptually indeterminable and hence ultimately ineffable experience of 'subjective universality' (as cited in Peden 2011, p. 372) is one Alquié claims to discern in the essentially personal experience of Cartesian doubt and process of Cartesian 'meditation'; the *cogito*, and the consequent re-establishment of a connection between the pursuit of knowledge and a relationship with the divine, marking, for him, the irruption of a metaphysical excess into the previously closed edifice of objectifying reason that had characterised Descartes' pursuit of a 'universal science'.

Deleuze, in his review, seems to align himself with this experiential excess, and with the limitations on conceptual knowledge it implies. It is worth noting that

⁴² 'Science is the constitution of objectivity by rejecting subjectivity' (Alquié 1957, p. v [my translation]).

he also foregrounds a certain *non-conformism* in Alquié's conception of philosophy that is bound up with this notion of an excavation of a *pre-conceptual* experience (*FAD*, p. 474). If philosophy essentially involves a break with established intellectual conventions and presuppositions, this is insofar as these underpin the conceptual apparatus that keeps us at arm's length from ontological experience. This, according to Alquié, is the reason that the movement of Cartesian meditation is paradigmatic of the movement of philosophical thought in general: Descartes' rejection of scholastic doctrine in favour of a fundamental reconstruction of knowledge through the powers of intuition and reason alone is the movement through which all philosophy passes. While Deleuze does not embrace every aspect of this Cartesian image of philosophical non-conformism,⁴³ what he does seem to take up from Alquié is the idea that philosophy's specificity lies in its breaking with the intellectual conventions and paradigms of its time through an experiential encounter with the extra-conceptual 'thickness' of being, which it tries to find a means to express without simply obscuring.

Focusing on Deleuze's debt to Alquié, Badiou's assessment might seem to ring true. But what of Deleuze's parallel filiation with Guérout? Deleuze published a positive review of the first volume of Guérout's study of Spinoza in the *Revue de métaphysique et de morale* in 1969, in which he praises Guérout for having 'establishe[d] the genuinely scientific study of Spinozism' (*DI*, p. 216/p. 155). However, his sympathy for Guérout's approach to the history of philosophy runs deeper than this, and stems from much earlier. As Bianco (forthcoming, pp. 11-13) notes, several of Deleuze's university classmates have recorded in memoirs and

⁴³ See Deleuze's discussion of Descartes' unfinished dialogue, 'The Search for Truth by Means of the Natural Light', in chapter 3 of *Difference and Repetition*.

interviews his enthusiastic attendance at Guérout's courses at the Sorbonne and the Collège de France, and a debt to Guérout's structural conception of philosophical texts is evident in Deleuze's own early forays into the history of philosophy.

In contrast to Alquié, Guérout rejects any identification of the logical movement of a philosophical text with the personal 'meditations' of its author. A philosophical text is a structure or system, and the work of the historian of philosophy – as a 'technician' of philosophical texts – is to analyse the internal logic of this structure. '[W]hat is strictly philosophical' in philosophical texts on Guérout's view, as recounted by his former student Jean-Christophe Goddard, 'is precisely the autonomous reality of the work's structures' (Dosse 1997a, p. 80). As François Dosse (1997a) notes, Guérout criticised Kant and Fichte for having failed to construct a satisfactory form of idealism, because, 'having remained prisoners of realities and their representations', they failed to appreciate the 'self-sufficiency' of conceptual systems understood as hermetically sealed structures (p. 81).

In his emphasis on the autonomy and self-sufficiency of the internal logic of conceptual systems, independent of the subjective movement of the minds of their authors, Guérout's position recalls that of Cavailles in the posthumously published manuscript, *Sur la logique et la théorie de la science*, in which he first proposes the idea of a 'philosophy of the concept' that Foucault will adopt in his historical schema. Cavailles' (1970) complaint against the 'philosophy of consciousness', exemplified by Husserl's philosophy of mathematics, is that in seeking to ground the meaning and limits of the development of mathematical concepts in lived or concrete experience, such a philosophy cannot do justice to the autonomous development of concepts beyond these limits, as evidenced in the conceptual innovations of Cantor's transfinite set theory and its rigorous formalisation of infinity (p. 409; see Peden

2014, chap. 1). Likewise in Guérout, the idea that the meaning of conceptual constructions must be indexed to the lived experience of the thinker who constructs them is dismissed in favour of the autonomy of structural idealities from the ‘realities’ of their genesis. If any position in postwar French philosophy deserves Cavailles’ title of ‘philosophy of the concept’, it is surely Guérout’s.

In embracing such a ‘structural’ method, which can be seen at work in Deleuze’s early histories of philosophy (and, as I will explore in more detail presently, in his theory of ‘Ideas’), Deleuze seems to push back decisively against Badiou’s suggestion that he has no interest in doing justice to the power of conceptual thought to break with the ‘concrete’ realities of lived experience. But how can Deleuze’s apparent sympathy for Guérout’s rationalistic idealism be squared with his professed sympathy for Alquié’s philosophy of sub-conceptual ontological experience, Alquié’s literary model of philosophy as a struggle to express the inexpressible with Guérout’s quasi-scientific model of philosophy as the logical analysis of ideal structures?

2.2 *Between logic and existence: Hyppolite’s Hegelianism*

In the previous section, I suggested that Deleuze’s philosophical allegiances are best seen, *pace* Badiou, as divided between the two poles of the postwar French philosophical field as mapped out by Foucault, between a ‘philosophy of experience’ and a ‘philosophy of the concept’. On the one hand, Deleuze expresses and displays affinities with Guérout which seem to place him on the side of a quasi-scientific model of philosophy tied to the autonomous dynamics of conceptual systems and ideal structures; whilst on the other hand, he expresses a more explicit, yet conflicted, affinity with Alquié, which seems to pull him towards a literary model of

philosophy tied to the exploration of a sub-conceptual ontological experience. If Deleuze cannot be placed comfortably at either pole of the field so structured, on either side of Foucault's 'dividing line', then where on the spectrum of positions in between does he seek to position himself?

Deleuze's relation to a third figure will help to clarify his position in this respect: namely, Jean Hyppolite. It is with Hyppolite's philosophy that Deleuze seems ultimately to associate his own project most strongly at this time, at the same time as it is the work of extricating himself from Hyppolite's Hegelianism that gives to this project its distinctive form. Hyppolite's approach to the divisions in the philosophical field reflected in Foucault's schema is reconciliatory. Indeed, Hyppolite's postwar work is marked, as Bianco (2013) notes, by an ongoing effort 'to reconcile the rigour of the investigation of the forms and systems of rationality [...] with the exploration of lived, pre-reflective experience, open to the non-philosophical' (p. 18 [my translation]). This effort of reconciliation or synthesis is apparent in the mutating series of conjunctions by which Hyppolite designates the objects of his philosophical concern – structure and genesis (Hyppolite 1974),⁴⁴ logic and existence (Hyppolite 1997), logic and history (Hyppolite 1971, p. 1008), truth and existence (Hyppolite 1971, p. 1014), structure and existence.⁴⁵ In each new work, what is aimed at is a demonstration of the irrevocable entanglement of the ideal and the concrete.

⁴⁴ On the impact and origins of Hyppolite's use of this particular conjunction, see Bianco (2013, pp. 23-24 n. 36).

⁴⁵ The announced theme of a planned project, never completed in Hyppolite's lifetime (Bianco 2013, p. 20).

Deleuze's project of transcendental empiricism models its approach to the diverging demands of the philosophies of 'experience' and 'concept' on that of Hyppolite – that is to say, it proposes a 'synthesis'. Like Hyppolite, Deleuze seeks to occupy a region of philosophical space in which the philosophies of experience and of the concept become indiscernible. Deleuze formulates his approach, however, as an alternative to Hyppolite's, and it will prove central to Deleuze's motivations to avoid the pitfalls he diagnoses in the Hegelian approach adopted by Hyppolite. In the remainder of this section, I will briefly outline Hyppolite's approach (as presented by Deleuze), before going on, in the next section, to outline Deleuze's critique of Hegelianism and the way in which his alternative synthesis is supposed to function. Having thus clarified Deleuze's position within the reconfiguration of the philosophical field associated with the emergence of philosophical structuralism, I will be in a position to return to the question of what conclusions can be drawn from this regarding Deleuze's attitude to the significance of the sciences and scientificity for the nature and value of philosophy.

In December 1963, on the occasion of his inaugural lecture as Chair of the History of Philosophical Thought at the Collège de France (previously occupied by Guérault, during whose tenure the position was entitled the Chair of the History and Technology of Philosophical Systems), Hyppolite provided a précis of his reconciliatory intent in terms of an attempt to do justice to the philosophical concerns of both Guérault and Merleau-Ponty. 'Philosophy', he states in this connection, 'can renounce neither rigour, demonstrative form in general, nor its relation with the real, with experience' (Hyppolite 1971, p. 1013 [my translation]). Philosophy must indeed take the form of a 'logic', a rationally constructed system of conceptual relations; but this should be 'a transcendental logic, [...] a reflection that

recuperates, or tries to recuperate, our originary relation to lived experience, to existence and to being' (Hyppolite 1971, p. 1013 [my translation]). The significance of Hegel for such a project is emphasised throughout.

If Hegelianism strikes Hyppolite as a productive way of approaching the division between the philosophy of the concept and the philosophy of experience, it is insofar as Hyppolite's approach exploits certain Kantian resonances of the tension highlighted by Foucault's schema. The question of how to reconcile the demands of concrete experience with the rights of the concept (and with it, the question of how philosophy should relate to the two intellectual cultures between which it finds itself torn, that of the humanities and that of the sciences) can be mapped onto the problematic of Kant's critical philosophy: that is, this question can be construed as one of determining the nature of the relation between sensibility and conceptual thought. Hegel, of course, offers what he presents as a fuller and more robust solution than Kant's own, which risks positing the heterogeneity of concept and intuition without adequately accounting for how these terms then come into relation with one another (I will return to this point shortly, in the context of explaining Deleuze's position). Hyppolite embraces Hegel's critique of Kant and goes on to formulate an essentially Hegelian reconciliation of the philosophies of the concept and of experience.

In terms of Hyppolite's influence on the formation of Deleuze's transcendental empiricism, the key statement of Hegelianism as a reconciliation of 'logic' (Guérault) and 'experience' (Merleau-Ponty) is the 1953 monograph, *Logic and Existence*. The latter was an important text in the life of Hegel's reception in France, insofar as it provided a reading of Hegel sensitive to the concerns of those philosophers whose view of Hegel had soured along with the decline in standing of

the philosophical anthropology and ‘humanism’ with which, due to the interpretative work of Kojève and others, Hegel had come to be associated in the 1930s and ’40s.⁴⁶ It is in a 1954 review of this work by Hyppolite, published in the journal *Revue philosophique de la France et de l'étranger*, that Deleuze outlines his understanding of Hyppolite’s project, its importance, but also its limitations and the need to reject some of its key assumptions.

The central claim that Deleuze identifies in Hyppolite’s ‘essential book’ is the following: ‘*Philosophy must be ontology [...]; but there is no ontology of essence, there is only an ontology of sense [sens]*’ (*DI*, p. 18/p. 15 [original emphasis]).⁴⁷ Philosophy, then, is in some sense an attempt to grasp being in thought (i.e. ontology). While Deleuze’s presentation in the review is undoubtedly dense, he does make some clarificatory remarks regarding the components of this claim. Firstly, that “‘philosophy is ontology’” means [...] that philosophy is not anthropology’, or ‘empirical knowledge [*savoir empirique*]’ (*DI*, p. 18/p. 15, p. 21/p. 17). Secondly, *sense* here refers to the ‘identity of being [*l'être*] and difference’ (*DI*, p. 22/p. 18). This conception of being as difference, or as self-differing,⁴⁸ is required,

⁴⁶ On the significance of Hyppolite and *Logic and Existence* for Deleuze’s generation of French philosophers, see Lawlor (2003, chap. 1).

⁴⁷ The present sketch of Deleuze’s presentation of Hyppolite’s Hegel will be fairly brief. For a fuller discussion, see Bianco (2005, pp. 96-101), Kerslake (2002), Tissandier (2013, pp. 70-77) and Widder (2003).

⁴⁸ ‘Speculative difference is *self*-contradictory Being. The thing contradicts *itself* because, distinguishing itself from all that is not, it finds its being in this very difference’ (*DI*, p. 22/p. 18 [my emphasis]).

Deleuze states, in order to ‘understand what being is with respect to the [sensible] given’ (*DI*, p. 20/p. 16).⁴⁹

How does Deleuze understand this ‘empirical knowledge’ from which properly *philosophical* knowledge must be distinguished and with which it must break in order to achieve its ontological task of ‘thinking’ being? In what respects does it hinder ontology? The problem with empirical knowledge, according to Deleuze – and this is also its defining characteristic – is that ‘the speaker [or subject of knowledge] and the object of his speech [or knowledge] are separate’ (*DI*, p. 18/p. 15). ‘Reflection is on one side, while being is on the other’ (*DI*, p. 18/p. 15). Consequently, when thought operates in this mode, ‘knowledge [*connaissance*] [...] is not a movement of the thing [known]’, but ‘remains outside the object’ in a ‘reflection [that] is merely external and formal’ (*DI*, p. 18/p. 15 [translation modified]). The inadequacy of this ‘external’ relation between conceptual thought and its sensible object as a basis for *ontology* lies in the inability of thought to grasp the being of its object. The concepts thought applies to the given in its attempt to render it intelligible are essentially heterogeneous to their object, such that the determinations thought discerns in its object belong more to thought than to being. Kant’s critical idealism indicates the way beyond empirical knowledge in conceiving ‘the synthetic identity of subject and object’ – that is, the identity of the conditions of possibility of *knowledge* and the conditions of possibility of *objects* of knowledge – yet fails to grasp being by restricting this identity to ‘an object relative to the subject’ (*DI*, p. 19/p. 15 [translation modified]). Being, for Kant, remains outside thought in

⁴⁹ Deleuze’s subsequent formulation, according to which ‘difference is that by which the given is given [...] as diverse’, and thus ‘the very being *of* the sensible’ (*DR*, p. 286/p. 222, p. 80/p. 57 [original emphasis]), is already present in germ in this phrase.

the extra-representational realm of noumena. Speculative idealism, however, succeeds in superseding the limitations of empirical or ‘anthropological’ knowledge by recognising the heterogeneity of thought and being as ‘the internal difference of Being that thinks itself’ (*DI*, p. 21/p. 17). Philosophy is able to take up the mantle of ontology insofar as philosophical discourse is not a discourse *about* being, but the site at which being expresses *itself* in thought.

It thus also becomes somewhat clearer why Hyppolite, according to Deleuze’s presentation, insists on conceiving being in its relation to the sensible given, that is, as ‘the sense [*sens*] of this world’ (i.e. the sensible world) rather than as an ‘essence beyond appearances’ (*DI*, p. 20/p. 16). In embracing and radicalising (by jettisoning the idea of the thing-in-itself) the Kantian notion that the sensible constitutes the horizon of conceptual knowledge, Hyppolite’s Hegel makes being something available to thought, not locked away behind the impenetrable surface of the sensible given. Ontology, tasked with grasping being in thought, makes explicit the rational structure and movement (or ‘logic’) within the sensible which renders the latter meaningful, which constitutes its meaning or sense – which ‘makes sense’ of the sensible.

Arising out of Deleuze’s rather tightly packed summation of Hyppolite’s position is the idea of philosophy as a ‘logic of sense [*logique du sens*]’ – where, as I have indicated above, the significance of meaning or sense is directly indexed to the inescapability of sensible experience as the horizon for conceptual thought (*DI*, p. 20/p. 16). This idea manifests the Hyppolitean synthesis which renders indiscernible the supposed dividing line between a philosophy of rationality or of the concept and a philosophy of experience or meaning. Sense and the sensible too have a logic, a rational structure, if only implicitly or obscurely, and it is philosophy’s task to render

it clear and explicit. From the opening of the *Phenomenology* to the close of the *Logic*, Hegel provides us with an account of the journey from ordinary experience to the heights of philosophical thought, from the concrete to the ideal, which serves to close the gap between the two, showing it to have been only a necessary appearance. The ideal is always contained within the concrete and vice versa. Foucault's opposition would seem to find itself *aufgehoben*.

Deleuze, writing in 1954, praises the conception of philosophy he discerns in Hyppolite's work, and the persistence of its influence is nowhere clearer than in the title of his 1969 work, *Logic of Sense*. However, he also takes his distance from Hyppolite in ways that in retrospect seem to constitute a proposal of the project that will come to fruition in *Difference and Repetition*. In the next section, then, I will outline how Deleuze situates his own position in relation to Hyppolite and Hegelianism, both in the 1954 review and in subsequent work. What are the problems with Hyppolite's reconciliation of 'experience' and 'concept', and how, correspondingly, does transcendental empiricism provide a more convincing synthesis?

3 Transcendental empiricism: synthesis and schematism

Deleuze's project participates in a problematic that it shares with the late eighteenth- and early nineteenth-century German reception of Kant's work. Acknowledging as a starting point the significance of the Kantian separation of receptivity and spontaneity, the human being's sensuous nature and its intellectual nature, ultimately the theoretical separation of the domains of nature and freedom, these post-Kantian projects sought to take up and complete the work of reuniting these divided terms

(begun by Kant in the Third Critique).⁵⁰ Transcendental empiricism is thus an attempt to ‘overcom[e ...] the Kantian duality between concept and intuition’, thought and experience (*DR*, p. 224/p. 173). Hyppolite sees the Hegelian incarnation of this project as a way of building bridges between apparently divergent orientations within French philosophy. Insofar as Deleuze’s project attempts to build a bridge between Alquié’s and Guérout’s conceptions of philosophy, he follows Hyppolite in mapping the project of overcoming Kant’s duality onto the project of bridging the gap within French philosophy represented by the dispute between these two figures.

3.1 *Against the dialectic*

Why does Deleuze not regard Hegelianism, as presented by Hyppolite, as providing a satisfactory way to reconcile his apparently conflicting affinities? In his review of Hyppolite’s *Logic and Existence*, Deleuze delineates those aspects of Hyppolite’s project of which he approves from the point at which ‘Hyppolite shows himself to be altogether Hegelian [*tout à fait hégélien*]’ (*DI*, p. 22/p. 18 [Lawlor and Sen’s translation, as cited in Hyppolite 1997, p. 195]). Hegelianism, according to Deleuze, can account for neither the singular (the uniqueness of individual things) nor the new (fundamental transformations in what there is and how we think).⁵¹ As such, Hegelianism fails to grasp being in its relation to the sensible, or ‘the being of the sensible’ (*DR*, p. 80/p. 57). The problem, for Deleuze, is that the intelligible order that Hegel claims to discern in the sensible is an abstract conceptual order: the

⁵⁰ See Beiser (1987, esp. chap. 10; 2002); Guyer (2000).

⁵¹ The account of Deleuze’s critique of Hegel sketched here will be quite brief. For fuller accounts, see Baugh (1992) and Somers-Hall (2012a), as well as the essays collected in Houle and Vernon (2013).

movement of the dialectic is a movement in which *general* determinations show themselves to be complicit with the opposing determinations which (in accordance with an Aristotelian logic) are supposed to constitute their fixed identities, such that these identities show themselves to be unstable. The being of sensible things is determined as a series of internalised contradictions, each determination being fully realised only insofar as it comes to contain everything that it is not.

Whilst claiming to discern a dialectical conceptual order within the sensible, Hegelianism, according to Deleuze, in fact grasps in the sensible only that in it which conforms to conceptual form, losing sight of (or rather excluding *a priori*) those aspects of the sensible that do not so conform – singularity, novelty, difference.⁵² Here, Deleuze seems to take issue with the very beginning of the Hegelian dialectic, the inaugural move whereby (in the *Phenomenology of Spirit*) the sensible immediacy of pure particularity (the ‘this’-‘here’-‘now’ of sense-certainty) collapses in the face of the realisation of the inherent generality and emptiness of these apparent particularities. His comments in *Difference and Repetition* on this point are worth quoting at length:

The imprint of the Hegelian dialectic on the beginnings of the *Phenomenology* has often been noted: the here and the now are posited as empty identities, as abstract universalities which claim to draw difference along with them, when in fact difference does not by any means follow and remains attached in the depths of its own space, in the here-now of a differential reality always made up of singularities. [... Hegel] creates movement, [...] but because he creates it with words and representations it is a false movement, and nothing follows. [...] One can always mediate, pass over into the antithesis, combine the synthesis, but the thesis does not follow: it subsists in its immediacy, in its difference which itself constitutes the true movement. Difference is the true content of the thesis, the persistence of the thesis.

⁵² Representation, Deleuze states, ‘retains in the particular [i.e. the sensible given] only that which conforms to the general [i.e. the concept]’ (*DR*, p. 56/p. 38). Hegelianism, he claims, ‘in the last resort [...] does not free itself from the principle of identity as a presupposition of representation’ (*DR*, p. 70/p. 49 [original emphasis]).

The negative and negativity do not even capture the phenomenon of difference, only the phantom or the epiphenomenon. The whole of the *Phenomenology* is an epiphenomenology.

(*DR*, pp. 73-74/pp. 51-52)

This, in Deleuze's estimation, is what goes wrong in Hegel's reasoning.⁵³ Hegel (on Hyppolite's reading) seeks to reconcile conceptual thought and the being of the sensible by showing the particularity and immediacy of sensible intuition to be only apparent, a moment in the unfolding of the concept. According to Deleuze, however, Hegel begins from a misapprehension of the nature of 'real experience' – the sensible as it is presented in the dialectic of sense-certainty is already subjected to the requirements of conceptualisation. Consequently, Hegel is operating with only an *abstract image* of the sensible, and misses the real movement of the sensible that evades the movement of the concept, namely the movement of difference.⁵⁴ Deleuze reads Hegel as approaching the sensible from the standpoint of conceptual thought, seeking to reconcile the former to the demands of the latter. He will recommend instead the inverse procedure: philosophy must start from 'individual existences' (*DI*, p. 33/p. 25)⁵⁵ in order to discern each singular thing's 'internal difference' or *nuance* (its singular essence) – a sufficient reason 'reach[ing] all the way to the individual' – and on this basis construct 'the concept that fits only the object itself' (*DI*, p. 44/p. 32, p. 49/p. 36). In other words, it must be shown how it is that concepts

⁵³ I am not attempting here to vindicate Deleuze's reasoning – only to explain it. There are no doubt numerous responses the Hegelian could make to such a critique, especially given that it is a style of criticism with which Hegelianism has been greeted fairly consistently. For a thorough account of how Hegel might respond to Deleuzian criticisms of his account of the movement of the dialectic, see Somers-Hall (2012a, esp. chap. 7).

⁵⁴ 'The immediate is precisely the identity of the thing and its difference' (*DI*, p. 33/p. 25).

⁵⁵ Deleuze is quoting Bergson here.

can be made to conform to the demands of the sensible, understood as a field of non-conceptual differences.⁵⁶ (I will elaborate on these points when I examine Deleuze's own position below.)

The likely source of the line of criticism of Hegel adopted by Deleuze is Jean Wahl.⁵⁷ 'Hegel', Wahl (1932) recounts in the preface to *Vers le concret*, 'tells us at the start of the *Phenomenology* that that which is thought to be particular and concrete is in reality the most abstract and the most general, that that to which the empiricist and the realist attribute the greatest richness is in reality that in the world which is poorest' (p. 1 [my translations throughout]). In this way, 'he has given one of the most profound motifs of idealist thought its most striking form'; this motif is a mainstay of idealism, which 'will always say that that which is supposedly concrete is only an abstraction and a fiction' (Wahl 1932, p. 1). But Hegel's argument, Wahl continues, relies explicitly and openly on language, that is, on the *inscription* (one might say *re-presentation*) of the 'this-here-now' of sense-certainty by which I recognise what is presented as what it is, whereby I recognise it *as* 'this', 'here', 'now'. That the dialectical movement of the *Phenomenology* – the movement which purports to carry us, if only we exert the effort required to suspend our presuppositions and attachments to any given moment of this movement, to the identity of thought and being in 'absolute knowing' – relies on language (or more

⁵⁶ Deleuze makes similar critical remarks apropos Hegel in *Nietzsche and Philosophy*: 'The being of Hegelian logic is merely "thought" being [*l'être seulement pensé*], pure and empty' (*NP*, p. 210/p. 183); '[o]pposition can be the law of the relation between abstract products, but difference is the only principle of genesis or production' (*NP*, p. 181/p. 157).

⁵⁷ In a 1972 letter, quoted by Deleuze's biographer, François Dosse (2010), Deleuze describes Wahl as 'the one who led the reaction against the dialectic when Hegel was in full vogue at the university' (p. 110). Deleuze seems also to have found support for such an argument against Hegel in Feuerbach (see Somers-Hall 2015).

generally on the inscription whereby a moment is *recognised as* the moment it is) raises, according to Wahl (1932, p. 1), the following dilemma: ‘should we conclude, following Hegel, that language thus reveals the unreality of the concrete’; or, ‘[s]hould we not instead say that language, far from revealing the real, reveals itself in its impotence?’ Wahl (1932) embraces the latter option, praising those philosophers – whom he terms ‘second degree’ empiricists – who ‘demand the rights of the immediate’ (Whitehead, William James, Gabriel Marcel and, crucially for Deleuze, Bergson) (p. 3; see also Wahl 1944, p. 14).⁵⁸ Deleuze effectively reproduces Wahl’s argument in *Difference and Repetition*: Hegel’s ‘sublation’ of sensible particularity in the generality of concepts fails to grasp sensible particularity *as such*, because, beginning already at the level of words and concepts (i.e. representations), Hegel’s dialectic ‘retains in the particular only that which conforms to the general’ (*DR*, p. 56/p. 38). The non-conceptual differences between singular individuals – as well as the deeper field of non-conceptual differences which Deleuze will posit as the ‘reason’ of these individuals, that is, as that which accounts for their individuation – is thus passed over by the movement of the dialectic.

The root of the problem with Hegel’s position, for Deleuze, is that his blinkered focus on the abstract movement of concept leads him to deny ‘the existence of non-conceptual differences’ (*DR*, p. 23/p. 13); he ‘take[s] difference to be conceptual difference, intrinsically conceptual’ (*DR*, p. 39/p. 26). According to Deleuze, the sensible determinations for which the movement of the Hegelian

⁵⁸ Wahl (1932) uses the terms ‘first degree’ and ‘second degree’ empiricism to refer to empiricisms which do not and do, respectively, pose the question of being, the latter therefore being an empiricism that could legitimately claim to have ‘surpassed [*dépassé*]’ rationalism rather than being simply naïve to its metaphysical concerns (pp. 6-7).

dialectic fails to account are precisely *non-conceptual differences*. Deleuze finds persuasive, in this connection, a number of cases of what, in the introduction to *Difference and Repetition*, he calls conceptual ‘blockage’ (*DR*, p. 20 ff./p. 11 ff.). A concept is ‘blocked’ when it encounters a difference that it cannot specify; and this is precisely what happens, according to Deleuze, when conceptual thought is confronted by ‘differences of nature’ between individuals of the same general type, in other words, distinct individuals that instantiate the same concept (*DI*, p. 44/p. 33). Deleuze refers to such cases as cases of ‘bare repetition’ (*DR*, pp. 36-37/pp. 23-24). Bare repetition thus testifies to the capacity of sensible individuals to ‘block’ conceptual thought, ‘a power peculiar to the existent, a stubbornness of the existent in intuition, which resists every specification by concepts no matter how far this is taken’ (*DR*, p. 23/pp. 13-14). Perhaps his key example is drawn from Kant (specifically from Kant’s dispute with Leibnizianism concerning the reducibility of spatial relations to logical relations), and concerns so-called ‘incongruent counterparts’. This argument, and its significance for Deleuze’s disagreement with Hegel, has been elucidated in some detail elsewhere (see Somers-Hall 2013; Kerslake 2009, pp. 133-134, pp. 138-142, p. 227), so I will not rehearse these details here. The essential point is that given that the spatial structure of the sensible field is ‘defined from the point of view of an observer tied to that space, not from an external position’, objects in this field exhibit enantiomorphic properties (i.e. asymmetry or ‘incongruence’ between left-handed or right-handed versions of an otherwise identical figure) (*DR*, p. 281/p. 218).⁵⁹ Deleuze follows Kant in taking the

⁵⁹ This point about the connection between the non-conceptual determinations of sensible things and the perspectival character of the sensible field will prove important for Deleuze’s discussion of the

sensible discernibility of such determinations to indicate that there are differences which entities possess in virtue of their existing in a spatio-temporal milieu, differences that are sensibly discernible but not conceptually specifiable.⁶⁰ He also follows Kant in taking this inability of conceptual thought to fully determine the differences between sensible objects to be indicative of the inability of purely conceptual thought to properly account for the difference between abstract or ideal, that is to say, merely *conceived*, objects, objects of thought, and concrete, sensible, spatio-temporally situated existents. For Deleuze, this heterogeneity of conceptual thought and sensibility indicates the inability of conceptual thought *alone* (and hence, Hegel's dialectic) to grasp things in their being.

It is worth noting in passing that at this point, Deleuze may have been tempted to embrace a nominalist position, concluding from the heterogeneity of conceptual thought and sensibility that the application of general concepts to particular things is a matter of grouping the latter in an ultimately arbitrary, or at least contingent, manner; and that the determinations of bare particulars are strictly speaking external to their inherent natures or being. Deleuze does not, however, opt for this route. He has, as I have outlined, been convinced by Hyppolite that an 'internal' grasp of things is indeed possible, that is, that it is possible to grasp things in their being, in their essential or 'inner' determinations, and not only (in the

spatial syntheses in chapter 5 of *Difference and Repetition*, where it underlies his use of the concept of 'depth' (see Somers-Hall 2015, pp. 111-121).

⁶⁰ 'What indeed can be more similar to, and in all parts more equal to, my hand [...] than its image in the mirror? And yet I cannot put such a hand as is seen in the mirror in the place of its original; for if the one was a right hand, then the other in the mirror is a left [...] Now there are no inner differences here that any understanding could merely think; and yet the differences are inner as far as the senses teach, for the left hand cannot, after all, be enclosed within the same boundaries as the right (they cannot be made congruent), despite all reciprocal equality and similarity' (Kant 2004, pp. 37-38).

manner of ‘anthropology’ or ‘empirical knowledge’) to reflect on the determinations that are imposed on them from outside by our conventions or by the nature of our cognitive apparatus.⁶¹ Equally, he might have been tempted to follow Alquié in acknowledging the possibility of an intuitive revelation of the being of things, yet conceiving this experiential manifestation of being as essentially indeterminate and inexpressible.⁶² Whilst, Deleuze is attentive to the limitations of conceptual thought in the face of ontological experience and the consequent difficulties of conceptually articulating this experience in its ‘thickness’, he is no more satisfied with mysticism (*pace* Hallward (2006)) than he is with nominalism or ‘anthropology’. He believes, rather, that it is possible to answer the challenge posed by the limitations of Hyppolite’s realisation of his own project by conceiving the being of the sensible in another manner: namely, in such a way as to overcome the limitations of Hegel’s approach and account for the relation between concept and experience without failing to do justice to the latter.

Hegel’s understanding of philosophical thought in terms of a dialectical movement of contradiction is, according to Deleuze, symptomatic of a misunderstanding of the relation between philosophical thought and ordinary cognition. Dialectical thought, insofar as it follows the movement of concepts without paying proper heed to their relation to real experience, still moves within the parameters of empirical cognition. Thus, Hegel is, for Deleuze, guilty of a perplexing (if, according to Deleuze, historically common) dual crime with regard to the

⁶¹ On this nominalist temptation in Deleuze’s thought, see Bryant (2008, p. 146) and Bell (2009, pp. 3-4; 2011).

⁶² This is, interestingly, the sort of position Hyppolite (1997, p. 95) attributes to Bergson in *Logic and Existence*, on the basis of which attribution he argues for the superiority of Hegel’s ontology to that which he reads in Bergson.

empirical: insofar as the empirical is understood as real experience, or the sensible in its ‘concrete richness’ (Deleuze and Parnet 2006, p. 54) or ‘thickness’, the movement of the Hegelian dialectic takes place at too great a distance from the empirical; yet, if the empirical is understood in its opposition to the transcendental, as the normal or everyday operation of the faculties (‘natural consciousness’), then Hegel’s philosophy fails to take a sufficient distance from the empirical, remaining confined within its presuppositions.⁶³ (This aspect of Deleuze’s critique of Hegelianism will appear more clearly in the light of the discussion undertaken in the next chapter, where I will distinguish more precisely between philosophical and ‘empirical’ uses of conceptual thought.)

The most disconcerting consequence of this Hegelian approach, for Deleuze, is its conformism. This aspect of Deleuze’s critique of Hegel (as an instance of representational philosophy) will also be explored in more detail in the next chapter, but for now it is sufficient to note that insofar as Hegel’s philosophy disconnects conceptual thought from real experience, it closes thought off from that which accounts for the formation and transformation of concepts. ‘The dialectic is [...] powerless to create new ways of thinking and feeling’, according to Deleuze, because it isolates thought from that which is not already in conformity with its own established requirements (*NP*, p. 183/p. 159). This can be seen in the way in which the transformations that concepts undergo through thought’s dialectical movement are construed by Hegel as implicit determinations becoming explicit; the novelty of

⁶³ Anne Sauvagnargues (2009) has noted this dual character of the empirical in Deleuze: “‘empirical’ in the first case [as a pejorative term applied to Kant’s transcendental philosophy] designates the forms of common experience, a doxic and representational usage in Deleuze’s terminology; whilst in the second case [i.e. the concept of transcendental empiricism] ‘empirical’ is a philosophical concept designating real experience’ (p. 232 [my translation]).

these concepts is not a genuine creation but only a presentation under a new form (a re-presentation) of something already constituted.

For these reasons, Deleuze will seek to reconcile ‘concept’ and ‘experience’ in a non-Hegelian way. In what follows, I will examine the nature of this alternative reconciliatory position in more detail, before proceeding to draw some conclusions regarding what such a position seems to imply for Deleuze’s conception of the relation between philosophy and the sciences.

3.2 *‘Superior empiricism’: concepts, Ideas, dramatisation*

Deleuze’s aim, recall, is to reconcile the philosophy of the concept and the philosophy of experience, or more precisely to reconcile the divergent philosophical orientations he derives from Ferdinand Alquié and Martial Guérout. He follows Hyppolite, not only in this reconciliatory character of his project, but in framing such a project in terms of a post-Kantian problematic of responding to the dualism of Kant’s critical philosophy and its limitations. His transcendental empiricism is an attempt to find an alternative way of overcoming this dualism to that offered by absolute idealism.

Deleuze’s attempt to extricate Hyppolite’s reconciliatory approach to ‘concept’ and ‘experience’ from Hegelianism thus takes the form of an attempt to construct a new kind of empiricism – ‘an empiricism’, as Baugh (1992) has described it, ‘that would be immune to Hegel’s critique of empiricism’, ‘a post-Hegelian empiricist metaphysics’ (p. 133). Deleuze seeks to construct an empiricism in the same vein as that which Jean Wahl (1932) discerns in Schelling, Whitehead, William James and Bergson, among others: an ‘empiricism that would have gone through rationalism and thereby gone beyond it’ (p. 7). It is indicative of the extent

to which Deleuze is indebted to Wahl in conceiving his non-Hegelian reconciliation of Alquié and Guérout in this way that he likely derives the very term ‘transcendental empiricism’ from Wahl’s work.⁶⁴

‘Empiricism’, Deleuze states, ‘is by no means a reaction against concepts, nor a simple appeal to lived experience’ (*DR*, p. 3/p. xx). (*Contra*, it would seem, Badiou’s construal of Deleuze’s position.) Rather, this post-Hegelian empiricism ‘undertakes the most insane creation of concepts ever seen or heard’, although crucially these concepts ‘receive their coherence from elsewhere’, from ‘a moving horizon [...] which repeats and differentiates them’ (*DR*, p. 3/pp. xx-xxi). This horizon, as I will clarify presently, is experience; or more precisely the sensible field insofar as it is composed of dynamic spatio-temporal determinations that ‘express’ (or ‘incarnate’) certain ideal structures.⁶⁵ This idea of an empiricism in which thought’s relation to experience engenders a production of new concepts will prove central to Deleuze’s attempt to account for the relation between concepts and experience in a non-Hegelian manner, insofar as the ‘conformism’ of Hegelianism (noted above) consists in its inability (or refusal) to *create* concepts that are

⁶⁴ ‘The weakness of empiricism and realism is to have left to idealism the prestige of higher thought, of difficult reflection. Setting out from the Kantian affirmation that to be is to be posited [*l’être est position*], it is possible to move towards a positive philosophy analogous to that of Schelling, and towards a higher empiricism. It is possible to have, as Schelling shows, a *transcendental empiricism*, seeking the conditions under which experience is, not possible, but real. This realism will be founded on the critique of the idea of possibility, and on the reality of contingency’ (Wahl 1944, p. 18 [my emphasis]).

⁶⁵ Deleuze derives this notion of *expression* from Spinoza (avowedly) and from Leibniz (somewhat more subliminally); it is the subject of his early study of Spinoza. In that study, Leibniz’s role in the construction of the notion of expression is downplayed, but various commentators have noted his important for Deleuze’s thinking on this point (see Bowden 2010; 2011, p. 56 ff.; and Tissandier 2013). For a general overview of Deleuze’s use of this idea, see de Beistegui (2010, chap. 2). For present purposes, ‘expression’ and ‘actualisation’ can be taken as synonyms.

genuinely new – that is to say, that do not simply raise to the level of the concept determinations that are supposed to already exist at the level of ordinary experience, if only ‘implicitly’. This creation of concepts is, however, the terminus of the movement of philosophical thought for Deleuze. In order to clarify this point, and the way in which concepts are supposed to draw their coherence and meaning from experience, it is necessary first to outline the way in which Deleuze works through the (post-)Kantian problem of the relation between concept and experience.

3.2.1 THE LIMITATIONS OF THE SCHEMATISM

The Hegelian solution to the Kantian problem posed above, endorsed by Hyppolite, is, as I have discussed, to seek to demonstrate that sensible determinations *are*, in the last instance, conceptual determinations. The apparent particularity and immediacy of sensible determinations shows itself to be a form of mediated generality, and thus of conceptual order. In this respect, the Hegelian approach to bridging the gap between concept and experience is, in effect, to dissolve the difference between them, or at least to reveal it to be merely apparent. Deleuze is not satisfied with this solution. He is not satisfied with it, as I have shown, because he believes there to be sensible determinations that are not conceptually specifiable. The ‘thickness’ of experience is composed of non-conceptual differences, and the attempt to conflate these with conceptual differences only produces a distorted image of their nature. It is on the basis of this point that Kant argues for the heterogeneity of general concepts and singular intuitions, and correspondingly the distinction between conceptual thought and sensibility. If one accepts this heterogeneity between the singular and the general – the sensible and the conceptual – then Hegel’s dissolution of the

singular in the general is ruled out as a way of accounting for the relation between concepts and experience.

I have noted above that Deleuze sympathises with these aspects of Kant's position. He will deviate from Kant, however, in how he responds to this heterogeneity of the conceptual and the sensible. How does Kant propose to account for 'the harmony of the understanding [i.e. conceptual thought] and sensibility' (*DR*, p. 281/p. 218)? His suggestion is that this harmony is ensured by what he calls 'schemata'.⁶⁶ A schema is 'a rule for the determination of our intuition in accordance with a certain general concept' (Kant 1998, p. A141/B180) or, in Deleuze's words, 'a rule of determination for time and of construction for space [...] conceived and put to work in relation to concepts understood in terms of logical possibility' (*DR*, p. 281/p. 218). These are rules for relating the spatio-temporal relations found in sensible intuition to the logical relations of conceptual thought, for 'bring[ing] spatio-temporal relations into correspondence with the logical relations of the concept' (*DR*, p. 281/p. 218).

Deleuze does not find Kant's notion of schematism terribly convincing. Given his view that there are sensible differences that are not conceptual differences, and consequent rejection of the (rationalist) reduction of sensible differences to conceptual differences, Deleuze does see the need for something that could do the work done in Kant's philosophy by schemata: namely, a determination of sensibility and a specification of concepts that accounts for their relation to one another. But

⁶⁶ Deleuze also notes Kant's further attempt to account for the relation between the sensible and the intelligible in the Third Critique (*DR*, p. 282 n. 1/p. 328 n. 30), and although there are certain aspects of the picture Kant presents here towards which Deleuze is favourably disposed (*DI*, p. 79 ff./p. 56 ff.), his attitude is ultimately critical (see Kerslake 2009).

Kant ultimately fails, in Deleuze's estimation, to give a sufficiently full and concrete account of how this mechanism is supposed to work. 'This schematism of our understanding', we are told, 'is a hidden art in the depths of the human soul' (Kant 1998, pp. A141/B180-181; see Deleuze 2008b, pp. 17-20). But so long as it remains hidden, the source of this power is obscure.

The problem here, according to Deleuze, lies in the limitations that Kant imposes on his own philosophy. For Kant, the necessity for conceptual forms to be supplemented by the 'matter' of the sensible given if they are to be cognitively contentful implies certain boundaries on the reach of thought. Thought cannot grasp the *being* of things, but only the determinations given to them by and within the forms of appearance – which are, of course, the forms of our cognitive apparatus. As a consequence of this inaccessibility of the inner natures of things to human cognition, the determinations we apply to things in virtue of the nature of our minds cannot be rooted in the determinations that these things have 'absolutely'; nor can the structure of our cognition be grounded in the nature of things so as to ensure some manner of correspondence between thought and being. Consequently, the heterogeneity of concepts and intuitions, and of the general and the singular, must be taken simply as a *brute fact*; it is not possible to delve any deeper into the nature of things in order to seek out a common source of their singular and general determinations. When the distinction between the singular and the general is taken, in this way, as a brute given, the functioning of the schematism inevitably remains 'a hidden art', unable to 'account for the power *with which* it acts' (*DR*, p. 281/p. 218). The need for some ground for the harmony between the singular and the general is acknowledged, but the limitations of our cognitive powers mean that the nature of this ground is unclear.

Deleuze follows the post-Kantians – in particular, his approach is indebted to Maimon⁶⁷ – in taking this approach to be unsatisfactory. The epistemic boundaries Kant imposes on thought, which he takes to be at the core of the critical project, in fact endanger this project, according to Maimon. Once the heterogeneity of concepts and intuitions has been assumed as a given ‘fact of reason’, rather than seeking to account for the ‘genesis’ of this difference, a satisfactory answer to the question of ‘by what right’ particular concepts are applied to particular sensible manifolds in real experience is blocked. Maimon in effect takes the distinction between intuitions and concepts to replicate the transcendental realist’s distinction between the conditions of knowledge and the conditions of the existence of the objects of knowledge, rendering the purported gains of transcendental idealism moot.⁶⁸ However, if ‘the being of the sensible’, that is, the being of sensible things, can be accounted for in terms of an ‘internal genesis’ (*DR*, p. 40/p. 26) of the singular *and* the general, then it can be explained how conceptual thought and sensibility can relate to one another in ‘real experience’. This genesis can be explained, Deleuze suggests, by seeing these (‘differentiated’ or ‘actual’) determinations (both singular and general) as the

⁶⁷ While the centrality of Maimon’s thought to the development of Deleuze’s early philosophy is not undisputed (see Rölli 2003, p. 70), it seems to me that this emphasis is correct; and indeed, that it may even be appropriate up to a point to speak with Beth Lord (2011) of ‘[t]ranscendental empiricism as Maimonism’ (p. 131). As Smith (2012b) has noted, Maimon’s presence can be felt even in works where he is not mentioned directly, specifically *Nietzsche and Philosophy* – ‘the central theme of [which] is that Nietzsche was the first philosopher to have truly managed to fulfil Maimon’s post-Kantian demands’ – and Deleuze’s early works on Bergson (pp. 68-69). On Deleuze’s ‘Maimonism’, see Jones (2009), Kerslake (2009, pp. 138-147, p. 189), Lord (2011, chap. 6), Smith (2012b, chaps 4 and 6) and Voss (2011; 2013b, p. 92 ff.)

⁶⁸ For a fuller discussion of Maimon’s critique of Kant as it pertains to Deleuze, see Voss (2011; 2013, chap. 2); Smith (2012b, chaps. 4 and 5); see also Beiser (1987, chap. 10).

manner in which ‘virtual Ideas’ are ‘expressed’ in the context of dynamic spatio-temporal environments. (I will clarify these terms of art presently.)

So, like Kant, Deleuze believes that accounting for the concrete existence of sensible things – which is to say, the difference between concrete existents and merely ideal objects or objects of thought – requires us to situate them in a spatial and temporal context that is not reducible to conceptual determinations. He thus embraces Kant’s critique of (Leibnizian) rationalism, and is unconvinced that Hegel’s attempt at a post-Kantian recuperation of rationalism succeeds. Deleuze deviates from Kant’s account of the way in which non-conceptual determinations make the difference between ideal objects and concrete objects, however. For Deleuze, it is important that the spatio-temporal milieu that determines concrete existents actually *makes a difference*, that is, that *coming into being* is a formative, determining process for the entity in question – a creative process – and not simply the addition of the empty matter of ‘brute existence’ to a form that is already fully determined (if only ideally or abstractly, as a ‘possibility’). This ‘creativity’ of the genesis of concrete existents can be accounted for, however, only insofar as thought ventures ‘beneath’ the surface of the sensible given in order to grasp the latter’s genetic conditions (its sufficient reason). In this respect, then, Deleuze rejects the limits on the intelligibility of reality that Kant takes to follow from his critique. Like Maimon, Deleuze sees a transgression of the limits which Kant’s formulation of the critical project places on thought as the best way to salvage this very project.⁶⁹

⁶⁹ For an exploration of Deleuze’s early work from this point of view, see Kerslake (2009). It is interesting to note that Deleuze takes up here an idea that can be found in the thought of both Guérout (see above) and Jules Vuillemin (1962, §§25 and 60), namely that some kind of transgression of the constraints placed on thought by Kant is necessary in order to salvage the critical project. It is perhaps no coincidence, then, that Deleuze’s reading of the post-Kantians and of the

3.2.2 VIRTUAL IDEAS AND THEIR ACTUALISATION

I have said that Deleuze conceives the determinations of concrete existents as the expressions of virtual Ideas in a dynamic spatio-temporal context. It will be helpful here to clarify some of these notions in order to make clearer both the precise nature and stakes of Deleuze's position and how it differs from the idealism of Hegel idealism (as read by Deleuze via Hyppolite) and Kant.

I have noted that Deleuze rejects Hegel's attempt to conceive the being of the sensible in terms of an inherent conceptual order. In order to see how Deleuze's position differs, it is necessary to determine what Ideas are, and how they are supposed to differ from concepts. In 'The Method of Dramatisation', Deleuze states that the difference between Ideas and concepts is best understood in terms of the different ways in which they are related to concrete particulars. The difference here can be expressed in terms of the difference between 'virtual' and 'actual' on the one hand, and 'possible' and 'real' on the other. Ideas are *virtual* structures that are *actualised* in concrete individuals; whilst concepts are *possible* forms that are instantiated by *real* things.⁷⁰ What exactly is the difference here supposed to be? The notion of realisation, as Deleuze understands it, corresponds to a conception of possibilities as fully constituted, lacking only existence. The only difference between

limitations of Kant's philosophy is especially indebted to the historiographical work of these two thinkers (see *NP*, p. 58 n. 2/p. 205 n. 12).

⁷⁰ Deleuze's discussion of possibility draws on that of Bergson (1946, chap. 3). For an outline of Deleuze's and Bergson's discussions of the virtual and the possible, see Ansell Pearson (2002, chap. 3).

the concept of a thing and the thing itself is the reality of the latter.⁷¹ On this view, ‘we are forced to conceive of existence as a brute eruption’, ‘*the same* as but outside the concept’ (*DR*, p. 273/p. 211). The actualisation (or expression) of a virtual Idea, by contrast, ‘is always creative with respect to what it actualizes’ (*DI*, p. 141/p. 101); ‘actualisation [...] is always a genuine creation’ (*DR*, p. 272/p. 212). The determinations of an actual thing are not simply a reproduction of determinations that already exist ‘ideally’ or ‘abstractly’ – as ‘possibilities’ – in the Idea. Ideas are determinate, Deleuze states, but these determinations ‘do not resemble’ the actual determinations of the thing whose existence expresses the Idea (*DR*, p. 212/p. 163). Virtual Ideas are determined in a different way to actualities.

I have suggested that the actualisation of Ideas is a creative process, for Deleuze, insofar as the Idea is determined in a different way to that in which its actual expressions are determined. How do these two regimes of determination differ? Terminologically, Deleuze will mark this difference by describing Ideas as *differentiated*, whilst actualities are described as *differenciated* (*DR*, p. 267/p. 207). Whilst fully actualised or ‘differenciated’ entities possess identities that persist through change and time, and properties in virtue of which they resemble to a greater or lesser degree other entities, Ideas are determined *purely differentially*. They are ideal structures composed of differential relations that determine a distribution of

⁷¹ It is clear that Deleuze has in mind here Kant’s (1998) claim that ‘[b]eing is [...] not a real predicate, i.e., a concept of something that could add to the concept of the thing’ (p. A589/B626). Kant (1998) uses a monetary example: ‘A hundred actual dollars do not contain the least bit more than a hundred possible ones’ (p. A599/B627). Consequently, ‘the actual contains nothing more than the merely possible’ (Kant 1998, p. A599/B627).

‘pre-individual singularities’ or ‘singular points’.⁷² If virtual Ideas are ideal ‘space[s] of variation’ (Bryant 2008, p. 250), then the patterns of singularities that compose the Idea map the tendencies of available trajectories (Deleuze will sometimes refer to them as ‘lines’) of actualisation of the Idea.⁷³ These are ‘points where something “happens” within the structure of the Idea (Smith 2012b, p. 247), ‘points which exhibit remarkable properties and thereby have a dominating and exceptional role’ in determining how the Idea is actualised (Duffy 2013, p. 22). While Deleuze’s initial presentation of these concepts is mathematical, he means for them to be applicable more generally. To take a couple of examples from the Deleuze scholar Daniel Smith (2012b), ‘the point where a person breaks down in tears, or boils over in anger’ is a singularity in Deleuze’s terminology just as much as is the point at which ‘water boils or freezes’ or the ‘four corners or *extrema*’ that define the geometrical figure of a square (p. 247).⁷⁴

What is important about these pre-individual singularities, for present purposes, is that they are not themselves determinate, but are *reciprocally*

⁷² Deleuze takes this notion of singularity from Albert Lautman’s discussion of Poincaré qualitative theory of differential equations (Lautman 2011, pp. 178-182), although his characterisation of them as ‘pre-individual’ derives from his reading of Gilbert Simondon’s work (see *DI*, p. 120 ff./p. 86 ff.; also Bowden 2012).

⁷³ A very much longer and more involved discussion would be necessary in order to cash out fully the mathematical background required for a more detailed presentation of Deleuze’s use of the concept of singularity. For such a discussion, see Bowden (2011, chap. 3); DeLanda (2002, chap. 1); Duffy (2013, esp. chaps. 1 and 4); and Smith (2012b, chaps 3 and 14).

⁷⁴ This drift whereby mathematical terms are put to use beyond the parameters of their mathematical uses (a movement which I will qualify as one of metaphor) will be discussed in chapter 3. For now, suffice it to say that it is my view that the precise mathematical formulations of these concepts are only suggestive of the less precise meanings these terms take on in the context of Deleuze’s philosophy.

determined by the differential relations of which the multiplicity is composed.⁷⁵ This notion of reciprocal determination of terms within a structure of differential relations is significant for Deleuze because, he contends, the ‘indetermination’ of the terms taken independently of their reciprocal determination by their differential relations to one another ‘renders possible the manifestation of difference freed from all subordination’ to some prior identity – that is, they are ‘pre-individual’ (*DR*, p. 237/p. 183). In this way, the determination of Ideas does not presuppose the kinds of determinations possessed by actual entities, which are individuals with persisting identity conditions and instantiating general types.

Conceiving of ‘actual’ determinations (both singular and general) as arising from the reciprocal determination of otherwise indeterminate terms in the context of a differential relation allows us, according to Deleuze, to conceive of these actual determinations not as brute givens but as the creative *expressions* of virtual determinations. It allows him, in other words, to conceive of a reality that is *determined*, but not in the way in which actuality is determined, so that the move from Ideas to actual things produces new determinations not previously existent, even as idealities. It is in this sense that actualisation, unlike realisation, is a genuinely creative process.

I have shown how Deleuze reconceives the ideal so that it is not simply a mirror image of the concrete – nor, conversely, the concrete a mirror image of the ideal. This is part of his attempt to show, *contra* Hegel, that the move from the ideal

⁷⁵ ‘The Idea is [...] defined as a structure’, a ‘set of relations’ between ‘elements reciprocally determined by these relations’, elements which, since these ‘reciprocal relations [...] allow no independence whatsoever to subsist’, are *indeterminate* outside of their differential determination in relation to one another (*DR*, p. 237/pp. 182-183).

to the concrete makes a substantive difference, so that the latter cannot be reduced to a 'moment' of the former. But this is not the whole picture. Recall that Deleuze concurred with Kant about the role played by space and time in making this difference. Thus, for Deleuze, it is space and time, understood as milieux composed of non-conceptual determinations (or differences), that effect this creative determination whereby Ideas express themselves in concrete individuals. Deleuze will criticise Kant, however, for treating space and time as indifferent, homogeneous media, unable to account for the work of determination they are supposed to carry out (*DR*, p. 298/p. 231). This criticism is connected to a conflation of the possible and the virtual: if the difference that spatio-temporal determinations are supposed to make is the difference between the possible and the real, then the need for space and time to be conceived in such a way that they can make a substantive contribution to the determination of concrete sensible existents is evaded, since these existents are already fully determined in the abstract space of conceptual possibility. If, however, what space and time need to account for is the production of actual determinations that 'do not resemble' the virtual determinations of the Idea of which they are an expression, then space and time will have to be conceived in such a way as to be able to make such a substantive contribution. Deleuze will thus suggest that space and time ought to be conceived as *dynamic*, as 'pure spatio-temporal dynamisms'; not as static and homogeneous forms, but as composed spatially of 'directions', 'movements and orientations' and temporally of 'differential rhythms', 'rates', 'paces', 'decelerations or accelerations' (*DR*, p. 277/p. 215, pp. 278-280/pp. 216-217). It is these dynamic spatio-temporal environments that Deleuze is seeking to describe in chapters 2 and 5 of *Difference and Repetition*, when he discusses a series of 'temporal syntheses' (habit, pure memory and eternal return) and 'spatial

syntheses' (explication, implication or depth, and the pure *spatium*) (*DR*, p. 296/p. 230). Deleuze describes this milieu of dynamic processes of spatio-temporal determination (or synthesis) as a 'field of individuation' (e.g. *DR*, p. 318/p. 247): this is the sub-conceptual sensible field as the site of the production of individuals (*individuation*) and of the determination of their singular and general determinations (*differenciation*).

3.2.3 THE DRAMATISATION OF CONCEPTS

It is necessary at this stage to relate these ideas back to our initial question, namely: how should the duality introduced by Kant between concepts and experience be overcome? Where do *concepts* belong in the picture sketched so far? Recall Deleuze's dissatisfaction with the Kantian notion of schematism. Having acknowledged the heterogeneity of concepts and intuitions, Kant posits the procedure of schematisation, carried out by the imagination, which applies concepts to intuitions. But the way in which concepts and intuitions are supposed to be able to relate to one another remains mysterious. In particular, the problem, for Deleuze, is that Kant begins with given, fully determined concepts and seeks to ascertain how they come to be applied to determinations of a quite different kind. Deleuze's (Maimonist) solution, as I have said, lies in trying to get behind the heterogeneity of these fully determined instances – concepts and intuitions – to grasp the *genesis* of these determinations. Rather than working back from fully constituted concepts in order to try to account for how they can be applied to a heterogeneous sensible field, Deleuze proposes that the determination of concepts be viewed as itself a product of this processes of spatio-temporal synthesis that accounts for the determination of the sensible field. There is, thus, a co-genesis of concepts and intuitions, such that the

concept and the object to which it refers come into being together, both products of the syntheses of experience. It is only insofar as concepts are specified by sub-conceptual experience in this way that they can come to be specified enough to be capable of grasping singular things. Deleuze will refer to this specification of concepts by experience as ‘dramatisation’: ‘pure spatio-temporal dynamisms have the power to dramatize *concepts*, because first they [...] incarnate *Ideas*’ (*DI*, p. 138/p. 99). Rather than a Kantian schema, which realises conceptual relations in spatio-temporal relations, the dynamic spatio-temporal milieu in which Ideas are expressed forms a ‘drama’ which *animates* concepts, makes and remakes them, giving them a determinacy and a specificity that pure concepts, in their generality, lack.

Concepts are thus in some sense the products of experience, for Deleuze. This dependence of concepts on their relation with sub-conceptual experience does not, however, imply a constraint on the creative power of conceptual thought. Rather, it is *because* experience *exceeds* conceptuality in the richness of its determinations that conceptual thought is constantly driven to create new concepts. As Deleuze states, ‘the search for actual concepts can be infinite’ precisely because ‘there is always an excess of virtual Ideas animating them’ (*DI*, p. 154/p. 110). Conceptual thought is capable of an endless reconfiguration of its parameters and production of new resources, but only as a result of its determination by sub-conceptual experience and the Ideas it expresses.

I am now in a position to clarify the manner in which Deleuze’s transcendental empiricism proposes to reconcile the philosophy of the concept and the philosophy of experience, or Guérout and Alquié. Recall Peden’s (2011) formulation of the dispute between these two thinkers as one between ‘a philosophy

which emphasizes the limits of rational thought to the profit of a more primordial, ineffable experience or intuition, and a philosophy which insists upon the capacity of rationalism to transgress the limits of lived experience in order to articulate conceptual insights of a universal or indeed absolute variety' (p. 365). Badiou suggests that Deleuze's post-Hegelian empiricism depreciates the power of conceptual thought in favour of a quasi-phenomenological study of concrete experience. It is, however, precisely such an opposition between the power of conceptual thought and 'the concrete richness of the sensible' that Deleuze's transcendental empiricism is seeking to undermine. The 'thickness' of the sensible does present a 'limit' to conceptual thought and determine its 'meaning' (*sens*), but this relation to the sensible as a site of Ideas turns out to be what provokes in thought a conceptual creativity that is not constrained by the limits of 'lived experience' (i.e. conscious experience of actualities).⁷⁶ Thus, the plasticity of conceptual thought – in the sense of its creative power to reconfigure its own structure and parameters – is a consequence of its relation to a sensible order that is not conceptual and which thought cannot grasp exhaustively. It is in this way that transcendental empiricism seeks to reconcile 'the philosophy of experience' and 'the philosophy of the concept': experience exceeds conceptuality, but does so insofar as it incarnates (quasi-conceptual) ideal differential structures; concepts are determined by experience, but determined to be created and recreated with boundless plasticity. In this way, Deleuze rejects a brute separation between concepts and experience, but equally a dissolution of the distinction between concepts and experience, arguing

⁷⁶ '[L]imit (πέρας) no longer refers to what maintains the thing under a law, nor to what delimits or separates it from other things. On the contrary, it refers to that on the basis of which it is deployed and deploys all its power' (*DR*, p. 55/p. 37).

instead for a complicity between the creative dynamic of concepts and experience as a field of differential syntheses and structures. It seems, then, that Deleuze best sums up his reconciliatory position in the lines on transcendental empiricism quoted above, which can now be read with a fuller understanding of their meaning: ‘Empiricism is by no means a reaction against concepts, nor a simple appeal to lived experience’, but demands a ‘creation of concepts’, with the caveat that these concepts must ‘receive their coherence from elsewhere’, namely from experience understood as a series of passive spatio-temporal syntheses expressing ideal differential structures (*DR*, p. 3/p. xx).

Conclusion

I began this chapter by outlining the centrality for metaphilosophical debates in French philosophy of questions pertaining to philosophy’s relation to the sciences. Interconnected with philosophers’ attitudes towards the sciences, I have suggested, are their positions on the relation between conceptual thought and experience. Having explored the stakes of Deleuze’s conception of philosophy in terms of his diverse filiations, what conclusions can be drawn concerning his conception of philosophy’s relation to the sciences?

It is helpful at this point to recall Frédéric Worms’ formulation of the two types of relation between philosophy and the sciences typical in twentieth-century French philosophy: philosophy can be concerned to delineate the boundaries of legitimate scientific activity by studying that in reality or experience which resists scientific thought; or philosophy can be concerned to facilitate the ongoing progress of scientific thought through a critique of that within scientific thought which tends towards dogmatism and stagnation. What sort of attitude does Deleuze’s position

suggest? Is philosophy's task to facilitate the unlimited expansion of scientific knowledge, or to demarcate its *a priori* limits? Shifting away from talk of scientific thought for a moment, and substituting conceptual thought in general, it becomes apparent that Deleuze's position – as might be expected given his reconciliatory ambitions – straddles this contrast. Deleuze is committed to the view that conceptual thought is limited in principle by real experience, which refuses to conform to strictly conceptual order. However, the 'dramatising' relation to this extra-conceptual experience is what permits conceptual thought, according to Deleuze, to mutate and reconfigure itself – and, as I will explain in more detail in the next chapter, it is part of philosophy's task (the 'critical' aspect of its task) to keep this possibility of transformation open. Transcendental empiricism's relation to conceptual thought is thus *dual*, as is reflected in the two uses or modes of conceptual thought I will discuss in the next chapter. Before any firm conclusions concerning Deleuze's conception of the relation between philosophy and the sciences can be drawn, however, some more work will need to be done to clarify what sort of relation exists between *scientific* thought and conceptual thought more generally, which is to say, where science lies, according to Deleuze, in relation to the distinction between the two modes of conceptual thought.

It is possible to note already at this stage, nevertheless, that Deleuze does not seem to be concerned to take the sciences as a model for philosophy. Rather, he embraces a creative conception of philosophy that seems hard to square with the exigencies of scientific research. Deleuze's conception of the power and unboundedness of conceptual thought focuses on *creativity* rather than analytical acumen or the autonomy of conceptual thought from experience. In this respect, it seems that a 'Guéraultian' structuralism is placed in the service of something more

like Alquié's literary model of philosophy. His embrace of a notion of the plenitude of sub-conceptual experience and its resistance to conceptualisation seems to pull him away from philosophies, such as Cavailles' or Bachelard's, that would identify the development of the sciences with the very movement of thought. This tentative conclusion will need to be rendered more solid, however, by considering in more detail what sort of conception of the relation between science and conceptual thought can plausibly be attributed to the early Deleuze, as well as how the scientific conceptual resources on which Deleuze draws are being put to use in the context of this philosophy so focused on creation and creativity. It is these questions that I will address in the next two chapters.

Chapter 2

Cognition, Creation and Critique

The Task of Philosophy and the Limits of Science

Introduction

As discussed in the introduction, what I am calling the scientific reading of Deleuze – originally offered by Manuel DeLanda and subsequently developed by John Protevi, and in relation to which the present thesis is offered as a corrective – effectively collapses the distinction between philosophy and science in such a way that *philosophy's* contribution is hard to discern. It is thus important for the purposes of this corrective to get clear about where the faultlines between philosophy and science lie in Deleuze's early thought. I have noted in the previous chapter that, in the context of a philosophical field in the process of renegotiating its borders with the sciences, and for some, of questioning the need for such borders, Deleuze insists on the specificity of philosophy in relation to the sciences. However, I have also noted that he does not make at all clear how such a demarcation is to be conceived; and indeed, his discussion of structuralism seems not to respect any such border.

In the present chapter, then, I will suggest a plausible way to formulate the distinction Deleuze is envisaging between philosophy and the sciences when he proclaims the former's 'specificity'. I will seek to do this by exploring the distinction he draws between (what I will call) knowledge production on the one side and the conjoined processes of problematisation and concept formation on the other. (I will, following Deleuze's own terminology, speak of 'critique' and 'creation' respectively

as shorthand for these dual features of ‘thinking’.) I will clarify how Deleuze conceives the difference between these two kinds of process in terms of two different kinds of relation between concepts and Ideas (problems). Having done this, I will plot the relation between philosophy and the sciences onto this distinction. This will not result in a neat identification of philosophy with problematisation and concept creation and science with knowledge production. But it will show how this distinction can illuminate the different concerns, motivations and stakes of philosophy and the sciences as Deleuze conceives them in his early work. In this way, I will clarify where the scientific reading goes astray in losing sight of the importance for Deleuze of these differences.

The discussion by which I will arrive at these conclusions will be structured as follows: In §1, I will outline Deleuze’s understanding of cognition as *representational* and explain how he takes cognition and representation to be associated with a transcendental illusion. In §2, I will look at Deleuze’s conception of philosophical thinking as critical and creative by situating it in relation to representation and its transcendental illusion. Finally, in §3, having outlined both the representational and the critical-creative uses of conceptual thought, I will discuss how these modes of thought seem to be related to science in Deleuze’s work, and attempt to reconstruct a plausible account of Deleuze’s early view of the nature of scientific thought. My conclusion will be that whilst the sciences manifest both representational and critical-creative dimensions, certain key features of the scientific enterprise keep it bound to representation, by contrast with philosophy’s constitutive antagonism towards representation. I offer some initial explanation as to why philosophy and science might differ in this manner in their relation to the different modes of conceptual thought.

1 Representation and the transcendental illusion of the self-sufficiency of concepts

1.1 *The representational structure of cognition*

Cognition, Deleuze suggests, has a ‘representational’ structure, which can be thought of, at least initially, as a *propositional* structure, consisting of a subject and a property or predicate. (As will become apparent in what follows, Deleuze’s notion of the representational character of cognition will ultimately prove to be a good deal more complex than this.) By ‘cognition’ here I mean to refer, in a Kantian mould, to a certain kind of experience, namely the sort of cognitively ‘contentful’ experiences that are in a position to play a *rational* (and not merely causal) role in the ongoing rectification of our body of beliefs and knowledge.¹ Kant argues that such experiences involve the contributions of two distinct mental faculties or capacities: sensible intuition and conceptual understanding.² These faculties collaborate in the production of cognition (cognitively contentful experience), the given sensible content providing the ‘matter’ to which the understanding applies conceptual ‘form’. Deleuze will follow Kant in conceiving of cognition as the product of a ‘collaboration’ of diverse faculties or capacities. He refers to this collaboration as

¹ In recent Anglophone philosophy, John McDowell (1996) must perhaps be credited for having foregrounded (and foregrounded as a Kantian notion) this conception of the *cognitive*, rather than merely causal, role of experience in our economy of belief, and the (again Kantian) idea that for experience to play such a role it must be *propositionally structured* – although it should be noted that more recently McDowell (2009) has altered his position on these points.

² ‘Our cognition arises from two fundamental sources in the mind, the first of which is the reception of representations (the receptivity of impressions), the second the faculty for cognizing an object by means of these representations (spontaneity of concepts) [...] Intuition and concepts therefore constitute the elements of all our cognition’ (Kant 1998, p. A50/B74).

‘common sense’ (DR, p. 174/p. 133). It is common sense as the form of cognition that lies at the root of the cognition’s representational structure. A clarification of common sense, and of his conception of the nature of cognition more generally, will thus allow us to clarify further what, for Deleuze, characterises cognition as representational.

Deleuze characterises cognition as ‘the harmonious exercise [*l’exercice concordant*] of all the faculties upon a supposed same object [*un objet supposé même*]’ (DR, p. 174/p. 133). Hence, cognitive experience is polarised: it stretches between the identity of the subject on the one hand and the identity of the object on the other.

Let us first consider the object of cognition. Deleuze refers to the basic mental act characteristic of cognition of an object as ‘recognition’.³ An act of recognition is the subjective act of grasping something *as* being something, either in the sense of identifying it as the *particular* thing that it is, or else in the sense of identifying what *type* of thing it is. This is an extremely familiar procedure: I see or perhaps hear something; I perceive that it is a cat. I also perceive it as having certain properties (colour, size, etc.). Perhaps on this basis I am able to perceptually identify the breed of cat. Perhaps I grasp that this cat is not just an instance of the kind ‘cat’,

³ It is worth noting that the French term that Deleuze uses to designate this operation, *récognition*, is less usual and more technical than the word *reconnaissance*, which would perhaps have been a more natural choice all else being equal. It seems likely, then, that Deleuze’s choice of *récognition* over *reconnaissance* is meant as an allusion to Kant’s use of the term recognition – or *Rekognition* in German, as in *die Synthesis der Rekognition im Begriffe*, the third synthesis of the A-Deduction – which is generally translated into French as *récognition*. Kant’s discussion here of the unification of the sensible manifold by its subjection to a rule (which is to say, a concept) and the role played by the transcendental unity of apperception in this operation clearly marks Deleuze’s understanding of the nature of cognition.

nor even of a certain breed of cat which I am capable of identifying, but even a particular cat, namely *my* cat. In what is, in the context of Deleuze's often conceptually 'baroque' corpus, a rare moment of terminological tranquillity, it is little linguistic strain for us to characterise cognitive activity of this sort as 'recognition' – indeed, we would no doubt happily describe this situation as 'recognising that this is a cat', or 'recognising my cat'.⁴

Deleuze distinguishes two aspects of such mental acts. Firstly, there is a capacity to identify and track – hence, *re-identify* – a particular object across distinct experiential instances. This is not yet the case of recognising a particular as an instance of a type, nor even as a specific particular, but rather simply the capacity to pick out from the 'flux' of experiences some as yet indeterminate object as *the same* object, as persisting – that is, of maintaining its identity through time and change – and consequently as capable in principle, should it vanish from our experiential field, of reappearing in it at some later point.⁵ Secondly, there is a capacity to *specify* such enduring, (re)identifiable objects, determining them by subsuming them as given particulars under given general types (that is, under concepts).

Making a distinction within his initial notion of common sense, Deleuze will ultimately reserve this term itself for the first aspect of recognition, referring to the second aspect as 'good sense'. Common sense, then, is 'the form of the unspecified

⁴ The distinction between recognising something to be a certain way and recognising *that* things are thus-and-so, that is, the distinction between perceptual knowledge of things and of state of affairs, is not important for the purposes of Deleuze's discussion. Insofar as perception-of is a perception of a persisting, self-identical object qualified by a set of properties, it exhibits *propositional* structure just as much as perception-that, for Deleuze.

⁵ It should perhaps be noted that identification without conceptual specification would still not count as cognition of an individual for Deleuze, since the identity of the unspecified object is, he will claim, precisely a *general form* and not constitutive of the *individuality* of an entity.

object' (*DR*, pp. 174-175/pp. 133-134) which provides 'the identity of whatever object serve[s] as a focus for all the faculties' – and hence the basic structure of (re)identification – whilst good sense 'determine[s] the indeterminate object as this or that' – and is thus the basic dynamic of conceptual or predicative (i.e. representational) specification (*DR*, p. 291/p. 226). As noted above, in reality, common sense and good sense form a composite (namely cognition): hence, 'we never confront a formal, unspecified, universal object but only this or that object', and 'conversely, qualification operates only given the supposition of the unspecified object' (*DR*, p. 175/p. 134). There can be no specification without an object to specify, and yet the perceptible object is always perceptually given as specified (we are never experientially confronted by an 'object in general').

So much for the object of cognition – what of its subject? With regard to characterising the subject of cognition, common sense – or the *identity* of the subject – is perhaps the more important aspect. Recall that cognition involves a 'harmonious exercise of the faculties' (*DR*, p. 174/p. 133). I have shown that, on the side of the object, cognitive experience displays a certain unity, namely the unity of the object of cognition as persisting across distinct moments of experience. But this unity of the object also extends between faculties. As Deleuze states, '[a]n object is recognised [...] when one faculty locates it as identical to that [i.e. the object] of another' (*DR*, p. 174/p. 133).⁶ This inter-facultative character of the identity of the object implies 'the unity of a thinking subject', of which Deleuze suggests 'the other faculties' be

⁶ Deleuze suggests that *all* the faculties need to be coordinated in each act of recognition, but this seems to me an unnecessarily strong claim. All he really needs to claim is that all the faculties *that are involved* in any given act of recognition maintain a certain kind of relationship, and that more than one faculty must be involved in any such act.

considered ‘modalities’ (*DR*, p. 174/p. 133). The identity of the subject can thus be conceived as that which underlies the possibility of distinct faculties’ ‘triangulation’ on a ‘supposed same’ object.

Another way to think about this would be to see the identity of the subject as that in virtue of which we can speak of a unified consciousness to which all the faculties contribute. If the field of objects of experience is *a* field, this is insofar as it is – in Heidegger’s (1996) apt phrase – ‘in each case mine’ (p. 108). If each act of recognition belongs to a stream of consciousness, it is *a* stream in virtue of its belonging to *a* subject, and in turn insofar as the faculties that collaborate in each act of recognition belong to this same subject.

This is common sense as the subjective form of cognition. Good sense, in its subjective aspect, is the specification of ‘empirical selves’ (*DR*, p. 175/p. 134), the ‘individualising [of] the self’ whereby it is determined as a concrete person (*DR*, p. 291/p. 226). It would seem in keeping with the general tenor of Deleuze’s position to think of this specification of the self, in a Humean fashion, in terms of the ongoing constitution of a person’s ‘character’ (or personality) through the acquisition of a set of habits.

The field of cognition constituted by the dual forms of the identity of the subject and the identity of the object, and the dual dynamics of the ongoing conceptual specification of objects and the ongoing specification of the character of the self, is what Deleuze refers to as ‘the world of representation’ (*DR*, p. 179/p. 137). I am now in a position to give a richer characterisation of the sense in which this world has a propositional, or subject-predicate, structure: at both poles of cognitive experience – the subject and the object – what we see is a specified (i.e. predicatively qualified) identity (i.e. subject or substance). Both subject and object

are determined by predicative qualifications (good sense) within a general form of identity (common sense), and thus go to make up an experiential field with propositional structure and conceptual or cognitive content (representation).

This brings us to a point about Deleuze's characterisation of cognition as representational which will be crucial for his conception of philosophy as bound up with a critique of representation: namely, it is not important for Deleuze how we conceive the relations of ontological priority between the subject and the object of cognition. Thus, whether subjectivity and objectivity are conceived as equally brute existences, or the structures of subjectivity conceived as dependent upon a world of mind-independent objects, or the objectivity of cognition conceived as a function of structures of subjectivity, these conceptions are still operating within the framework of representation. (Likewise, if one airs on the side of the subject as the source of the objectivity of cognition, it is not a significant move to shift from thinking of this subjectivity in terms of an individual subject to thinking in terms of social cognition.) So long as one continues to operate within the parameters of representational structure, according to Deleuze, the same problems will arise. This helps us to clarify the appeal, for Deleuze, of *empiricism*, and the reasons why he sees a (transcendentalised) empiricism as a superior approach to that of transcendental idealism (in either its Kantian or phenomenological modes). Whilst on various occasions Deleuze seems to suggest that he takes subjectivism (idealism) to be a superior approach to objectivism (realism), this does not seem to be an essential feature of his view (in chapter 3 of *Proust and Signs*, for example, Deleuze points to objectivism and subjectivism as two equally flawed attempts to discern the source of the meaning of a sign). Nevertheless, in a milieu in which the subjective construction of objectivity has become a dogma, transcendental empiricism's

challenge is to show that subject and object alike are the dual figures of a representational structure the genesis of which will have to be accounted for.⁷

In the light of its propositional structure, the world of representation is ordered in terms of *generalities*. The forms of identity proper to the subject and the object of cognition are, as already noted, general forms, shared by any subject or object insofar as they are a subject or an object respectively; furthermore, the specifications applied to these objects and subjects by good sense are generalities, shareable attributes, assigning the self or object in question to a type. (Deleuze will also note that membership of these types is assigned on the basis of *resemblances* between distinct objects, and consequently again by reference to general, i.e. shareable, features.) Consequently, the basic mechanism of determination at the heart of recognition is one of *subsumption*. Particulars are determined by being subsumed under general types, whilst these general types themselves are determined in turn by their subsumption under higher-level types. Deleuze will refer (at each level of determination) to the higher-level types as ‘genera’ and the subsumed types as ‘species’. The representational structure of cognition is thus a subsumptive structure of nested generalities. At each level of the taxonomic hierarchy, a number of mutually exclusive (opposed) species are subsumed under the identity of a genus, until we reach ‘the *infima species*’ (*DR*, p. 47/p. 31), that is, the level of particulars, at which point the hierarchy of identity and opposition bottoms out in a play of

⁷ If Deleuze is most concerned to oppose his transcendental empiricism to (transcendental) idealism, this is no doubt due to the dominance of idealist or subjectivist tendencies – phenomenology, but also Cartesianism, Kantianism and Hegelianism – in the intellectual milieu into which his writings were an intervention. This is perhaps why his initial presentation of empiricism in *Empiricism and Subjectivity* focuses on empiricism’s capacity to account for the genesis of *subjectivity*: since its foil is various modes of transcendental idealism, the book feels at liberty to take for granted the need for objectivity too to be constructed.

resemblances. It is the structure of this subsumptive hierarchy that Deleuze characterises through his descriptions of the ‘quadripartite fetters’ of representation: identity, analogy, opposition and resemblance (*DR*, p. 180/p. 138; see also pp. 44-45/p. 29, p. 337/p. 262).⁸

Generality, as the manner of ‘distributing’ determinations proper to the ‘economy’ of representation,⁹ should be thought of, according to Deleuze, as having both a temporal and a spatial aspect. From a temporal point of view, generality is inseparable from a certain movement of homogenisation, whereby the movement from the past to the future appears as a movement from like to like. Likewise, spatially, the explication of differences in extensity and in the qualities that fill this extensity is inseparable from their disappearance behind these extensities and qualities. The space and time corresponding to the representational order of generalities are consequently indifferent, homogeneous media. Spatial and temporal determinations appear to make no difference to the general types under which particulars are subsumed.

This last point should already begin to indicate the way in which the perspective of representation is permeated by illusion, since, as I noted in the

⁸ I have omitted from my presentation for the moment the notion of analogy, which pertains to the status of the highest genera (or ‘categories’), that is, those most general determinations that do not form the species of a still higher genus. The question of the status of the categories is ultimately, for Deleuze, a question of the status of being and the nature of its ‘distribution’ among the various levels of the hierarchy. I will have reason to return to the question of the analogy of being in chapter 4, where the significance of Deleuze’s early notion of ‘immanence’ for his conception of the relation between philosophy and science will be considered. For now, however, I believe that a general presentation of the critique of representation can, for the sake of succinctness, be made with reference only to the problem of the being of individuals.

⁹ The economic metaphor is Deleuze’s (see *DR*, p. 7/p. 1).

previous chapter, Deleuze rejects this conception of time and space as homogeneous media. Having sketched the representational structure of cognition in this first section, I will go on in the coming section to outline the way in which representation is bound up, for Deleuze, with transcendental illusion.

1.2 *Representation as the site of transcendental illusion*

‘Representation’, Deleuze will argue, is ‘the site of transcendental illusion’ (*DR*, p. 341/p. 265 [translation modified]).¹⁰ If there is a transcendental illusion tied to representation, it lies in the way in which the ‘createdness’ of concepts, and correspondingly the relation between concepts and their production by spatio-temporal syntheses and as expressions of Ideas, is inevitably obscured from the point of view of the cognising subject, with the consequence that the significance of concepts, and of the activity of conceptual thought, comes to be identified with the use of concepts within the economy of generality proper to representation. Insofar as representation consists in the operation of conceptual thought within the horizon of this transcendental illusion, representation or cognition can be identified with ‘pure’ conceptual thought. That is to say, conceptual thought operates representationally or cognitively when it is separated from real experience and the Ideas it expresses.

What will prove to be most important about this illusion, for Deleuze, is that through it, ‘thought is covered over by an “image” made up of postulates which distort both its operation and its genesis’ (*DR*, p. 341/p. 265). This is the case, as I will illustrate in more detail shortly, insofar as what Deleuze will term ‘thought’ or

¹⁰ Here Deleuze’s statement that representation is *le lieu* of transcendental illusion is no doubt intended to echo Kant’s (1998) description of ‘pure reason’ as the ‘seat’ (*der Sitz*) of transcendental illusion (p. A298/B355).

‘thinking’ is, he claims, a process with an essential relation to sub-conceptual experience and the Ideas it expresses. If this relation between concepts and experience is obscured, then so is our capacity for thinking (and thus for philosophising).

In his *Critique of Pure Reason*, Kant seeks to show the illusions and errors that conceptual thought falls into when it operates solely in accordance with its own demands. Concepts, he argues, can only yield synthetic *a priori* knowledge to the extent that these concepts are applied to singular sensible intuitions, and thus constrained by the limits of space and time as the *a priori* forms of sensible intuition. Deleuze, in turn, can also be seen to offer a critique of pure conceptual thought, conceptual thought left to its own devices. Conceptual thought, for Deleuze, falls into illusion when it tries to use its concepts outside of the context of dynamic sensible milieux (spatio-temporal syntheses) incarnating ideal problematic structures. In both case, then, what is at stake is, in some sense, conceptual thought’s ambition to operate in separation from the sensible.

The operation of thought I have just described – knowing or cognising – is what happens, according to Deleuze, when concepts lose their moorings in *Ideas* and begin to operate in isolation from the vital experiential milieux that imbue them with meaning and ‘movement’ (one might say ‘life’).

This illusion has its roots in the representational structure of our cognition. To qualify an illusion as ‘transcendental’ is, for Deleuze (following Kant), to qualify it as *inevitable* given the nature of our thought itself. In order to see why this illusion is an inevitable illusion (for creatures like us, at least), recall the polarised structure of the field of representation. As subsumptively structured, this field is ordered in terms of persisting, qualified objects and the unity of a subject. But in each case *I am*

that subject. What it is to be a subject, for Deleuze, to be an ego or a person, is to be a pole in a subsumptively structured field of consciousness. The view from within representation is the perspective that *I am* as a constituted subject of experience.¹¹ Given Deleuze's understanding of the relation between representation and subjectivity, therefore, it is hardly surprising that the limits of representation should present themselves as the limits of what is conceivable or thinkable for a subject, since I remain a constituted subject, according to Deleuze, only insofar as my mind continues to operate within these limits.

This relation between representation and subjectivity is, then, a feature of the nature of our cognition. What is interesting about this, for Deleuze, is that it means that when we cognise, whenever we cognise, we do so within the horizon of an illusion. This is a sort of pathology *within* the normal functioning of cognition, not as a consequence of malfunction. Deleuze praises Kant for having developed this notion of 'internal illusions, interior to reason', which he juxtaposes to the notion (which he takes Descartes to exemplify) that thought is diverted from the course of truth only from without (*DR*, p. 178/p. 136). Thought *qua* thought, according to Descartes, has no 'misadventures' (*DR*, p. 194/p. 149). Rather, 'thought has an affinity with the true', in that 'it formally possesses the true and materially wants the true' (*DR*, p. 172/p. 131). On the 'material' side of this formulation, Deleuze seems

¹¹ Deleuze will point to what he will term a 'larval subject' or 'passive self' that is sub-representational, and can be identified with the minimal integrity of experience implied by the unconscious and strictly speaking *sub-personal* dynamic of habit through which the fully formed subject is constituted (*DR*, pp. 96-108/pp. 70-79). He will identify the thinker with such a sub-personal 'self' (e.g. *DR*, p. 325/p. 253). But the fully constituted ego or subject is distinct from this sub-personal proto-subjectivity; it is a general structure, a structure of any given individuated field of experience insofar as it bears the structure of constituted, representational subjectivity (common sense). This is what Deleuze means when he claims that '*I* is an other' (*DR*, p. 116/p. 86).

to be pointing to a natural inclination to ongoing self-correction, a concern to rectify our body of beliefs, a will not to be deceived (which insofar as it is inseparable from a will to expand the sphere of what is cognisable, and insofar as cognition operates *within* the parameters of transcendental illusion, paradoxically reveals itself as a will to be deceived). On the ‘formal’ side, he is pointing to the structural isomorphism between the objects of the world of representation and its subject, such that the former appear as *in principle* available for cognition by the latter. Re-presented experience is experience insofar as it conforms to the general forms of conceptual thought’s subsumptive hierarchies.

Cognition *can* of course fall into ‘error’ on this view, where error is conceived as a local failure of recognition, the failure of some particular act of recognition to grasp its object veridically. However, such acts of misrecognition leave the general representational structure of cognition intact.¹² But where error is a particular misrecognition within the general economy of recognition, the transcendental illusion of representation is a ‘misadventure’ engendered by the very nature of cognition. The idea of a transcendental illusion associated with conceptual thought’s tendency to treat subsumptive determination as the only kind of determination thus takes up the Kantian idea that cognition is strictly speaking only possible at all against the background – in Christian Kerslake’s (2009) apt phrase – of a ‘mirage’, the ‘projected totality’ of ‘a world fully representable by concepts’ (p. 191 [emphasis removed]).

In this section, I have outlined the way in which thought functions when it functions cognitively, and I have indicated the nature of the transcendental illusion

¹² Deleuze will gloss error as ‘a kind of failure of good sense within the form of a common sense which remains integral and intact’ (*DR*, p. 193/p. 149).

that Deleuze takes to develop out of this mode of functioning. With this background in place, it is now possible to turn to the movement of philosophical thought and how it deviates from this cognitive economy and escapes the illusion that accompanies it. Having done this, I will turn to the question of how the sciences fit into this picture.

2 Philosophy as critique and creation

Deleuze distinguishes *cognising* (or knowing) from *thinking*.¹³ ‘Thinking’ corresponds to what I have been calling problematisation and concept formation, or critique and creation. Philosophy is a species of thinking. I have already outlined conceptual thought’s cognitive use, and the way in which Deleuze takes this to be associated with transcendental illusions which mask the relation between concepts and their genesis in experience. In this section, then, I will look more closely at ‘thinking’, understood as the critical-creative operation of conceptual thought in which the relation between concepts and experience is active and effective. How do thought and concepts function when their relation to experience and the Ideas it incarnated is not disavowed and submerged?

Philosophy, as conceived in Deleuze’s early work, can be seen to have two moments (or movements): *critique* and *creation*. In its critical movement, philosophical thought passes from a confrontation with a singular object back to the Idea that it expresses, tracing its path back through the syntheses that produced it. In

¹³ A gesture presumably of Heideggerian inspiration. In *Nietzsche and Philosophy*, for example, Deleuze links the idea of thinking as ‘the activity of thought’ with ‘its own ways of being inactive’ to Heidegger’s declaration in *What Is Called Thinking?* that ‘we are not yet thinking’ (*NP*, p. 123/p. 108). See also *DR*, p. 188/p. 144. For an account of the role of Deleuze’s reading of *What Is Called Thinking?* across his oeuvre, see Dillet (2013).

its creative moment, philosophical thought returns to the surface with a flurry of concepts. A critique of representation on the one hand, then, aimed at extricating thought from the transcendental illusion of self-sufficient conceptuality engendered by the re-presentational, re-cognitive character of our cognition, and indeed our very selfhood; on the other hand, a creation of concepts, which can simultaneously be seen to involve the cultivation of a new relationship with concepts whereby their *created* and indeed *creative* character is not eschewed or obscured but embraced. If critique and creation in these senses are, for Deleuze, two moments of the same activity of thinking or philosophising, it is insofar as '[t]he conditions of a true critique and a true creation are the same: the destruction of an image of thought which presupposes itself and the genesis of the act of thinking in thought itself' (*DR*, p. 182/p. 139).

2.1 *Critique*

Philosophy's 'project', Deleuze states, is one 'of breaking with *doxa*' (*DR*, p. 175/p. 134). *Doxa*, as Deleuze defines that term, is to be understood in terms of *presupposition*. Deleuze does not, however, have in mind primarily 'objective presuppositions', those 'concepts explicitly presupposed by a given concept', but what he terms 'subjective presuppositions' (*DR*, p. 169/p. 129). By subjective presuppositions – presuppositions 'contained in opinions rather than concepts', and thus 'simply known implicitly without concepts' – Deleuze means to indicate those horizons of expectation or anticipation that underlie our generalisations (*DR*, pp. 169-170/p. 129). That is, he is pointing to the passive syntheses of habit, the 'foundation [*fondation*]' (e.g. *DR*, p. 107/p. 78) upon which the representational structure of our cognition is based. Thus, habit might be thought of as the

presuppositional dynamic underlying the ongoing articulation of *representational* structure: re-presentation is ‘founded’ on pre-supposition insofar as generality is the product of habit.¹⁴ Deleuze makes it clear that it is this dynamic itself with which philosophy needs to break, and not any particular set of intellectual habits or conceptual scheme: ‘No doubt [dogmatic] philosophy refuses every particular *doxa* [...] Nevertheless, it retains the essential aspect of *doxa* – namely the form’ (*DR*, p. 175/p. 134). Thus, if philosophy must ‘break’ with *doxa*, understood as the presuppositional dynamic of representation, it seems that philosophy must break with habit. Philosophy stands opposed to the transition from a distribution of determinations governed by the economy of difference and repetition (expression) to a distribution governed by the economy of generality (subsumption).

This is philosophy’s ‘critical’ moment. Critique as a project of ‘presuppositionlessness’ is not Deleuze’s innovation – indeed, as Alberto Toscano (2010) notes, it is a project ‘with an incontestable Cartesian pedigree’ (p. 8). However, it is Deleuze’s contention that prior attempts at critique – and he has in mind in particular Descartes and Kant (though perhaps also Hegel and Husserl) – have failed insofar as they have effectively carried out a ‘rationalisation’ of *doxa* (both in the sense of a rational justification and in the more psychoanalytic sense), erecting the parameters placed on thought by representational structure into an ‘ideal orthodoxy’ (*DR*, p. 175/p. 134), a set of criteria for ‘good usage’ (*DR*, p. 179/p. 137).

I have indicated that it is part of the transcendental illusion of common sense to conceive conceptual thought as having a ‘natural affinity’ with truth, in and of itself; as materially desiring and formally possessing truth. It is this ‘good nature’ of

¹⁴ Habit ‘*draws* something new from repetition – namely [...] generality’ (*DR*, p. 101/p. 73).

representational subjectivity to which these failed attempts at critique appeal, according to Deleuze. Hence, for the Cartesian, thought is perverted from its natural course by ‘external forces capable of subverting [its] honest character [...] from without’ – and this because ‘we are not *only* thinkers’, but also beings imbued with senses (*DR*, p. 194/p. 149 [my emphasis]). Critique – in this case the method of doubt – is therefore to be understood as returning the thinker to a sort of intellectual ‘state of nature’, in which thought is beholden only to what is *self-evident*, that is, what cannot be doubted. The problem here, from Deleuze’s perspective, should be clear: what is self-evident to a subject, what she finds herself incapable of wilfully doubting, is determined by those sub-reflective expectations that underwrite the very fabric of her subjectivity in the form of a meshwork of intellectual and perceptual habits. But it is this pre-suppositional, sub-conceptual dynamic that founds thought’s tendency to be deceived by the transcendental illusion upon which its cognition relies, and consequently which must be the very object of critique, not its terminus.

Kant’s transcendental idealism moves beyond Descartes’s appeal to a state of intellectual nature by recognising the role of illusion in the formation of cognition itself. Hence, Kant recognises thought’s ‘natural’ exercise as shot through with illusion. Consequently, as Kerslake (2009) has emphasised, for Kant, ‘the critique of reason’ – insofar as it is meant to liberate us from deception by the illusions inevitably and inextricably interwoven with our cognition – ‘involves the founding of an *institution* which articulates our transcendence of the state of nature’ (p. 64; see Deleuze 2008b, p. 23). The Kantian critique, as Deleuze notes, establishes a whole judiciary in the mind: ‘Critique has everything – a tribunal of justices of the peace, a registration room, a register’ (*DR*, p. 179/p. 137). However, what lies behind these juridical metaphors is the notion that, although ‘in its natural *state*, thought confuses

its interests and allows its various domains to encroach upon one another’, engendering illusion, ‘[t]his does not prevent thought from having at its base a good natural *law*’, and that it is this law – which refers us to the ‘natural interests of reason’ – ‘on which Critique bestows its civil sanction’ (*DR*, p. 179/p. 137).¹⁵ Consequently, Kant too ultimately sees critique as referring thought back to the subject and its identity (its synthetic unity), and consequently as validating thought’s constraint within the parameters set for it by totalised representation. In Kant’s case in particular, as Deleuze emphasises in *Nietzsche and Philosophy*, the issue is that the ‘object of [...] critique is justification’: ‘it begins by believing in what it criticises’, and consequently conceives ‘critique as a force which should be brought to bear on all claims to knowledge and truth, but not on knowledge and truth themselves’, likewise ‘on all claims to morality, but not on morality itself’ (*NP*, p. 102/pp. 83-84). Insofar as cognition, and the subjectivity and objectivity from which it is composed, are inseparable from the transcendental illusion of totalised representation, Kant’s commitment to the justification of cognition and its components leads him to a justification of totalised representation as well.

If transcendental empiricism re-envisages critique in a manner that is liberated from these representationalist missteps, it is insofar as the movement of critique is one whereby thought confronts the insufficiency and fragility of

¹⁵ With regard to this resurgence of the ‘naturalness’ of thought in Kant, Deleuze cites two passages from the *Critique of Pure Reason*: (i) ‘The ideas of pure reason can never be dialectical in themselves; rather it is merely their misuse which brings it about that a deceptive illusion arises out of them; for they are given as problems for us by the nature of our reason, and this highest court of appeals for all rights and claims of our speculation cannot possibly contain original deceptions and semblances’ (Kant 1998, p. A669/B697); (ii) ‘in regard to the essential ends of human nature even the highest philosophy cannot advance further than the guidance that nature has also conferred on the most common understanding’ (Kant 1998, p. A831/B859).

representational structure and of the structures of subjective presupposition upon which it is based. Such a dissolution of the apparent self-sufficiency of conceptual thought begins with what Deleuze terms ‘a fundamental *encounter*’ (DR, p. 182/p. 139). In the encounter, ‘[s]omething in the world forces us to think’ (DR, p. 183/p. 139). If ‘the object of the encounter’ forces ‘the genesis of the act of thinking in thought itself [*l’acte de penser dans la pensée même*]’, it is insofar as it exceeds the limits of representation (DR, p. 182/p. 139). As such, it cannot be *recognised*: ‘it can only be sensed’ (DR, p. 182/p. 139). This is the stubbornness of the unique object which blocks the concept, which I discussed in chapter 1. ‘In recognition’, recall, ‘the sensible is not at all that which can only be sensed, but that which bears directly upon the senses in an object which can be recalled, imagined or conceived’, in other words, ‘which may not only be experienced other than by sense, but may itself be attained by other faculties’ (DR, p. 182/p. 139). This is the triangulation of the faculties on a supposed same object which characterises the objective aspect of common sense, and correlatively recognition as the subjective act corresponding to this common sense. In the encounter, on the other hand, what the mind confronts is something ‘in a certain sense [...] imperceptible [*insensible*]’, specifically ‘from the point of view of recognition’: namely an absolutely singular individual (DR, p. 182/p. 140). This, as I have shown in chapter 1, is the source of the phenomenon of ‘bare repetition’.

Thought’s critical movement does not stop at blockage by bare repetition, however. Thought is provoked by the stubbornness of singular existents to seek ‘the reason for the blockage of concepts’ (DR, p. 37/p. 24), and this leads it to plumb the sub-conceptual depths of experiential synthesis out of which the object emerges, eventually arriving at the Idea the object expresses. It is a movement away from the

constituted structures of representation and towards the transcendental processes and differential structures that determine them. Just as for Kant the taxonomy of forms of judgement would function as a ‘clue to the discovery of all pure concepts of the understanding’,¹⁶ that is, to the *conceptual* structure of the transcendental, the singular object of the encounter – insofar it ‘functions as a sign of the transcendental, announcing an internal difference within intuition whose structure and essence must be unfolded’ (Bryant 2009, p. 13) – might be thought of as playing an analogous role as a ‘clue’ to the structure of the transcendental in Deleuze’s own transcendental philosophy.

In this manner, Deleuze claims that thought’s *critical* movement begins with the incapacity of the mind to (re)cognise a sensibly discernible unique object and then descends towards the Idea this object expresses, the ‘internal difference’ that defines the being of the object in its individuality. The critical movement of thought is thus a movement from concepts to *problems*. The encounter “perplexes” [the mind] – [...] forces it to pose a problem: as though the object of encounter, the sign, were the bearer of a problem – as though it were a problem’ (*DR*, p. 182/p. 140). The problems in question cannot simply be conflated with the incapacity of conceptual thought to grasp individuals; this would rob the notion of a *movement* of thought of its meaning. Rather, it is ‘Ideas’, Deleuze tells us, that ‘are essentially “problematic”’ – indeed, ‘problems are Ideas’ (*DR*, p. 218/p. 168). Hence, the problem towards which thought is driven by the ‘stubbornness’ of the individual is not ‘a subjective determination marking a moment of insufficiency in knowledge’ (*DR*, p. 89/p. 63),

¹⁶ See the first chapter of the *Analytic of Concepts* (Kant 1998, p. A66/B91 ff.).

but an ideal structure with ‘an objective value’ (*DR*, p. 219/p. 169.).¹⁷ The problem that provokes and orientates an act of thinking is not the conceptual blockage as obstacle, but the Idea as the *reason* of this obstacle.

The critical movement of thought manifest what Deleuze calls, appropriating a Freudian term, a *death instinct* (see *DR*, pp. 26-30/pp. 16-19, pp. 145-53/pp. 109-116, p. 333/p. 259). There is ‘an experience of death’ (*DR*, p. 150/p. 114) associated with the mind’s confrontation with the spatio-temporal dynamisms that determine the world of representation, and it is this experience that is undergone by thought when the encounter forces it to confront the illusory character of the fixed world of representation it takes itself to inhabit in its cognitive mode. In other words, the critical movement of thought is a movement of ‘de-differentiation’, of the decomposition of those generalities in accordance with which representation orders experience. What Deleuze means to indicate by associating this process with death is that, given the way in which our subjectivity – our status as fully actualised, constituted and organised minds – is determined by the economy of generality, the critical decomposition of generalities necessarily involves a kind of ‘desubjectivation’ or loss of identity. ‘[E]very Idea turns us into larvae’, Deleuze states, ‘having put aside the identity of the I along with the resemblance of the self’ (*DR*, p. 283/p. 219); our subjectivity is reduced to an embryonic state in which the fixity of its general determinations (as the subject of common sense) dissolves and the mind can be reformed in new ways, outside the parameters of common sense.

¹⁷ Deleuze will coin the term ‘objectivities [*objectités*]’ (*DR*, p. 206/p. 159) in order to characterise the objectivity of Ideas. His intent seems to be to characterise them as objective, in the sense that they are not subjective, whilst noting that they are not ‘objects’ in the same manner as the actualities that express them.

2.2 *Creation*

The movement of thought is not only destructive, however. ‘To think is to create’ (*DR*, p. 192/p. 147). Thus, philosophy, as a mode of ‘thinking’, is a mode of creation; it is creative. In particular, ‘the philosopher creates concepts’ – ‘the medium [*élément*] in philosophy is the concept’ (*DI*, p. 196/p. 141). Indeed, ‘[a] philosophy’s power is measured by the concepts it creates, or whose meaning it alters, concepts that impose a new set of divisions on things and actions’ (*SPE*, p. 299/p. 321). Philosophy is thus identified by Deleuze as *concept formation*.¹⁸ How should the relation between this creative moment and philosophy’s critical moment be understood?

Philosophy, as just noted, is, for Deleuze, a mode of conceptual thought. However, the way in which conceptuality functions in philosophical thought cannot be the same as in representation. The critical movement of philosophical thought is triggered by representational conceptuality’s confrontation with its own incapacity to (re)cognise an individual. And yet, ‘philosophy’s ideal’ (*DI*, p. 44/p. 33), according to Deleuze, is to construct a concept tailor-made for its singular object, a bespoke concept that does not simply place this object under a general type alongside other objects that it resembles, but which expresses this individual object’s being, the reason for its being ‘*this* object rather than another of the same kind’ (*DI*, p. 50/p. 36). Philosophical thought, in its creative movement (to quote a phrase from Bergson

¹⁸ This notion of philosophy as the creation of concepts will, of course, be a persistent one in Deleuze’s work, finding its final and perhaps most explicit formulation in 1991 in *What Is Philosophy?*. This is not to say, however, that the precise sense of this notion similarly persists, and one should be cautious about reading the metaphilosophy of *Difference and Repetition* through that of the ’91 text.

that Deleuze also cites) ‘cuts for the object a concept appropriate to the object alone, a concept one can barely say is still a concept, since it applies only to that one thing’ (Bergson 1946, p. 206). Concepts can only approach this degree of specificity – and it is unclear whether it is ever really achieved, or rather remains, for Deleuze, an ideal or a tendency¹⁹ – insofar as they are dramatised by spatio-temporal dynamisms and thereby express Ideas. This critical movement extricates philosophical conceptuality from its correlation with the world of representation, allowing the creative power of concepts as expressions of the transcendental production of a world to shine through. Concepts become philosophical when, rather than simply providing a window onto a world of objects, they begin also ‘to allow singularities to come out from under individuated realities, to surface and speak’ (de Beistegui 2008, p. 52) – in other words, when they express rather than obscure their own relation to real experience and transcendental genesis. In the wake of critique, philosophy can be understood as a mode of conceptual thought disabused of deception by transcendental illusion. The difference that critique makes can be understood as a re-establishment of the essential relation between these concepts and the Ideas and spatio-temporal dynamisms that they express.

This has two consequences regarding the status attributed to these concepts: Firstly, they do not primarily refer to a world of representation, but do so only insofar as they first *express* a world of difference. Thus, these concepts can be seen as drawing their meaning from the problems to which they provide singular and partial solutions. Secondly, the creative character of these concepts becomes apparent, that is, that they make a substantive contribution to the *way* in which the

¹⁹ ‘This is why the search for actual concepts can be infinite, there is always an excess of virtual Ideas animating them’ (*DI*, p. 154/p. 110).

world appears for us (this character of ‘aspectual’ presentation is the *sense* of concepts, over and above their *reference*). In a sense, then, what becomes apparent to us through critique is the way in which an array of concepts serves to compose a singular perspective on the objectively problematic reality by which we are confronted. We are no longer misled by the structure of our conceptuality into regarding these concepts as a window onto a conceptually structured world, but rather come to appreciate the power of sub-conceptual syntheses to creatively construct such a world, and to produce the concepts that structure it. Furthermore, we are forced to confront the *partial* and *transient* character of any such construction: the concepts thought creates in its attempt to express that which it encounters provide only one possible actualisation of the virtual; and this construction is always open to dissolution in the face of new encounters.

None of this is meant as a concession to the excesses of what Levi Bryant (2009) has referred to as ‘a sort of dogmatic enthusiasm or *Schwärmerei*’ (p. 12) to which Deleuze’s philosophy might seem to play host. That is to say, this notion of creative conceptuality freed from transcendental illusion should not be understood as a renewed, radicalised transcendental subjectivism, shorn of even the constraints of a regulative objectivity. The creation of concepts is beholden to the experience of an encounter through which the mind confronts its obscure unconscious of differential Ideas, and Deleuze takes this to provide an ‘objective’ instance (in the sense of the ‘objectivity’ of problems) conditioning and constraining (at the same time as it facilitates) thought’s creativity. Indeed, insofar as there is a whole process of sub-representational selection, through the spatio-temporal syntheses, underlying concept formation, it seems that a great deal of the *creativity* of the process is carried out below the level of the conscious, concept-manipulating, active subject. Thus, the

liberation from transcendental illusion that critique permits, considered from the perspective of the conscious subject engaging actively in philosophy, must primarily be a question of *attitude* towards concepts, a question of cultivating a disillusioned attitude which views concepts not as representations but as expressions of the sub-conceptual formation of a way of seeing and thinking. It is this, I would suggest, that Deleuze has in mind in *Nietzsche and Philosophy* when he states that '[t]he point of critique is not justification but a different way of feeling: another sensibility' (*NP*, p. 108/p. 88).

To extricate concept formation from the 'image' imposed on it by its correlation with the objectivity of the world of representation, I would argue, is effectively to extricate it from *cognition*. The role of the concept is not to represent – that is, *re-present*, present again – a pre-existing world; concepts are rather the farthest end of a process of *constructing* an actual world as a partial expression of the virtual space of Ideas.

With a certain inevitability, however, these concepts come to be acquisitioned in the interests of representation. The *sense* of concepts is determined by the problematic context in which they are enveloped by thought's encounter with the stubbornness of an individual. The '*meaning [sens]*' of concepts – and here Deleuze means to invoke the Fregean distinction between meaning or sense (*Sinn*) and reference (*Bedeutung*) – 'is located in the problem itself' (*DR*, p. 204/p. 157 [translation modified; my emphasis]). It is from their status as 'solutions' to a problem (from their dramatisation) that concepts derive their meaning or sense. If concepts' relation to problems is obscured, as it is by transcendental illusion, they are robbed of the horizon of virtuality from which they draw their 'sense' and take on a purely 'designatory' status, picking out or referring (through acts of

recognition) to actual objects in the world of representation, whilst disavowing their *expressive* character (*DR*, p. 211/p. 163). Conceptual thought, when set in motion by a problematic confrontation which provokes it to explore the Ideas that singular things express, creates concepts the meaning of which is determined by this problematic context. But once these new concepts have been constructed, they remain available to conceptual thought, regardless of whether it continues to operate within the horizon of this problem or not. A transition is thus possible, whereby concepts cease to be deployed within the problematic horizon from which they originally drew their sense and are rather redeployed within an economy that distributes determinations quite differently, namely that of representation and its active syntheses. One might designate this drift the transition from ‘created’ (or ‘new’) to ‘established’ concepts.

In relation to the established and the new, Deleuze makes the following remark (which, although it does not pertain directly to concepts but rather to values, can legitimately be extended to concepts): the ‘distinction between the creation of new values and the recognition of established values should not be understood in a historically relative manner, as though the established values were new in their time and the new values simply needed time to become established’ (*DR*, p. 177/p. 136). Rather, ‘the difference is one of kind, like the difference between the conservative order of representation and a creative disorder or inspired chaos’ (*DR*, p. 77/p. 54). ‘[T]he new – in other words, difference – calls forth forces in thought which are not the forces of recognition, today or tomorrow, but the powers of a completely other model, from an unrecognised and unrecognisable *terra incognita*’ (*DR*, p. 177/p. 136). The point of these remarks, then, is that the distinction between created and established concepts, in Deleuze’s sense, is not primarily a matter of how recently

these concepts have been constructed. It is a difference in what, following Deleuze, I have called the *economy* of determination in which these concepts are deployed. Created concepts aim to designate individuals in their internal difference, and are able to do so only insofar as they express problems; whereas established concepts subsume particulars under generalities, and have become separated from problems. Concepts, once created, are able to come loose of their moorings in a problematic context, in which they are specific solutions determined by the conditions of the problems, and be redeployed as general types subsuming particular tokens. Philosophy is an ongoing battle to wrestle concepts free of this drift whereby they become established and thereby lose their problematic sense and vitality.

3 Thinking and knowing in the sciences

In the previous part, I have argued that Deleuze conceives philosophy as the activity of conceptual thought liberated from deception by the transcendental illusion that obfuscates the creativity of thought and the relation between concepts and sub-conceptual experience. The question now is: where should science be situated in relation to the two regimes of conceptuality discussed above? Philosophy, according to Deleuze, is only worthy of its name when it operates critically-creatively; representational ‘philosophy’ is no philosophy at all. But what of science? While the answer here is not straightforward, since there is textual evidence indicating that Deleuze takes scientific activity to be traversed by both representational and critical-creative tendencies, ultimately I will suggest that there are ways in which the sciences depend upon representation which set them apart from philosophy’s constitutive break with representation. The reasons for this difference in attitude or orientation further help to clarify the essential divergence between scientific and

philosophical thinking: namely, whilst the scientific enterprise is *epistemic* and *pragmatic* in its aims, philosophy, for Deleuze, is at base an *ethical* exercise – if in a quite idiosyncratic sense.

For a thinker so engaged with specific progressions of conceptual development in the history of the sciences, what is notable by its absence from Deleuze's mature statements of his early thought is a properly developed *philosophy of science*, in the sense of a reflection on the philosophical consequences and proper interpretation of the nature of science as a body of knowledge, a distinctive cognitive activity or a social practice. Despite Manuel DeLanda's admirable attempts to reconstruct a plausibly Deleuzian position on such issues as the ontological status of the modal claims involved in causal explanation, or the epistemic status of models in science, attributing such positions to Deleuze himself seems exegetically farfetched. Deleuze's early texts offer us little by way of a consolidated account of the nature of scientific endeavour.

Therefore, in order to glean something like a view of the nature and status of science from Deleuze's writing, it is necessary to follow the few clues his texts do present and work from the way in which these remarks fit into the rest of Deleuze's philosophy in order to construct a plausibly (early) 'Deleuzian' account of science. Considering *Difference and Repetition*, then, it can be seen that although direct references to science as such or in general are few, Deleuze does comment on certain things that can plausibly be taken to be key features of science in general; in particular, he will comment on (i) *laws of nature*, (ii) *scientific experiment* and (iii) *prediction*.

That Deleuze's comments on these three phenomena have some bearing on his view of science seems fairly uncontroversial. The sciences would seem to be

concerned with making and testing predictions, both as an important epistemic capacity of which they are a development and as an integral part of the process of attempting to empirically confirm scientific theorising. Experiment provides an arena in which predictions can play a confirmatory role in relation to theories. On both of these points, there is room for additional nuance, or for some critical scrutiny of these commonplaces regarding the sciences. Apropos prediction, developments in both quantum mechanics and nonlinear thermodynamics have forced scientists and philosophers to question the limits (not only *de facto* but *de jure*) of prediction, that is, the limits of the predictability of physical systems (and *a fortiori* systems at other ‘scales’ of reality, since physical systems having provided for modern science the paradigm of predictability).²⁰ Apropos experimentation, prompted by theoretical physics’ ongoing search for a viable theory of quantum gravity *in spite of the de facto* inaccessibility to experiment of the phenomena under investigation, some philosophers of science are beginning to raise questions about the centrality of experiment to the confirmation of scientific theory.²¹ However, while these sorts of cases present reasons to be cautious in giving to either experiment or prediction an overly *essential* role in the *definition* of science (assuming, for the sake of argument, that anything like a definition of science in general is possible), it would seem too strong a conclusion to try to divorce the sciences from these things altogether. That sciences are still expected to be able to predict the behaviour of systems and phenomena about which they claim knowledge – even if only in the sense of providing a set of probabilities for various possible outcomes – seems a reasonably

²⁰ See Prigogine (1997).

²¹ See Dawid (2013).

uncontroversial statement;²² while the integral role of experiment, as scientific knowledge's tie to 'observation' (however distant that operation might be from a simple act of looking), likewise seems hard to discard altogether. (One might suspect that even those physicists working in the most purely theoretical areas of the discipline would not wish to see their work as *a priori* in principle, but rather as working at some distance from the sorts of phenomena we have *as yet* figured out ways to subject to experimental conditions).

The role of laws of nature in scientific knowledge is by no means a philosophically uncontroversial issue. There is controversy first of all regarding what laws of nature are,²³ and secondly about whether the sciences are indeed best characterised as seeking to discover natural laws at all.²⁴ However, even in the light

²² A relatively recent example comes from the social sciences: when the financial crisis began in 2008, the incapacity of the economists of the US Federal Reserve to *predict* the banking collapse that triggered the crisis has indeed led to renewed hand-wringing about the purported 'scientific' status of economics. See, for example, the contributions to the conference on 'The Economic Crisis and Its Implications for the Science of Economics' held at the Perimeter Institute for Theoretical Physics in Waterloo, Ontario in Canada on 1st May 2009 (videos available at <<http://pirsa.org/C09006>> [accessed 25 August 2015]). Thus, that there is some strong connection between the capacity to make predictions and the scientific character of a body of knowledge seems to be an appealing thesis, even in the social sciences, where the complexity of the systems involved has long rendered strict predictability a fantasy.

²³ What is the *scope* of the claims codified in these laws: do they range over only *observed* cases, only *actual* cases, or over all *possible* cases? And if the latter, what kind of possibility is involved – physical, metaphysical...?

²⁴ DeLanda (2002, chap. 5) emphasises the work of philosophers of science such as Nancy Cartwright, who has argued for the strict falsity of laws of nature. DeLanda's reasons for doing so relate to his attempt to disentangle the sciences from 'representation' so as to demonstrate an affinity between the conclusions of Deleuze's philosophy and those of the scientific study of nonlinear systems. But DeLanda overstates the case in claiming that Cartwright and similarly inclined philosophers of science represent a new orthodoxy.

of these concerns, it is possible to make the following observation: that insofar as we acknowledge that there are laws of nature, that is, that nature behaves in a law-like manner, it would seem to be the sciences that are charged with providing knowledge of what these laws are. So, although there is room to dispute whether the sciences are concerned to discover laws of nature, *if there are* laws of nature, then it is the sciences that are tasked with discovering them. Hence, I think it is justifiable to read Deleuze's discussion of laws of nature as providing a characterisation of scientific knowledge – at least insofar as Deleuze can be taken to embrace the thesis that *empirical reality* (the objects of *actual* experience, the world of representation) behaves in a law-like manner.

It seems, then, that Deleuze does in fact provide the building blocks of a description of scientific knowledge: scientific knowledge is knowledge of laws of nature (which is not to say that it is *exclusively* knowledge of laws of nature – it may involve other knowledge); obtained through a process of confirmation involving submitting experience to experimental conditions; the process of confirmation involves the making and testing of predictions, in addition to which the scientific knowledge obtained permits us to make predictions about the behaviour of the world around us. This is a philosophically minimal characterisation of scientific knowledge in general that can be reconstructed from Deleuze's pronouncements in *Difference and Repetition* – this characterisation, I submit, is already enough to suggest that the sciences are, for Deleuze, intimately bound up with the representational economy of cognition.

Given the minimal characterisation of scientific knowledge provided above, it might seem that Deleuze takes science to conform to the representational structure of cognition. The crucial point here, with regard to all the various aspects of

scientific knowledge we have highlighted, is that scientific knowledge, like all knowledge, consists of *generalisations*, that is, claims involving the subsumption of something under a generality.

Consider first scientific experiment, as this is perhaps Deleuze's most straightforward discussion. Scientific experiment involves the establishment of a controlled space in the context of which the behaviour of the entities involved can be understood in terms of a small number of interacting determinations: 'experimentation constitutes relatively closed environments in which phenomena are defined in terms of a small number of chosen factors' (*DR*, p. 9/p. 3). This is a situation in which *measurement* is possible. 'In these conditions', Deleuze continues, 'phenomena necessarily appear as *equal* to a certain quantitative relation between the chosen factors' (*DR*, p. 10/p. 3). These constraints proper to the experimental situation are important for two reasons: (i) in order to ensure that the experiment allows for a rigorously quantifiable measurement of phenomena and for a similarly quantified measure of the variations in their behaviour resulting from controlled variations in the experimental conditions; (ii) in order to ensure that the experiment is *repeatable*, in the sense that its conditions can be replicated.²⁵ Measurable and repeatable: both of these factors are central to the epistemic role played by experiment, which can be understood as placing constraints on observation such that it can be seen to yield systematic and thus cognitively contentful results.

Deleuze understands this constraint in terms of an imposition on experience of the condition required for a certain register of representational determination: 'Natural phenomena are produced in a free state, where any inference is possible

²⁵ This is what Deleuze refers to as allowing for 'the identification of a phenomenon under the particular conditions of the experiment' (*DR*, p. 10/p. 3).

among the vast cycles of resemblance [...] Experimentation is [...] a matter of substituting one order of generality for another: an order of equality for an order of resemblance' (*DR*, p. 10/p. 3). Against the background of perception's apprehension of innumerable similarities between particulars, the imposition of experimental conditions allows us to make the kind of inferences necessary to move from this perceptual apprehension of similarities to scientific knowledge, that is, to infer that 'in similar situations one will always be able to select and retain the same factors' (*DR*, p. 10/p. 3). This 'hypothetical repetition', Deleuze states, 'represent[s] the being-equal of the phenomena', that is, the basis of its subjection to a law of nature (*DR*, p. 10/p. 3).

What marks experiment out as complicit with representation, for Deleuze, is thus that it renders phenomena comprehensible by submitting them to generalities, and thereby renders them substitutable for one another. When a scientist performs an experiment, she carries out a procedure at a particular time and place; it is a unique event. The phenomena under investigation in this specific experiment are likewise unique events: particle collisions,²⁶ chemical reactions, physiological reactions, answers provided by psychological test subjects. But the understanding that the scientist gains of these phenomena from the experiment pertains entirely to the *type* of phenomenon in question: she learns about the behaviour of this *type* of chemical interaction, of this *type* of physiological or psychological response. If these and future individual instances can be explained or comprehended on the basis of experimentally tested theorising, therefore, it is only insofar as they are particular

²⁶ This claim is disputable in the case of particle collisions, since the applicability of the PII to subatomic particles is a live debate in the philosophy of quantum theory.

cases subsumable under generalities. The particular as such, the individual in its individuality, remains undetermined.

Already considering experiment the way in which scientific knowledge trades in generalities is apparent. This is also apparent from a consideration of laws of nature. Laws of nature can be understood as general claims about the behaviour of types of entities. More specifically, laws of nature make claims about the correlation between one type of phenomena and another type.

It thus seems clear that Deleuze is right to associate laws with generality.²⁷ '[L]aw' – and here Deleuze means to characterise both laws of nature and the juridical framework of a social group – 'determines only the resemblance of the subjects ruled by it, along with their equivalence to terms which it designates' (*DR*, p. 8/p. 2). Laws of nature, *qua* general claims about types of things, are concerned with the persistent behaviour of groups; unique events in the lives of unique individuals are simply not within the purview of laws. Insofar, then, as science is concerned to discover the nomological structure of nature, it does indeed seem that individuals as such, in their uniqueness, fall outside its remit. The individuality of the individual is not that aspect of it which stands to be of explanatory value.

Perhaps the most interesting case is prediction. What is interesting about it is how directly Deleuze takes the act of prediction to reflect the presuppositional dynamic of our cognition, such that scientific knowledge's predictive character seems to associate it quite closely with that structure. That is no doubt why those commentators most interested in stressing a continuity between Deleuzian philosophy and the sciences have placed so much emphasis on the arguments of Ilya

²⁷ '[G]enerality belongs to the order of laws' (*DR*, p. 8/p. 2).

Prigogine *et al.* regarding the significance of certain twentieth-century developments in the physical sciences, arguments to the effect that the recognition of the prevalence in nature of *nonlinear* systems serves to disrupt the ‘Laplacean’ ideal of a completed scientific knowledge as a tool for perfect prediction. While the nature and role of prediction in science is certainly transformed by these developments, it seems to me ultimately implausible to suggest that prediction does not continue to play a crucial role in the confirmation of scientific claims and in the ongoing demonstration of their empirical adequacy.

The conclusion towards which these points seem to be leading is that science, for the early Deleuze, operates within the parameters of the representation. The picture is more complex, however. In the course of *Difference and Repetition*, Deleuze points out certain currents of scientific thought that seem to be consonant with the kind of ‘thinking’ that occurs in philosophy, or something nearer to it than to recognition.²⁸ Let us consider a few places where Deleuze makes this kind of claim, and try to determine what sort of status he takes such episodes of critical-creative thinking in scientific thought to have.

One example comes from Deleuze’s discussion of the debate between the early nineteenth-century French zoologists Georges Cuvier and Étienne Geoffroy Saint-Hilaire. It is not necessary to recount the details of Cuvier and Geoffroy Saint-Hilaire’s dispute in the field of comparative anatomy and its impact on the subsequent development of evolutionist ideas (see Rehbock 1990). All that needs to

²⁸ I am concerned here with Deleuze’s discussions of episodes in the history of scientific thought in which it seems that Deleuze takes ‘thinking’ to have occurred. This should be distinguished from the topic of the next chapter, which considers what is going on when Deleuze *appropriates* scientific concepts as tools in the development of his own project.

be noted here is that Deleuze praises Geoffroy Saint-Hilaire's transcendental anatomy, with its attempt to explain structural 'homologies' across anatomical variation between animal species in terms of variations on an ideal archetype of the structure of the organism, opposing it favourably to Cuvier's functionalist explanation. Deleuze speaks of Geoffroy Saint-Hilaire's 'genius' in having constructed 'a structuralism in biology' that prefigures, he suggests, the view of biological diversity presented by modern genetics (*DR*, p. 240/p. 185). Transcendental anatomy and genetics represent, for Deleuze, a line of thought in the history of the life sciences that allow us to conceive 'the organism as [a] biological Idea': 'An organism is a set of real [i.e. actual] terms and relations (dimension, position, number) which actualises on its own account, to this or that degree, relations between differential elements' which compose the virtual Idea of the organism, or the "essence" which is the Animal in itself' (*DR*, p. 239/p. 185). Here, it is clear that Deleuze takes Geoffroy Saint-Hilaire to have achieved a grasp of problems or Ideas, as a consequence of which his thought cannot be regarded as operating within a purely conceptual (i.e. representational) sphere.

A number of examples can also be drawn from the history of mathematics. In particular, Deleuze highlights the search – in various branches of mathematics, but particularly in group theory – for a way to show that the "solvability" [of a mathematical problem] [...] must be determined by the conditions of the problem, engendered in and by the problem along with the real solutions' (*DR*, p. 210/p. 162). In this connection, Deleuze notes the work of the nineteenth-century mathematicians Niels Henrik Abel and Évariste Galois on the solvability of polynomial equations.²⁹

²⁹ For a brief but lucid explanation of Abel's and Galois' work, set in the context of Deleuze's references to it in *Difference and Repetition*, see Duffy (2013, pp. 84-88). Deleuze notes the influence

Abel ‘provided the first accepted proof of the insolubility of the quintic, or fifth degree polynomial equations’, that is, polynomial equations containing variables raised to the power of five (Duffy 2013, p. 84). ‘What Abel’s proof shows is that even though a solution can be provided in certain special cases, a solution to a special case is not generalizable, that is, a general formula for a solution with the same form as the solution for special cases does not exist’ (Duffy 2013, p. 85). Rather, in order to determine ‘whether a given equation is solvable’, it is necessary to ‘determine the conditions of the problem’, such that ‘solvability must follow from the form of the problem’ (*DR*, p. 233/p. 180) (where the form of the problem is determined by ‘the specific permutations of the roots of the polynomial equation’ (Duffy 2013, p. 85)). Galois’ contribution is to have formalised this notion of the conditions or form of the problem in group-theoretical terms, such that ‘the question of the solvability of any polynomial equation was related to the structure of a group of permutations of the roots of that equation’ (Duffy 2013, p. 86). Setting aside the technical details here, what is significant about these moments in the history of mathematics for Deleuze, as with the case of Geoffroy Saint-Hilaire, is that they indicate occasions on which scientific thought (categorising mathematics amongst the sciences, for present purposes) grasps problems as such, and deploy concepts in an attempt to express problems and in direct correlation with the determination of problems.

on his discussion of that of Jules Vuillemin (see Vuillemin 1962, chaps 3 and 4). It seems to be from Vuillemin that Deleuze receives the idea that ‘[w]ithout this reversal [in the dependency relation between problems and their solvability], the famous Copernican Revolution [i.e. Kant’s] amounts to nothing’ (*DR*, p. 210/p. 162); see Vuillemin (1962, esp. §§25 and 60). See n. 69 to chapter 1 above.

It would also be possible to mention a couple of examples from the social science, namely the economics and sociology of Karl Marx (at least, as read by Althusser and his collaborators on the *Reading Capital* project) and the sociology of Gabriel Tarde, which Deleuze seems to take to be cases of the discovery of ‘social Ideas’ (e.g. *DR*, p. 104 n. 1/p. 313 n. 3, pp. 240-241/p. 186). However, here the waters are muddied, particularly in the case of Tarde, by Deleuze’s identification of these figures as philosophers – a move made possible by the instability of the boundary between philosophy and social science at the time of these nineteenth-century thinkers.

What status should we attribute to these examples, and what do they indicate regarding the way in which Deleuze situates science in general in relation to the distinction between representational thought and critical-creative thought?

One first point to note is that there is a question as to whether there is a difference between mathematics and the empirical sciences (both natural and social) that is salient in the context of this chapter’s discussion. Mathematics seems to have a particularly prominent status in Deleuze’s presentation of Ideas or problems. Furthermore, if it is the sciences’ attachment – insofar as they are part of an epistemic and pragmatic enterprise – to empirical, objectively determinate entities and types that entangles them in representation, then mathematics, with its attachment only to ‘ideal’ objects, may fall into a different category. Consequently, I will set mathematics aside for the moment (returning to it in chapter 4), and focus on the empirical sciences.

It seems, then, that Deleuze is open to the idea that scientific thought is not necessarily cut off from problematic Ideas. Furthermore, it does not seem plausible to deny that science engages in the creation of concepts (given that, at this early

stage of his work, Deleuze has not formulated a technical idea of concepts as specifically philosophical, as he and Guattari will in *What Is Philosophy?*.³⁰ To deny this would be a peculiar move, given the vast number of new concepts with which theoretical developments in the sciences have provided us. This association between science and conceptual creativity is perhaps not all that surprising, given the tradition of history and philosophy of science that was dominant in France during the period in question and the sorts of assumptions about science associated with this tradition. Philosophy of science in France at this time is dominated by Bachelardian thinking, which places a heavy emphasis on the way in which the sciences' experimental engagement with external reality is mediated by concepts, 'problematics' and theories. In particular, it is interesting to note that one of the core problems faced by Bachelardian philosophy of science is an attempt to balance a rejection of a naïve or so-called '*chosiste*' realism with the maintenance of a concept of scientific objectivity not simply reducible to social norms and consensus within the scientific community.³¹ This problem persists in Canguilhem's post-Bachelardian history of philosophy, and the problem is even aggravated by Canguilhem's scepticism towards the stability of Bachelard's distinction between the scientific and the non-scientific (despite Canguilhem's more explicit focus on the origins of norms) (Gutting 1989, p. 42, pp. 50-52). In this respect, this tradition places a heavy emphasis on the sorts of considerations that have led to a rejection of scientific

³⁰ On the development of Deleuze's separation of the products of science from 'concepts', see Smith (2012b, pp. 386-387 n. 20).

³¹ On the difficulties for Bachelard and Canguilhem caused by this tension, see Gutting (1989, chap. 1, esp. pp. 25-32 and pp. 50-52) and Tiles (1984, pp. 39-65). For an attempt to defend the claim that Bachelardian epistemology has a satisfactory response to these difficulties, see Lecourt (1975, pp. 7-19).

realism, objectivity and progress in the work of Anglophone philosophers such as Kuhn and Feyerabend, at the same time as there is a desire to preserve these notions and reject the kind of relativism they embrace.

Consequently, it would have been quite unorthodox for Deleuze to embrace the sort of strong scientific realism whereby scientific knowledge is a discovery of pre-determined 'facts', as opposed to acknowledging the role of problems and conceptual creativity in constructing the objects of science. Nevertheless, it is important to emphasise that even from this Bachelardian perspective, which acknowledges the complex status of scientific cognition and its relation to its object, there are clear differences between the sort of creativity and the sort of break with accepted intellectual norms that Deleuze associates with philosophy and the way in which Bachelard takes these aspects of thought to function in the sciences.

For one thing, looking more closely at the Bachelardian idea of a problematic, which has distinctly Deleuzian resonances (and which Deleuze refers to approvingly at one point in *Difference and Repetition*), it becomes apparent that it in fact resembles far more closely Deleuze's description of experimental conditions and prediction as constraining the sensible field within a representational order than it does Deleuze's notion of problems as virtual differential structures.

What is a problematic for Bachelard? It pertains, he states, to 'acquisition' of scientific knowledge (as opposed to its *post facto* justification) (Bachelard 1966, p. 50; 2012, p. 27). If scientific knowledge is to be produced from the crucible of the experimental encounter with reality, then the object the experiment allows us to 'observe' (bearing in mind the very broad use of the term 'observation' in the experimental context) cannot simply manifest itself as a brute presence, as 'the immediacy of a non-self opposed to a self', but must be 'presented in the light of its

definition, after the self is already engaged in a particular kind of *thought*' (Bachelard 1966, pp. 50-51; 2012, p. 27). That is to say, the experimental setting is one in which the world is able to yield intelligible patterns because it is a setting in which what is able to present itself is subjected to a certain regime of intelligibility. What Bachelard is pointing to here is the oft-noted requirement that some selection of relevant factors be made if the observation of the world is to produce anything so systematic as scientific knowledge, and that furthermore in the context of science it is *existing scientific knowledge* (whether this be understood as theoretical knowledge or the 'know-how' of the experimenter) that will inevitably play the primary role in this selection – along with hypotheses and projected models pertaining to the results the experiment has been designed to obtain. It is this array of hermeneutic baggage guiding the sciences' extraction of information from observable reality that Bachelard seeks to adequately characterise in terms of a 'problematic', which he describes as 'an *approach structure* [*une structure-approche*]', 'a preliminary protocol of laws' organising and rationalising phenomena so that they are capable of providing thought with something that is actually *of interest* to it (an intelligible pattern) (Bachelard 1966, pp. 50-51; 2012, pp. 27-28).

Secondly, the Bachelardian tradition's conception of the way in which the scientific mind's relation to reality is mediated by problematics and conceptual constructions is essentially tied to social norms and the dynamics of critique within scientific communities. Socially embedded norms place significant constraints on concept creation in a way that seems to pull against Deleuze's picture of the break with 'doxa'. In particular, Deleuze emphasises a connection between community or sociality and representation, referring, for example, to 'the reflected representation of a "for-us" in the active syntheses' (*DR*, p. 98/p. 71). Creativity, for Deleuze, seems

to involve rather a withdrawal from sociality, and even from subjectivity, rather than anything socially mediated.

Ultimately, even for a tradition of philosophy of science committed to a critique of positivism and overly simplistic forms of realism, there remains a sense that it would undermine the scientific enterprise should we conclude that it is not pursuing objective knowledge of a mind-independent world.

Science cannot be conflated with its most revolutionary moments. There is a division of intellectual labour in science (specialisation), and an attempt at piecemeal, cumulative research. Researchers try to build on the work of others, taking certain results and, crucially, certain concepts and ways of posing problems, as given. Thus, there are certain norms pertaining to clarity of communication in the sciences which seem to be in tension with the anti-communicative character of concept creation as Deleuze conceives it. To subject concepts to the requirements of intersubjectivity, it seems, is, for Deleuze, already to begin to let them drift into the realm of the established. Each new work of scientific research cannot, however, strive to reframe the whole field in which it works. It may be helpful to adopt a Kuhnian lexicon in expressing this point: while the best science is perhaps not ‘normal’ science, normal science has, nonetheless, scientific value; nor, furthermore, can science function in a purely ‘pre-paradigmatic’ state indefinitely. Whilst we may question the Kuhnian notion that ‘normality’ and its maintenance is the ideal of any given science or would-be science, it nevertheless seems that the sort of cumulative epistemic progress at which science aims is not possible without a certain amount of consensus-building and intra-paradigmatic activity.

Recognition takes concepts as givens and deploys them in the cognition of a world of given particulars. Problems, likewise, are given – given negatively as

deficiencies in our capacity to cognise something. Science, however, constructs concept, and operates within an appreciation of the way in which the view of reality reached is in important part determined by a ‘problematic’ (which feeds into experiment design and ‘observation’). However, there is a minimal *realism* that seems to be a presupposition of the scientific enterprise – the alternative being a kind of *instrumentalism*. From the point of view of our present discussion, this would seem to be a difference that makes no difference, since in both cases science is attempting to cognise a pre-formed world and predict its behaviour. Furthermore, it seems that science *must* cultivate ‘good habits’, that is to say, standards or norms of good epistemic practice. Science is thus perpetually at risk of ‘stupefaction’ – but science wholly subject to such a state (science ‘normalised’) is *dead* science. Science does well to keep itself free of ‘moralism’, at the same time as a certain ‘policing’ of the mind is essential if science is not to lose its necessary stringency. Science thus plays a dangerous game: in seeking to meet the challenges of cognising the external world, or even just of predicting the behaviour of the observable world, it is drawn to exploit the creative powers of the mind that exceed the economy of recognition; at the same time as the very nature of science as an epistemic and/or pragmatic enterprise, consequently directed towards the actual, constantly threatens to draw it into the horizon of transcendental illusion.

Science, unlike philosophy, involves both moments of critical creativity – moments at which it recognises the need to reframe a domain of inquiry by posing a new problem or posing a problem in a new way, breaking with established approaches and creating new concepts – and moments of consolidation and progress relative to ‘established’ frames of reference. Philosophy, by contrast, is in the business of critique and of concept formation. The history of philosophy is the

history of a series of singular works of construction. Each philosopher *begins again*, ‘repeating’ aspects of prior systems in a way which does not build on them cumulatively, but rather transforms their meaning.

What lies at the root of this difference in philosophy’s and the sciences’ respective relations to critical-creative thinking? The most plausible root of this divergence, I would argue, is their divergent aims and motivations. Science is primarily an epistemic and pragmatic enterprise. That is to say, the sciences aim at the production of *knowledge*, with a view to gaining a certain degree of *control* over our environment. This is the complicity between science and technology that many philosophers and historians of science have noted, if in a variety of different ways. Different thinkers have emphasised these aspects and their relation in different ways, and they have no doubt different weightings depending on the area of science in question and its mode of institutionalisation. (Some scientific research programmes are more explicitly directed towards technological outcomes, either because of the nature of the domain of inquiry or because of institutional factors affecting the way in which the research is carried out; whilst others, theoretical particle physics being perhaps the most striking example, seem to be as close as we come in reality to exemplars of the ideal of the disinterested search for knowledge.) Philosophy’s aims and motivations, as Deleuze sees them, would seem to be quite different.

What is the point of philosophy, for Deleuze? Why break with doxa and delve into the differential unconscious only to return to the surface with a flurry of conceptual creativity? What drives the creation of concepts, once it is severed from the rationale of ongoing epistemic development and self-correction? On the one hand, as we have seen in the previous chapter, Deleuze claims that philosophy is ‘ontology’. Philosophy seeks to think beings not as units in the economy of

generality, but in their being. Being, according to Deleuze, is such that it demands a new conceptualisation each time it is approached. Each philosophical system is a singular construction, but it is constructed precisely as an attempt to ‘interpret’ an ‘encounter’ with being in the problematic form in which it can be sensed. There is thus an *experience of being* at the heart of the construction of each singular system of philosophical concepts. Being is this ‘thickness’ – the ‘coloured thickness of a problem’ (*DR*, p. 214/p. 165) – that conceptual thought endlessly interprets without ever exhaustively capturing its meaning. If philosophy is opposed to the crystallisation of intellectual habits and the mirage of conceptual self-sufficiency, then, it is insofar as these obfuscate the being of singular things.

On the other hand, there is an *ethical* dimension to the work of critique. We can see the emergence in Deleuze’s early thought of the ethical strand that will be taken up more explicitly subsequently in his collaborative works, such as *Anti-Oedipus*. That is, if the creation of concepts is no longer motivated by a striving for accurate representation, it seems that it takes on a role in the thinker’s cultivation of their own capacities, the cultivation of the ‘vitality’ of the mind as a site of creative thinking.³² In *Nietzsche and Philosophy*, Deleuze addresses this question directly:

³² As de Beistegui (2010) notes, ‘transcendental empiricism is not just a theoretical or ontogenetic enterprise, but one that is also immediately practical or experimental’, this practical aspect involving ‘seek[ing] ways of experiencing the transcendental field itself’ so as to ‘counter-actualise the movement of organisation and individuation, or loop back into a state of thought, feeling and perception that is not yet codified, fixated or bound’ (pp. 113-114). If ‘much of the history of ontology is actually a systematic subordination of ontology to morality, [...] or an onto-theology’, insofar as ‘much of the history of ontology and metaphysics is in fact moved and motivated by moral values’ (‘a diagnosis [which] is of course deeply Nietzschean’), then ‘[b]y freeing ontology from morality and transcendence [...], Deleuze also and *de facto* frees up the possibility of ethics’ as ‘a matter of power, not duty’, a ‘question [...] of knowing what [a given mode’s] powers are, *what it can do*, or of what it is capable’ (de Beistegui 2010, pp. 106-107)

When someone asks “what’s the use of philosophy?” the reply must be aggressive, since the question tries to be ironic and caustic. Philosophy does not serve the State or the Church, who have other concerns. It serves no established power. The use of philosophy is to *sadden*. A philosophy that saddens no one, that annoys no one, is not a philosophy. It is useful for harming stupidity, for turning stupidity into something shameful. [...] Is there any discipline apart from philosophy that sets out to criticise all mystifications, whatever their source and aim, to expose all the fictions without which reactive forces would not prevail? [...] Creating free men, that is to say men who do not confuse the aims of culture with the benefit of the State, morality or religion. [...] Who has an interest in all this but philosophy? Philosophy is at its most positive as critique, as an enterprise of demystification.
(*NP*, pp. 120-121/p. 106)

What is foregrounded here, I would suggest, is philosophy’s ultimately *ethical* purpose. At the heart of representation is ‘a disturbing complacency’ (*DR*, p. 177/p. 136) which it is philosophy’s task, as ‘an enterprise of demystification’, to combat (*DR*, p. 121/p. 106). This is a thematic that we will have a chance to explore in more detail later in the thesis.

Conclusion

In this chapter, I have argued that it is a mistake to read the early Deleuze as conflating science and philosophy, or as taking them to be methodologically continuous with one another. Rather, although both deploy and even create concepts, only philosophy can be understood to arrive at its manipulation of concepts via a movement of critique. This critical movement extricates philosophical conceptuality from its correlation with the world of representation, allowing the creative power of concepts as expressions of the transcendental production of a world to shine through. Concepts become philosophical, therefore, when instead of simply referring to a world of objects, they bring out the virtuality that gives these objects their sense and their being – in other words, when they express rather than obscure the work of transcendental synthesis.

For now, we can simply note that critique, and the way in which it transforms conceptuality's relationship with problems or Ideas, lies at the root of the difference between philosophy and science. If the proponents of the scientific reading tend to lose sight of this difference in Deleuze's work, then it is insofar as they (i) fail to grasp the full significance of the *critical* moment in Deleuze's conception of philosophy; and consequently (ii) conflate science's exit from the classical Newtonian paradigm, or from an exclusive focus on linear causality, with its becoming critical in Deleuze's sense. I have argued that science, whilst it exhibits moments of critical-creative thinking in Deleuze's sense, is ultimately bound to representation by its epistemic aims. Philosophy, on the other hand, pursues a kind of perpetual revolution in thought which ultimately has an ethical purpose, namely the maintenance of thought's 'vitality'.

Chapter 3

Becoming Philosophical

The Philosophical Appropriation of Scientific Concepts

Introduction

In the present chapter, I will continue my investigation into the question of the place of science in the metaphilosophical concerns of Deleuze's work of the 1950s and '60s by examining what might plausibly be thought of as the root of the notion that a certain complicity between philosophy and particular developments in twentieth-century mathematics and physics is of central importance for Deleuze's renewal of philosophy, namely his use of scientific (under which heading I include, for present purposes, mathematical¹) concepts.

As I have noted in the introduction, the stimulus for the present thesis is the impact on the reception of his thought of readings of Deleuze's early thought that construe his transcendental empiricism as dependent upon or essentially responding to developments in twentieth-century physics and mathematics. Furthermore, I have noted that a crucial motivation behind these readings is the desire to take Deleuze's use of scientific concepts 'seriously'; the exegetical power of doing so is then taken to indicate the need to see Deleuze's development of *philosophical* concepts as essentially dependent upon or responding to the development of these particular

¹ Whilst this inclusion of mathematics under the mantle of 'science' may seem slightly idiosyncratic in an Anglophone context, in the Francophone context in which Deleuze worked this is normal practice.

scientific conceptual resources. Most broadly, the ultimate upshot of this strategy of reading is to construe Deleuze as a ‘materialist’ or even ‘naturalist’ philosopher, in a way which suggests a position which rejects or at least obscures the specificity of philosophy in favour of a continuity between philosophy and the sciences – a position which, as I have already suggested in the introduction – I take to be implausible as a reading of Deleuze’s early work. As I have explicated in the previous chapter, this reading loses sight of the critical and ethical character of that philosophy and the consequent specificity of philosophy in relation to the ultimately epistemic and pragmatic concerns of the sciences.

The present chapter seeks to build on the case against such a reading which I have been constructing in the course of this thesis by turning some critical attention to the status of some of the specific scientific concepts put to use in Deleuze’s philosophical discourse. What sort of relationship between philosophy and science, or between philosophical concepts and scientific concepts, is evidenced by Deleuze’s use of scientific concepts?

‘We are [...] well aware’, Deleuze states in the preface to *Difference and Repetition*, ‘*unfortunately* [malheureusement], that we have spoken about science in a manner which was not scientific’ (*DR*, p. 4/p. xxi [my emphasis]). Let me begin by insisting that we not take this *malheur* seriously. Deleuze has no intention of speaking about science, or more specifically of deploying scientific concepts, *scientifically*; and if he has (and indeed he has) failed to do so, this is not due to ignorance on his part, but is rather intrinsic to the way in which these concepts are being *re*-deployed quite deliberately by Deleuze in a philosophical register.

In what follows, I will show how Deleuze distances scientific concepts from their original scientific contexts. As I have already shown, even DeLanda notes the

need for such a distancing, but in my view does not pay sufficient attention to what it involves or to its implications for philosophy's relation to the sciences in Deleuze's work. Thus, in the present chapter, my aim will be to clarify Deleuze's understanding of this movement of concepts between contexts. I will do this through a close reading of Deleuze's use of scientific concepts in chapters 4 ('The Ideal Synthesis of Difference'²) and 5 ('The Asymmetrical Synthesis of the Sensible') of *Difference and Repetition*.

In these two chapters, Deleuze articulates his account of Ideas as virtual structures and the process of their actualisation. It is thus here that much of the conceptual work is done to substantiate the claims made in chapter 1 of that work, namely, that the traditional philosophical – 'ousiological', to borrow a term from de Beistegui (2004, chap. 1) – notion of essence must be supplanted by a new concept of multiplicity or structure (Idea) if we are to evade certain persistent difficulties surrounding the role of difference in categorisation which expose the limitations of the ousiological schema.³ It is in articulating these new concepts, or in this reworking of prior concepts, that Deleuze draws on scientific conceptual resources.

In particular, I will be concerned with his engagements with two sets of conceptual resources: (i) his use of mathematical concepts, drawn from the field of differential calculus, in the elucidation of the notion of the 'different/ciation' of Ideas in chapter 4 of *Difference and Repetition*; and (ii) his critical discussion of physical concepts drawn from the field of classical thermodynamics in relation to the process of actualisation of Ideas in chapter 5.

² Slightly idiosyncratically translated by Paul Patton as 'Ideas and the Synthesis of Difference'.

³ For a comprehensive account of these difficulties, see Somers-Hall (2012a, chap. 2).

The conclusion for which I will argue is that an examination of how Deleuze seeks to situate philosophy and the philosophical use of scientific conceptual resources in relation to those resources themselves exhibits an operation of extraction, distancing and extension. Deleuze puts to use aspects of scientific concepts, thematics and problematics that he finds illuminating for the purposes of his own concept construction, and in relation to his own problems and questions, in such a way that it becomes apparent that his philosophical agenda is external and different to the agendas of the scientific fields from which these concepts are drawn. Given the way he positions his engagements with these concepts in relation to the fields from which they are drawn, it becomes difficult to see his aim as that of contributing to furthering the explanatory aims of these scientific fields themselves – or, indeed, of clarifying, explicating or extending their conceptual resources *for science's sake*. This discussion will thus serve to illustrate more concretely the conclusions of chapter 2, which examined how Deleuze distances his general philosophical approach from the epistemic demands of ‘scientificity’ as he sees them.

1 Deleuze’s use of mathematical concepts: differential calculus

Does Deleuze’s engagement with mathematical concepts demonstrate that his philosophy is attempting to respond to a need to reform basic philosophical concepts and problems demanded by the development of these conceptual resources themselves? I would argue that it does not. What we see instead, I want to suggest, is Deleuze encountering differential calculus as an opportunity, a resource to further a project which – even if it could be argued that it is *inspired* by the development of these conceptual resources – is nevertheless independent of them, and could have

been pursued – if, perhaps, less adequately – without them. Equally, it is a project which might find itself confronted by further conceptual opportunities in the future with which to develop an even fuller and more adequate expression of its key concepts, opportunities which need not come from mathematics. This is the project of constructing a non-dialectical conception of difference (a project which can already be seen taking form in Deleuze’s review of Hyppolite), and with it a new transcendental philosophy: one in which difference, transformation and novelty are the conditions of identity, stability and fixity, and not vice versa.

1.1 Problematic Ideas and their differential determination

Deleuze appeals to the calculus in giving an account of Ideas and their ‘problematic’ status. (I have shown the role these ideas play in Deleuze’s early philosophy in chapters 1 and 2.) The calculus provides a ‘technical model’ which can facilitate an ‘exploration’ of problematic Ideas and their distinctive manner of determination – a point to which I will return shortly.⁴

This discussion takes place in chapter 4 of *Difference and Repetition*, where Deleuze gives an account of the nature of Ideas. In particular, he gives an account of their dual determination:

⁴ ‘The entire Idea is caught up in the mathematico-biological system of different/ciation. However, mathematics and biology intervene here only as technical models for the exploration of the two halves of difference, the dialectical half and the aesthetic half, the exposition of the virtual and the process of actualisation’ (*DR*, pp. 284-285/pp. 220-221 [translation modified]).

- (i) their ‘differentiation’ – i.e. their determination *qua* ‘virtual’ structures, consisting of differential relations and distributions of singularities determined by these relations – and
- (ii) their ‘differentiation’ – i.e. their ‘expression’ in actual phenomena (entities, individuals, systems).

It is in virtue of their *differential* determination (both at the level of pure virtuality and that of their actualisation) that Ideas are supposed to account for the identity and persistence of actual entities without simply appealing to the sort of reified mirror image of this actual identity that Deleuze claims to discern in ontological essences (*and*, alternatively, without appealing to an anti-essentialist nominalism that would do away with the extra-‘anthropological’ *reality* of identity and form altogether). It is in order to give a rigorous characterisation of this differential determination of Ideas that Deleuze appeals to differential calculus.

First of all, it is perhaps worth noting that the notion of ‘Idea’ with which Deleuze is working, whilst it is no doubt intended to evoke Platonic resonances, is most explicitly a development of the *Kantian* or post-Kantian notion – at least as it is articulated in the discussion of chapter 4. Deleuze discerns in this Kantian notion of Idea certain characteristics which he wants to retain in order to conceptualise the virtual, multiply actualisable structures with which he wishes to replace essences or possible forms.

What is important for Deleuze about Kantian Ideas is, first of all, that they are ‘essentially “problematic”’ – indeed, ‘problems are Ideas’ (*DR*, p. 218/p. 168). If this notion of Ideas as problematic or as problems is important, it is because – as

Deleuze has already begun to articulate in his discussion of the ‘postulate of modality or solutions’ in chapter 3 of *Difference and Repetition* (*DR*, pp. 204-213/pp. 157-170) – a proper understanding of the *difference in kind* between problems and their solutions (or between concepts of the understanding as rules for the production of solution and Ideas of reason as problems that cannot be solved⁵) is crucial in order to understand why the *re-cognitive* economy of representation is not the last word on our capacities *qua* thinking and experiencing beings, but needs to be ‘grounded’ in a regime of the faculties that *exceeds* it, that goes beyond its limits.⁶ Thus, the system of concepts in terms of which we categorise the world can be seen as a ‘solution’ (and, it should be noted, for Deleuze only *a* solution) to a problem posed at the level of Ideas.

Insofar as they are problematic, Ideas exhibit three moments of determination: they are ‘*undetermined* with regard to their object, *determinable* with regard to objects of experience, and bearing the ideal of an infinite *determination* with regard to concepts of the understanding’ (*DR*, p. 220/p. 169 [my emphasis]). It is as a model for this tripartite status of the determination of an Idea, and the way in which this is to be related to its problematic status, that Deleuze turns to the notion of the differential he finds in differential calculus.

Deleuze is interested primarily in the notion of *the differential*, which is designated in mathematical notation by the symbol dx . The differential can be

⁵ ‘Thus we might say that the absolute whole of appearances **is only** an **idea**, since [...] it remains a **problem** without any solution’ (Kant 1998, p. A328/B384 [original emphasis]). By this, Kant ‘does not mean that Ideas are necessarily false problems and thus insoluble but, on the contrary, that true problems are Ideas, and that these Ideas do not disappear with “their” solutions, since they are the indispensable condition without which no solution would ever exist’ (*DR*, p. 219/p. 168).

⁶ See chapter 2 for a fuller discussion of these notions.

understood as follows: given a graph of a curve representing the changing ratio between two variables, the differential dx is ‘the difference in x values between two consecutive values of the variable’ represented by the x -axis of the graph *at a given point* on the curve (Duffy 2013, p. 9).⁷ The peculiarity of this notion of the differential is already apparent in this initial definition, insofar as we are dealing with a *difference* between two values of a variable *at a point*. By way of an initial clarification of this peculiarity, it may be noted that this difference between consecutive values of a variable at a specific point on a curve is to be conceived as *infinitesimal*, that is, infinitely small or *vanishing* – although it will prove to be a point of contention beyond the limits of the present study what role this notion of the infinitesimal should play in a proper understanding of Deleuze’s interest in the calculus and its accompanying notion of the differential.⁸

These debates aside, for present purposes it is sufficient to note that it is this peculiar status of the differential which, first of all, has been at the heart of debates concerning the proper interpretation and legitimacy of the calculus; but also which allows it to play the role that Deleuze requires it to play in providing a model for the ‘objectively’ problematic status of Ideas. It does this insofar as dx , in Deleuze’s estimation, effectively presents us with the same three moments we discern in the Kantian Idea: *undetermined, determinable, determination* – but crucially, presented in such a way that the three moments are *intrinsic* to the determination of the

⁷ Where details of the ideas behind the differential calculus are presented here, my presentation is indebted to that of Simon Duffy (2013), which rehearses the themes of a number of earlier papers on the subject of Deleuze and mathematics, and Henry Somers-Hall (2010; 2012a, chap. 4).

⁸ See Duffy (2013, pp. 161-7), where he criticises Somers-Hall for having misunderstood Deleuze’s attitude towards the infinitesimal, and consequently towards Leibniz’s interpretation of the calculus (on which, see Duffy 2013, chap. 1).

differential, in a way which Kant, according to Deleuze, has failed to adequately capture. By showing how these three moments might be attributed to a single structure, the mathematical concept of the differential makes it possible to go beyond the limits of Kant's conception of the Idea, which, according to Deleuze, makes the mistake of having 'incarnated these moments in distinct Ideas' (*DR*, p. 221/p. 170).⁹ In addition, Kant makes the further mistake, according to Deleuze, of treating 'two of the three moments' as 'extrinsic characteristics': 'if Ideas are in themselves undetermined, they are determinable only in relation to objects of experience, and bear the ideal of determination only in relation to concepts of the understanding' (*DR*, p. 221/p. 170).¹⁰

We can see, very briefly, what Deleuze is getting at here if we consider the status of the differential, dx . First of all, ' dx is strictly nothing in relation to x , as dy is in relation to y ' (*DR*, p. 222/p. 171). This notion can be understood in terms of the infinitesimal character of the difference, such that the value of dx converges to zero; it is in effect treated as null at key stages in the course of the basic algebraic manoeuvres involved in the solution of a differential equation. In describing the indetermination of the differential in this way, we should be careful to note that, as Somers-Hall (2010, p. 568) emphasises, Deleuze will insist that strictly speaking the differential should not be conceived as an infinitesimal quantity which *approximates*

⁹ For Kant, according to Deleuze, 'the [Idea of the] Self is above all undetermined, the [Idea of the] World is determinable, and [the Idea of] God is the ideal of determination' (*DR*, p. 221/p. 170).

¹⁰ Deleuze's insistence on the importance of an 'intrinsic' account of the differential determination of Ideas is a consequence of his engagement with Salomon Maimon's critique of 'the Kantian duality between concepts and intuition' and of the schematism as an attempted solution to the difficulties raised by this duality (*DR*, p. 224/p. 173). See chapter 1 for discussion of this aspect of Deleuze's early philosophy.

zero, but as ‘strictly nothing’ in relation to the variable (*DR*, p. 222/p. 171). This is important if we are ‘to take the symbol dx seriously’ (*DR*, p. 221/p. 170), which is to say, not to take it as a matter of approximation or even as the useful utilisation of a move which is *strictly speaking* an error (albeit one of ‘infinitely small magnitude’) (*DR*, p. 229/p. 177). Recalling the Kantian notion of the Idea, this would be to treat the differential in a manner analogous to treating the problematic character of the Idea as a matter of subjective deficiency, rather than as an objective structure in its own right.

If the differential is nonetheless *not nothing* from the perspective of the differential calculus, it is insofar as it is *reciprocally determined* by its relation to another differential. We see that whilst the individual differential dx is at certain points in the mathematical procedure of differentiation treated as equivalent to zero and thus eliminable, the fraction $\frac{dy}{dx}$ is not eliminable in this manner, and plays a non-null role in the solution of a differential equation. Although ‘[i]n relation to x , dx is completely undetermined, as dy is to y , [...] they are perfectly determinable in relation to one another’, which is to say that they become reciprocally determinable in the context of their relation in a way that they simply are not in isolation (*DR*, p. 223/p. 172). This sort of reciprocal determinability is in stark contrast to what we see in the case of fractions the terms of which are simple quantities: ‘The relation $\frac{dy}{dx}$ is not like a fraction which is established between particular quanta in intuition, but neither is it a general relation between variable algebraic magnitudes or quantities. Each term exists absolutely only in its relation to the other: it is no longer necessary, or even possible, to indicate an independent variable’ (*DR*, p. 223/p. 172).

Finally, the differential exhibits an ideal of complete determination, insofar as it makes possible a solution of the differential equation, and thus a determination of the value of the degree of variation of the ratio between two variables at any given point on the curve. In other words, through its reciprocal determination, the differential allows for the determination of ‘the values of a relation’ itself, i.e. the value of the instantaneous rate of change between two variables (*DR*, p. 228/p. 174). Thus, the peculiar status of the differential as ‘an ideal difference’ allows it to be at once undetermined in itself, determinable in the context of its relation to another differential, and the key to the determination of a value for that relation itself (*DR*, p. 227/p. 175).

Ideas, Deleuze wants to say, are *differential structures* in a sense that can be helpfully informed by the above outlined understanding of the status of the differential in differential calculus. Ideas are structures the terms of which are undetermined in themselves, yet reciprocally determined in the context of the structure by their differential relations to one another, and which are capable of being expressed in ‘actual’ (non-ideal) terms and relations which are determinate and thus no longer present this differential (undetermined yet reciprocally determined) character. The *differential* character of the ideal structure that is expressed is ‘covered’ by the determinate values (qualities, magnitudes) which express it. It is in this respect that Deleuze wants to characterise the differential as ‘problematic’: it disappears from the solution whilst having been a vital determining component at the level of the composition of the problem in relation to which this solution *is* a solution.

1.2 *Lautman and the dialectic of problems*

We have seen above how Deleuze tries to draw out a correspondence between the notion of the differential as it emerges in differential calculus and a notion of Ideas as problematic inspired by Kant, such that the peculiar status of the differential might illuminate the problematic status of Ideas, and their differential structure, in contrast to the ‘propositional’ character of the conceptualisations in which they are expressed. But how does Deleuze position his own philosophical appropriation of the mathematical concept of the differential in relation to its mathematical origins?

What is interesting here is Deleuze’s insistence on a certain ambiguity surrounding the notion of the differential: ‘the differential calculus belongs entirely to mathematics, even at the very moment when it finds its sense in the revelation of a dialectic which points beyond mathematics’ (*DR*, p. 232/p. 179). In this respect, it seems that Deleuze wants to insist both on the concept of the differential being entirely proper to its native mathematical domain *and* on its having an inherent philosophical significance that exceeds that register. How should we understand his insistence on this point?

In order to understand the perspective from which Deleuze makes these pronouncements, we need to note his indebtedness to the thought of Albert Lautman, and in particular to a distinction drawn from the latter’s work between the scientific (specifically mathematical) fields in which theories are articulated and the philosophical ‘dialectic’ which endeavours to discern the *ideal reality* which structures and conditions these theories’ construction.

The crucial idea that Deleuze will take from Lautman is that ‘[t]he problem is at once both transcendent and immanent in relation to its solutions’ (*DR*, p. 212/p. 163). ‘A problem does not exist outside its solutions’, hence its immanence; yet

‘[f]ar from disappearing, it insists and persists in these solutions which cover it’, hence its transcendence (*DR*, p. 212/p. 163 [translation modified]). In fact, Deleuze takes from Lautman a threefold characterisation of the problem, in terms of ‘its difference in kind from solutions; its transcendence in relation to the solutions that it engenders on the basis of its own determinant conditions; and its immanence in the solutions which cover it, the problem *being* the better resolved the more *it is* determined’ (*DR* 232/178-9 [original emphasis]). It is in virtue of this transcendence and this difference in kind from its solutions that Lautman, and with him Deleuze, considers that a problem might be an object of inquiry in its own right, the object of an exposition as a determined ideal structure, as opposed to the determination of a problem being conflated with the specification of its solution.¹¹

It is this inquiry into problems as such and in their own right – *as Ideas* – that Lautman and consequently Deleuze characterise as ‘dialectic’. ‘Nowhere better than in the admirable work of Albert Lautman’, Deleuze states,

has it been shown how problems are first Platonic Ideas or ideal liaisons between dialectical notions, relative to “possible [*éventuelles*] situations of the existent”; but also how they are realised within the real relations constitutive of the desired solution within a *mathematical, physical* or other field. It is in this sense, according to Lautman, that science always participates in a dialectic which points beyond it – in other words, in a meta-mathematical and extra-propositional power – even though the liaisons of this dialectic are incarnated only in effective scientific propositions and theories.¹²

(*DR*, pp. 212-213/pp. 163-164 [original emphasis; translation modified])

He then maps out a set of distinctions:

¹¹ Although ‘[a] problem is determined at the same time as it is solved’, ‘its determination is not the same as its solution’ (*DR*, p. 212/p. 163).

¹² The section in inverted commas is a paraphrase of Lautman (2011): ‘as “posed questions”, [Ideas] only constitute a problematic relative to the possible situations of entities’ (p. 204).

If it is true [...] that it is problems which are dialectical in principle, and their solutions which are scientific, we must distinguish completely between the following: the problem as transcendental instance; the symbolic field in which the immanent movement of the problem expresses its conditions; the field of scientific solvability [*résolubilité*] in which the problem is incarnated, and in terms of which the preceding symbolism is defined.

(*DR*, p. 213/p. 164)

Here we see that the scientific (including mathematical) field in which a problem is solved is but one aspect of the being and the movement of this problem conceived as an Idea. It is the role of dialectic as ‘a general theory of problems’ to encompass these various elements and relate them to one another (*DR*, p. 213/p. 164).

The significance of these remarks by Deleuze is clearer when they are set against their Lautmanian background. Lautman (2011) takes his philosophy of mathematics to be avowedly ‘Platonist’, in the sense that it is built around the idea that ‘in the development of mathematics, a reality is asserted that mathematical philosophy has as a function to recognize and describe’ (p. 87). Lautman (2011) distances his position from the sort of position ‘mathematicians have become accustomed to summarily designate under the name Platonism’, namely ‘any philosophy for which the existence of a mathematical entity is taken as assured’ (p. 190). Rather, his interest is in an essentially *structural* reality of Ideas lying, as it were, ‘behind’ mathematical entities. The idea here is not simply to posit an ideal double of the realm of (already themselves ideal) mathematical entities, the usefulness of which would be questionable (indeed, Deleuze would certainly question it). Rather, it is necessary to bear in mind that Lautman’s concern is to account for the way in which modern mathematical thought has been driven forward by the discovery of ways to merge or hybridise areas of mathematics that had

previously been thought of as distinct.¹³ Lautman posits ideal structures, of which mathematical entities are incarnations, in order to explain this blurring of boundaries between subfields that had been demarcated from one another by the types of mathematical entities studied. The thought is that apparently distinct types of mathematical entities in diverse subfields of mathematics are alternative incarnations of shared structures, the divergences between these different incarnations being explained by the divergent conditions of their incarnation (i.e. the distinctive characteristics of the mathematical subfield in which they are incarnated). It is only in positing such ideal structures as in some sense objective, Lautman (2011) contends, that we can do justice to mathematics as a field of inquiry ‘in which the mind encounters an objectivity that is imposed on it’ (p. 28).¹⁴

Lautman (2011) presents a possible schema for the division of labour between a particular scientific field and a philosophy which, whilst distinct from it, is nonetheless intimately concerned with its conceptual and theoretical output. Insofar as the movement of mathematical thought, of its concept construction and theorising, is driven forward and ordered by ‘the extra-mathematical intuition of the exigency of a logical problem’, that is, of ideal structures which present themselves only problematically, there is room for a move to explore the sources of such

¹³ Some examples we find in Lautman’s work are ‘algebraic topology, differential geometry, algebraic geometry and analytic number theory’ (Zalamea 2011, p. xxviii).

¹⁴ It is in this ‘Platonist’ understanding of the source of the objectivity proper to mathematical theories that Lautman (2011, pp. 87-92) sees his own position as superior both to the logicism of Russell and the Vienna Circle on the one hand and to the psychologism of Brunschvicg on the other. Interestingly, Lautman also sees his position as the legitimate, ‘structuralist’ interpretation of the ‘metamathematics’ proposed by Hilbert’s Programme, in contrast to the reductive, ‘formalist’ interpretation offered by Carnap *et al.* (see Duffy 2013, pp. 117-120; on Hilbert’s Programme more generally, see Zach 2015).

exigency in the ideal structural reality of problems themselves (pp. 188-189). It may seem implausible to suggest that science and mathematics are not concerned with problems; and indeed, I have noted in the previous chapter some examples of scientific engagements with problems or Ideas which Deleuze discusses in *Difference and Repetition*. It is thus important to clarify how Deleuze understands Lautman's position and his own here.

'Problems are always dialectical'; '[w]hat is mathematical (or physical, biological, psychical or sociological) are the solutions' (*DR*, p. 232/p. 179 [original emphasis]). On this Deleuze insists. He is willing to admit that a scientific field 'does not include only solutions to problems', but he suggests that we understand the presence of problems in scientific fields not as the presentation of problems in themselves and in their own right, but as 'the *expression* of problems relative to the field of solvability which they define, and define by virtue of their dialectical order' (*DR*, p. 232/p. 179 [my emphasis]).¹⁵ Thus, it is 'by virtue of their immanence' to a given scientific field that problems find their expression – but in virtue of their transcendence that they are not exhaustively determined by this expression, such that they might be considered in their own right, independent of any particular scientific field (*DR*, p. 232/p. 179).

1.3 *Calculus as a 'model' and the idea of a mathesis universalis*

Deleuze's discussion of the calculus can be seen to take place at two levels. On the one level, there is a direct discussion of debates in what he refers to as '[t]he interpretation of the differential calculus' or 'the "metaphysics" of calculus' (*DR*, pp.

¹⁵ This effectively mirrors the status of intensities in scientific thought, which – as I will show in the next section – are present, but only in a 'mixed' form that obscures their nature.

228-229/p. 176). What Deleuze detects here is mathematical thought coming up against questions which ‘carry it’ – as he says of literature in a different context – ‘as far as the entrance to philosophy itself’ (*DR*, p. 196/p. 151). This is *not* to say, however, that mathematics can be said to actually take up the mantle of philosophy, displacing the latter by showing that problems supposedly proper to it are more readily solvable in a mathematical register.¹⁶ This would be, in effect, to argue for the redundancy, in the face of certain conceptual developments in mathematics, of a specifically *philosophical* engagement with the problem in question; and this does not seem a plausible characterisation of Deleuze’s aims given his insistence on a distinction between the articulation of concepts in a particular mathematical or scientific domain and these concepts’ expression of dialectical Ideas which exceed the limits of these domains. This leads us to the broader level on which Deleuze takes up his engagement with differential calculus: here, there is a shift to an exposition of what is described as ‘a wider universal sense’ of differential calculus, where the latter becomes a model for exploring the genesis of conceptual fields from ideal structures *in general*, a model for a general theory of problems (*DR*, pp. 228-229/p. 176). How is philosophy positioned in relation to mathematics as a scientific field on these two levels?

Initially, we see Deleuze emphasise how the ‘metaphysical’ implications of the calculus arise already at the level of its ‘technical’, which is to say mathematical,

¹⁶ Here I would distance myself from Robin Durie’s (2006) formulation, which emphasises the way in which ‘the field of mathematics can yield concepts whose function can reveal the inadequacy of traditional philosophical concepts, at the very moment they *displace* these concepts’ (p. 170 [my emphasis]). This formulation returns us to the open question with which DeLanda and Protevi left us in the introduction; namely, if Deleuze’s use of scientific concepts is to be understood as showing how these concepts can replace philosophical concepts, why the need for a re-appropriation of these very concepts *as* philosophical concepts?

use. '[F]rom the outset' – which is to say, already at the level of the question of the legitimacy of certain basic algebraic moves involved in the solution of a differential equation – we encounter the question: 'why is it that, from a technical point of view [*techniquement*], the differentials are negligible and must disappear in the result?' (DR, p. 229/p. 177) It is in this respect that, even as it points the way towards 'metaphysical' considerations which, we might suggest, fall outside the remit or at least the field of interest of mathematics, '[d]ifferential calculus obviously belongs to mathematics', as 'an entirely mathematical instrument' (DR, p. 232/p. 179). Nonetheless, it is likewise a site of philosophical discovery, in the sense that the notion of the differential allows us to articulate a notion of differential determination and of the emergence of discontinuous quantities from continuous variation which is demonstrably helpful in the construction of a concept of the Idea as an ideal differential structure. However, what is essential to emphasise for the purposes of my present argument is that whilst differential calculus provides Deleuze with conceptual resources which prove to be essential for the full definition of an Idea as he wants to conceive it, it is in a key respect *contingent* that it is differential calculus which offers him resources to this end.

Thus, Deleuze states that:

The problematic or dialectical Idea is a system of connections between differential elements, a system of differential relations between genetic elements. There are different orders of Ideas presupposed by one another according to the ideal nature of these relations and the elements considered (Ideas of Ideas, etc.). *There is as yet nothing mathematical in these definitions.* Mathematics appears with the field of *solution* in which dialectical Ideas [...] are incarnated, and with the *expression* of problems relative to these fields.

(DR 234-5/181 [my emphasis])

What becomes apparent in this remark is that, whilst differential calculus provides an especially concrete and precise example of the expression of an Idea, in the sense

that it provides a case where a differential element at the level of the posing of a problem both generates and disappears in its solution, the conception of Ideas as problematic and differentially determined is not essentially mathematical in its content. The formulation of the notion is not *derived* from the mathematical field which is found to exemplify it; the definition of the structure of a problematic is independent of the manifestation of this structure in a mathematical context.

Furthermore, Deleuze will go so far as to say that differential calculus, as strictly ‘mathematical instrument’, ‘does not necessarily represent the most complete form of the expression of problems and the constitution of their solutions in relation to the order of dialectical Ideas which it incarnates’ (*DR*, pp. 234-235/p. 181). That is, whilst differential calculus is of especial interest due to its proximity to the problematic dimension which exceeds its mathematical use, the notion of the problematic that Deleuze wants to articulate is not essentially bound to differential calculus as a mathematical instrument. If philosophy is to become differential and problematic, this is not in order to conform to intellectual demands issuing from differential calculus itself and the transformation it represents in our mathematical thought; rather, this problematic, differential philosophy will encounter differential calculus as an opportunity, a resource to further its own thinking of the nature of problematics in general, a stage on which to *dramatise* this thinking.

This brings us to the point at which the notion of differential calculus detaches most visibly from its mathematical moorings and enters into a distinctly philosophical register. This is the point at which Deleuze will begin to speak of differential calculus as having ‘a wider universal sense in which it designates the composite whole that includes Problems or dialectical Ideas, the Scientific expression of problems, and the Establishment [*Instauration*] of fields of solution’

(*DR*, p. 235/p. 181). We can recognise here Deleuze's Lautmanian conception of the dialectic as a general theory of problems, encompassing the various moments of the Idea, which makes clear that 'differential calculus' in this extended sense belongs more to a philosophical dialectic of Ideas than to a mathematical field of problem-solving. We see this in the fact that, if differential calculus in this broader sense provides an account of the structure of any given problematic and the genesis of a corresponding 'field of solvability', nonetheless there is no question of an 'application of mathematics to other domains' (*DR*, p. 235/p. 181):

It is rather that each engendered domain, in which dialectical Ideas of this or that order are incarnated, possesses its own calculus. [...] It is not mathematics which is applied to other domains but the dialectic which establishes for its problems, by virtue of their order and their conditions, the direct differential calculus corresponding or appropriate to the domain under consideration. In this sense there is a *mathesis universalis* corresponding to the universality of the dialectic.

(*DR*, p. 235/p. 181)

We see here a slippage whereby we move from references to differential calculus in what is clearly its mathematical sense to references to differential calculus in which the term would appear to have been extracted from its mathematical context and redeployed in what could be called a philosophical register, in any case in an extra-mathematical register. There is a change of register whereby 'differential calculus' comes to have far broader, or at least quite different, scope than it has had when used to refer to 'an entirely mathematical instrument' (*DR*, p. 232/p. 179). Differential calculus can now be taken to serve as a *model* for the structure of Ideas as 'differentials of thought', a model for an 'algebra of pure thought', an 'alphabet of what it means to think' (*DR*, p. 235/pp. 181-182).

Deleuze calls upon us to understand this extended usage as the application of a 'model':

The entire Idea is caught up in the mathematico-biological system of differentiation. However, mathematics and biology intervene here only as technical models for the exploration of the two halves of difference, the dialectical half and the aesthetic half, the exposition of the virtual and the process of actualisation.

(*DR*, p. 285/pp. 220-221 [my emphasis; translation modified])

In this notion that the movement from Ideas to concepts in mathematics might function as a model for the insistence of ideal structures as the condition of concept construction in any domain, Deleuze picks up a further idea from Lautman. Lautman (2011) suggests that '[m]athematics [...] plays with respect to other domains of incarnation, physical reality, social reality, human reality, the role of model in which the way that things come into existence is observed' (p. 203). Thus, as Duffy (2012, p. 130) notes, Deleuze's appeal to the notion of the differential and to the differential calculus can be seen as following through on Lautman's unrealised suggestion of the possibility of taking mathematics as a model for the ideal genesis of form in other domains. It remains to be seen, however, precisely what Deleuze has in mind when he talks about scientific concepts providing a 'model' for philosophical concepts. I will return to this point in the final section of this chapter.

What I have sought to highlight here is how, in the course of Deleuze's engagement with differential calculus, we move more and more definitively from a mathematical to a philosophical register: beginning with the task of extracting the philosophical meaning from the technical application of the calculus, we end with a near total transposition of the concept into a philosophical register, where its essential connection to the mathematical domain has been loosened to the point where it becomes (at the very least) an open question whether the term 'differential calculus' is used in some sense metaphorically, and where the ties that bind the concept of the Idea as differential to the mathematics of the differential have come to

seem increasingly contingent. In the final section of this chapter, I will suggest that we can indeed understand these scientific concepts as *metaphors*, in the sense that they illuminate the philosophical concepts in question at the same time as there is a change in the sense of these concepts as they are redeployed in a new problematic context.

As such, while the details of Deleuze's formulation of his notion of the Idea are clearly dependent upon his engagement with differential calculus, it seems to me incorrect to suggest that that notion is an attempt to respond to challenges arising from the calculus itself (except in the restricted sense in which Deleuze participates in debates in the philosophy of mathematics concerning how to best interpret the calculus – a debate which, though it clearly affects his understanding and thus appropriation of the concept of the differential, is not his primary concern). Deleuze is inspired and empowered by his appropriation of mathematical conceptual resources, but it is an *appropriation* of those resources to a project quite independent of them.

If mathematics provides Deleuze with a particularly fruitful source of conceptual material, however, this does perhaps reflect something about mathematics itself. In his account of the way in which twentieth-century physics breaks with the intuitive categories of pre-scientific common sense, Gaston Bachelard points to mathematics as being of crucial importance for this break. Mathematics is important for Bachelard because it is cut off from the constraints placed on the empirical sciences by the demands of experiment and observation. As Mary Tiles (1984) puts Bachelard's point, 'mathematics provides the realm within which the scientist can daydream' (p. 65). As I already suggested in chapter 2, it is perhaps possible to conceive the capacity of mathematics to loose thought from its

moorings in representation and grasp problems as such as dependent on this sort of disconnection between pure mathematics and the demands of fidelity to experimentally conditioned observations of the empirical world. This does not negate the fact that Deleuze's appropriations of mathematical concepts take these concepts in directions not envisaged or required by their mathematical use – but it does perhaps go some way towards explaining why mathematics in particular should prove such a fruitful source of creative conceptual constructions for the philosopher to redeploy.

2 Deleuze's engagement with physical concepts: classical thermodynamics

In the defence by DeLanda and those influenced by him of the notion of an essential affinity between Deleuze's philosophy and complexity science, an important place has been given to non-linear or non-equilibrium thermodynamics. Where classical or linear thermodynamics, in the words of Prigogine and Stengers (1986), 'failed to allow us to go beyond the paradox of the opposition between Darwin and Carnot, between the appearance of organised natural forms and the physical tendency towards disorganisation' (pp. 211-212), non-linear thermodynamics 'allows us to specify which systems are capable of escaping from the type of order which governs equilibrium, and at what threshold, what distance from equilibrium, what value of the imposed constraint fluctuations come to be capable of leading the system towards behaviour wholly different from the usual behaviour of [linear] thermodynamic systems', namely the emergence rather than dissipation of organisation in a system (p. 213). If classical thermodynamics announces the physical phenomenon of entropy, the inevitability of increasing disorganisation, non-linear thermodynamics

works to understand the way in which organisation nonetheless emerges and, for a time, persists, how systems are able to manifest order against the tendency towards disorder.

Deleuze has been credited with offering the *ontology* that gives full meaning to these scientific developments (see the introduction to the present thesis), but how plausible is this in the light of his engagement with thermodynamics in the text of *Difference and Repetition*?

The first point to note is that Deleuze's discussion, insofar as it is an explicit engagement with thermodynamics as a branch of the physical sciences, is restricted to classical thermodynamics. One important explanatory factor here is chronological: work on non-equilibrium thermodynamic systems was only beginning in earnest around the time of the publication of *Difference and Repetition*, having been a distinctly germinal field throughout the majority of the period of that work's composition. Indeed, the work of Ilya Prigogine, for which the latter received his Nobel prize, and which he and Isabelle Stengers would suggest manifested an important affinity with Deleuze's philosophy – thus planting the seed from which DeLanda's interpretative strategy would grow – was not published until the early 1970s. Consequently, references to key early figures in the development of non-equilibrium thermodynamics are not to be found in the bibliography of *Difference and Repetition*, nor is there any reference to such figures, approving or otherwise, within the body of the text. There are, however, references to figures emblematic of the development of classical thermodynamics (Curie, Carnot, Boltzmann).

The second point to note is that these references are generally speaking critical: Deleuze's discussion of thermodynamics in chapter 5 of *Difference and Repetition* takes the form of a *critique*, particularly of the notion of entropy. It is

important to emphasise, however, that this critique is not straightforwardly a criticism, an attempt at disproof. It is rather a critique in something analogous to the Kantian sense of the term: a delimitation of legitimate and illegitimate usage, an attempt at a clarification of the manner in which a notion can be used without engendering distortion; hence, an attempt to avert or expose *transcendental illusion* engendered by the misapplication or overextension of a concept. How should we understand the implications of this critique for Deleuze's conception of his philosophy's relation to science, and in particular to thermodynamics?

2.1 *Individuation and intensive difference*

First, a brief sketch of the ground covered in the relevant chapter of *Difference and Repetition*. Deleuze opens chapter 5 with the claim that difference is '[t]he reason of the sensible, the condition of that which appears' (*DR*, p. 287/p. 222). What is 'given' in sensible intuition is a manifold of sensible qualities arrayed in a spatially-extended field. Difference, Deleuze wants to claim, is 'that by which the given is given as diverse' (*DR*, p. 286/p. 222). This is the case insofar as '[e]verything which happens and everything which appears is correlated with orders of differences: differences of level, temperature, pressure, tension, potential, *difference of intensity*' (*DR*, p. 286/p. 222 [original emphasis]). Indeed, this notion of "difference of intensity" is a tautology', inasmuch as '[i]ntensity is the form of difference in so far as this is the reason of the sensible' (*DR*, p. 287/p. 222). The upshot of all this is that Deleuze will come to conceive 'intensity as a transcendental principle' (*DR*, p. 298/p. 231). It is from the *ground* of differential intensity (intensive difference) that sensible diversity, the play of qualities and extensions from which the resemblances

and equivalences that will go to make up the conceptualised, representational world of identities, can be extracted.

Through this account of intensity, Deleuze aims to clarify the emergence of actual individuals from the pre-individual relations which constitute virtual (or potential) ideal structures (i.e. Ideas). This is the process of ‘individuation’, ‘by which intensity determines differential relations to become actualised’ (*DR*, p. 317/p. 246). Given ‘[a]n “objective” problematic field’, ‘[i]ndividuation emerges like the act of solving such a problem, or – what amounts to the same thing – like the actualisation of a potential’ (*DR*, p. 317/p. 246). Recalling the account of the Idea given in chapter 4 of *Difference and Repetition*, whereby the Idea is split between its virtual determination and its determination through actualisation, chapter 5 can be seen as taking up the latter half of the Idea’s determination. More specifically, chapter 5’s discussion of intensity and individuation should be seen as complicating the notion of ‘actualisation’ by splitting it into the dual notions of ‘individuation’ and ‘differenciation’, the former being the genesis of an individual and the latter the categorisation whereby it becomes a particular relative to a set of general types.¹⁷

Here, Deleuze takes up two philosophical debates with a long history, concerning individuation on the one hand and the nature of intensive magnitudes on

¹⁷ There is ‘a difference in kind between individuation and differentiation in general’; indeed, ‘[t]he determination of qualities and species [i.e. differentiation] presupposes individuals to be qualified, while extensive parts are relative to an individual and not the reverse’ (*DR*, p. 318/p. 247). Hence, ‘individuation precedes differentiation in principle’, and ‘every differentiation presupposes a prior intense field of individuation’ (*DR*, p. 318/p. 247). Levi Bryant (2008, chap. 8) gives an illuminating account of the importance of this distinction in Deleuze’s philosophy.

the other.¹⁸ The connection he draws between the two develops out of his reading of the work of his contemporary, the philosopher Gilbert Simondon.¹⁹

What is most important for Deleuze in this discussion – bearing in mind the distinction made between problems and their solutions in chapter 4 of *Difference and Repetition* – is to argue that a proper understanding of actualisation requires us not to eliminate this problematic dimension manifested by *intensities*, that ‘[t]he act of individuation consists not in suppressing the problem’, but in expressing it in a manner in which, admittedly, it is no longer *apparent* as problematic (*DR*, p. 317/p. 246).

2.2 *Entropy as ‘image of thought’*

The initial introduction of thermodynamics into this discussion comes in the form of a difficulty. Deleuze wants to treat intensive difference as ‘transcendental’, in the sense that intensive differences would be the genetic conditions of the qualities and extensities encountered in the physical world by our cognitive capacities. The idea of a correlation of any given physical magnitude or quality with some order of difference in intensity, Deleuze suggests, can be found in both ‘Carnot’s principle’ (i.e. Nicolas Carnot’s early formulation of the Second Law of Thermodynamics) and ‘Curie’s principle’ (i.e. Pierre Curie’s Dissymmetry Principle), and hence would seem to be a key feature of classical thermodynamics. And yet, ‘we encounter severe

¹⁸ On debates concerning individuation in the history of philosophy (which belong primarily to the medieval and early modern periods), see Cross (2014). On the history of philosophical debates concerning intensive magnitudes (which, again, are a largely medieval affair and early modern), see Mader (2014).

¹⁹ See *DI*, p. 120 ff./p. 86 ff. See also Bowden (2012).

difficulties when we attempt to consider Carnot's or Curie's principles as local manifestations of a transcendental principle' (*DR*, p. 287/p. 223). These principles do not lend themselves to the notion of intensity as transcendental, insofar as the phenomenon of entropy which they assert to be an inevitable tendency of any thermodynamic system seems to imply a tendency towards the elimination of intensive differences.

Deleuze will suggest that what these principles of classical thermodynamics primarily indicate are the limitations of our capacity to *know* intensity:

We know only forms of energy which are already localised and distributed in extensity [*l'étendue*], or extensities [*étendues*] already qualified by forms of energy. [...] It turns out that, in experience, *intension* (intensity [*intensité*]) is inseparable from an *extension* (extension [*extensité*]) which relates it to the *extensum* (extensity). In these conditions, intensity itself is subordinated to the qualities which fill extensity [...] In short, we know intensity only as already developed with an extensity, and as covered over by qualities.

(*DR*, pp. 287-288/p. 223 [translation modified])

It is as a consequence of this limitation of knowledge – such that, at the level of cognitive representation there is no pure intensity, but only an intensity related to sensible qualities arrayed in a spatially extended field – that we have a 'tendency to consider intensive quantity as *a badly grounded empirical concept* [un concept empirique ... mal fondé], an impure mixture of a sensible quality and extensity' (*DR*, p. 288/p. 223 [my emphasis]).²⁰ 'This is the most general content of the principles of Carnot, Curie, Le Chatelier, *et al.*: difference is the sufficient reason of change only to the extent that the change tends to negate difference' (*DR*, p. 288/p. 223). These principles effectively 'rationalise' or codify the way in which knowledge or cognition is constructed on the condition of the obfuscation of the 'intensive'

²⁰ In speaking of the concept of intensive quantity as badly grounded, Deleuze is alluding to Bergson's (2001, chap. 1) critique of the notion (see *DR*, pp. 308-309/pp. 239-240).

movement of problems. The cognitive mode of thought and experience can operate only by the formation of a certain structure that excludes this movement, or hides it from view.²¹

What Deleuze is referring to in this notion of a difference which engenders a change only insofar as that change negates difference is *entropy*, which we might loosely define as the tendency of thermodynamic systems to become more disordered, tending towards a state of equilibrium, a state without differences of potential in which, consequently, there will be no change without influence from outside the system. As I have already noted, Deleuze's remarks vis-à-vis classical thermodynamics effectively take the form of a critique (in a quasi-Kantian sense) of entropy. It is now apparent how this is the case: it is the principles which define the entropic tendencies of thermodynamic systems which Deleuze takes to obscure the transcendental character of intensity and cause it to appear as an empirical concept, and a poorly 'grounded' one at that. But he will clarify further: in addition to the tendency of the notion of entropy to render intensity 'merely' empirical, there is also a tendency, or we should perhaps say a temptation, to raise entropy itself to the level of a transcendental principle. It is the convergence of these two tendencies that leads Deleuze to label entropy – or, to be more precise, a certain treatment of the notion of entropy, entropy viewed from a certain perspective – 'a transcendental physical illusion' (*DR*, p. 294/p. 228). Establishing the proper limits of the notion of entropy will thus call for 'a certain distribution of the empirical and the transcendental', that is to say a *re*-distribution, so that the transcendental character of intensity can

²¹ I have discussed in chapter 2 how Deleuze conceives cognition to be limited by its representational structure, limits that thought and experience become properly philosophical only by overcoming.

become apparent, along with the restriction of the notion of entropy to its *empirical* use (*DR*, p. 174/p. 133).

It is in relation to this notion of an illegitimate ‘transcendentalisation’ of entropy that Deleuze’s remarks concerning thermodynamics and ‘good sense’ should be understood. Good sense (as I have shown in chapter 2) is the operation of our cognitive faculties which ‘determin[es] the indeterminate object as this or that’, in other words, the operation of categorisation and specification whereby indeterminate particulars as determined by being assigned to general types (*DR*, p. 291/p. 226). This operation, Deleuze continues, ‘grounds prediction’, insofar as it is only in terms of their belonging to *general* types that *past* experiences of particulars can be taken to pertain to the *future* behaviour of other particulars, i.e. particulars of the same type (*DR*, p. 291/p. 225). In chapter 3 of *Difference and Repetition* (‘The Image of Thought’), Deleuze gives an account of the mind’s tendency to ‘absolutise’ the *de facto* parameters of its ‘ordinary’ situation, of everyday thought and perception (which Deleuze suggests, following Kant, is basically *cognitive* in function), in a manner which obfuscates the genesis of cognition from an activity of non-cognitive thinking. (Again, these are themes which have been addressed in more detail in the previous chapter of this thesis.) Good sense, then, is Deleuze’s term for part of the framework of cognitive thought and perception insofar as it has been illegitimately absolutised into an ‘image of thought’.

Bearing these points in mind, in chapter 5 of *Difference and Repetition*, Deleuze claims that we see ‘a strange alliance at the end of the nineteenth century between science, good sense and philosophy’ (*DR*, p. 288/p. 223). Classical thermodynamics, with its ‘themes of a reduction of difference, a uniformisation of diversity, and an equalisation of inequality’, ‘was the powerful furnace of that alloy’

(*DR*, p. 288/p. 223). In this respect, then, Deleuze seems to be suggesting that classical thermodynamic thought participates in the construction of an image of thought which obfuscates a proper grasp of the transcendental.²²

It is important to be clear about the precise nature of Deleuze's critique here. This is not, strictly speaking, a criticism of thermodynamics as a subfield of physical science. '[I]t is not science that is in question', Deleuze insists, insofar as science 'remains indifferent to the extension of Carnot's principle' (*DR*, p. 289/p. 224). The 'extension' in question here is that which transposes the notion of entropy from an empirical, scientific register into that of a *transcendental* principle, and thus makes of it the basis of an image of thought. It is in this latter respect that Deleuze takes the alliance of classical thermodynamics and good sense to signify a 'new sense' of '[t]he words "the real is rational" ', insofar as, having raised thermodynamics to the level of a principle of good sense, it would now be possible to show that 'diversity tended to be reduced in Nature no less than in reason' (*DR*, p. 289/p. 224).²³ Hence the appearance of something like a 'natural' accord between thought's tendency to seek to realise truth and conceptual order in an accurate, final representation of reality and nature's purported tendency towards stability or equilibrium. We see here

²² A clear example of this sort of overextension of the notion of entropy is Freud's (2001) notion of the death drive in 'Beyond the Pleasure Principle', where the principles of classical thermodynamics are amplified beyond their proper scientific remit into something approaching a psychoanalytic *Weltbild*.

²³ Deleuze alludes here to Hegel's notorious phrase from the preface to the *Outlines of the Philosophy of Right*: 'What is rational is actual and what is actual is rational [Was vernünftig ist, das ist wirklich; und das was wirklich ist, das ist vernünftig]' (Hegel 2008, p. 14 [original emphasis]). See Stephen Houlgate's explanatory note (Hegel 2008, pp. 326-327) for a brief defence of Hegel against the apparent quietism or conservatism of this formulation – in the light of which Deleuze's oblique anti-Hegelian allusion seems rather opportunistic.

parallel principles of increasing predictability and a projected end-point at which problematic or intensive elements have been altogether eliminated both physically and in thought.

It is important to emphasise once again in considering these comments that what they make clear is not, primarily, a fundamental hostility on Deleuze's part towards classical thermodynamics, but rather a hostility towards the 'themes', the *thematic*, of thermodynamics and the way in which these are raised to the level of an image of thought. It is against this background, then, that Deleuze's remark should be understood, namely that good sense 'is the ideology of the middle classes' – insofar as they 'recognise themselves in equality as an abstract product', and dream 'less of acting than of foreseeing [*prévoir*], [...] of allowing free rein to action which goes from the unpredictable to the predictable [*de l'imprévisible au prévisible*]', of being 'prescient [*prévoyant*]' – and that *this ideology 'is thermodynamic'* (DR, p. 290/p. 225 [my emphasis]). In describing good sense *qua* ideology as 'thermodynamic', it should be clear that Deleuze has rather definitively left the scientific register in order to employ the term in a looser sense. In this respect, this discussion of thermodynamics as a thematic capable of being extricated from its scientific milieu and redeployed at the level of a characterisation of an ideology or a way of understanding what it means to think rationally is analogous in its handling of scientific concepts to Deleuze's earlier discussion of differential calculus. While the cases are not wholly the same, owing to the different roles played by differential calculus and by classical thermodynamics, there is an analogous *slippage* in which Deleuze moves from a discussion of some scientific concept to the extrication of that concept, or at least the term designating it, from its scientific context; at which point

it comes loose of its moorings and begins to drift as a characterisation of something beyond the limits of its initial remit.

What can be concluded from these passages regarding Deleuze's understanding of the relation between philosophy and (classical) thermodynamics? We can summarise with two points: Firstly, we see Deleuze reinforcing the distinction between a problematic (or equally 'intensive') differential dimension and the covering over of this dimension in its solution or 'expression', a distinction that I have already shown that he draws in relation to differential calculus. Secondly, Deleuze can once again be seen gradually extricating scientific concepts from their scientific register in order to deploy them in characterisations clearly (and at times explicitly) lying beyond the limits of an 'application' of the precise scientific term. The conclusion to be drawn, I take it, from both of these points is that there is a clear – indeed, a fairly deliberate and explicit – line of differentiation in Deleuze's treatment of thermodynamics between a scientific and a philosophical register, accompanied by a certain conception of the possibility of moving from the one to the other in a way which can be either legitimate or illegitimate (i.e. which either contributes to philosophy's critical purpose or consists in the construction of an image of thought).

2.3 *Anticipating nonlinear thermodynamics?*

Those wishing to interpret Deleuze as providing a renewal of ontology in line with the developments in our conception of physical reality facilitated by nonlinear thermodynamics might take from the above discussion a validation of their perspective, insofar as Deleuze's critique of *linear* thermodynamics could be seen to anticipate the developments of *nonlinear* thermodynamics. This is the sort of

contention made by Prigogine and Stengers (1986), who see Deleuze as amongst those philosophers who ‘have “preceded” science’ in its discovery of the need to break with certain epistemic and metaphysical presuppositions proper to ‘classical’ physics (p. 292).

This, however, seems to me ultimately not a helpful way to conceive Deleuze’s engagement with thermodynamics. First of all, because such an approach leads back to the concerns raised in the introduction to this thesis. Namely, if the significance of Deleuze’s philosophy is as a sort of pre-scientific ‘anticipation’ of nonlinear thermodynamics, then why, once a *science* of nonlinear thermodynamics has emerged, do we any longer need such a philosophy? The defender of this reading owes us an explanation of the specificity of philosophy’s contribution, and why therefore the emergence of a science which would replace speculation on the nature of the world with empirical inquiry does not signal philosophy’s loss of purpose. (Analogously, what use is Democritus’ atomism *as a theory about the nature of physical reality* now that we have the Standard Model?)

Furthermore, as I have endeavoured to show, Deleuze is not interested in criticising classical thermodynamics as a theory of the behaviour of physical systems, but rather as a way of thinking amplified into the guiding principles of a ‘worldview’. A point which contributes to the conclusion I want to make, which is that Deleuze’s interest in these scientific conceptual resources is tangential to scientific questions of how most adequately to represent or model physical reality. Consequently, this consideration of Deleuze’s specific engagements with scientific concepts in his early work returns us to the same conclusion I reached both through the contextualisation of Deleuze’s early work in chapter 1 and the consideration of his conception of the limits of cognition and the role of philosophy as critique-

creation in chapter 2: namely, that Deleuze's concerns are simply not the concerns of the sciences, nor is he concerned to bolster or support the latter in some way. Philosophy's task is simply other than that of science.

3 Metaphor, meaning and problems

It seems that these scientific contexts have changed their meaning in the course of their appropriation into Deleuze's philosophy. But this is hardly surprising for two reasons: firstly, Deleuze himself argues that the meaning or sense of a concept is determined by the problematic context in which it is deployed, such that it should be expected that these concepts take on new meanings when redeployed in the context of a new problematic, namely Deleuze's search for a concept of difference; secondly, Deleuze is explicit about the fact that he takes this sort of reconfiguration, or perhaps disfiguration, of concepts to be part and parcel of his appropriation of concepts from the history of philosophy, so that it can legitimately be asked why concepts appropriated from the history of science should themselves be any more 'faithfully' reproduced.

Let us consider each of these points in turn. While Deleuze discusses meaning more fully in *Logic of Sense*, with which I am not concerned here (for reasons outlined in the introduction), he also makes some remarks about meaning in *Difference and Repetition* that are illuminating in the present context.

When we think about semantic meaning, he contends, '[t]wo dimensions must be distinguished': '*expression*', which is 'the dimension of sense [*sens*]', and '*designation*' (*DR*, p. 199/p. 153). This distinction between sense and designation (or reference) is Fregean in origin; although Deleuze does not refer to Frege directly, he does refer to Russell and to Carnap in this connection, both of whom are working

within a post-Fregean framework (*DR*, p. 200 n. 1/p. 322 n. 17). Whilst the designation of a proposition or concept is determined by the objects to which it refers, its sense is determined by the problematic Idea it expresses (*DR*, p. 199/p. 153). Indeed, '[s]ense is located in the problem itself'; it is 'constituted in [...] that set of problems and questions in relation to which the propositions [or concepts] serve as elements of response and cases of solution' (*DR*, p. 204/p. 157). If the meaning of a (seemingly same) concept shifts in the movement from its original scientific context to a philosophical context, this is thus because it is redeployed in the context of a new problematic, specified by a new set of encounters. Insofar as these concepts are extricated from the scientific problems in relation to which they were originally formulated and put to use in relation to the problem of constructing a differential ontology, they cannot, by Deleuze's own lights, strictly speaking be said to be the same concepts any longer, as their sense has changed.

As I have noted above, Deleuze explicitly embraces this transformation of concepts insofar as it pertains to the history of philosophy. 'In the history of philosophy', Deleuze states, 'a commentary should [...] bear the maximal modification appropriate to a double' (*DR*, p. 4/p. xxi). A commentary, to the extent that it is philosophical rather than simply historical, should produce, say, 'a *philosophically* bearded Hegel, a *philosophically* clean-shaven Marx, in the same way as a moustached Mona Lisa' (*DR*, p. 4/p. xxi [original emphasis]). Insofar as philosophy is analogous to painting, according to Deleuze, in being an essentially *creative* activity, 'it needs that revolution which took art from representation to abstraction' (*DR*, p. 354/p. 276). In other words, philosophy does not seek to faithfully reproduce that which it discusses, but to portray it in a new way which succeeds in expressing something of the original but which also renders it

unrecognisable and strange. In this connection, Deleuze (2008a) refers approvingly to Proust's 'protest against an art of observation and description' and 'objectivist literature', according to which the purpose of art is an accurate depiction (p. 22).

This rejection of a simple reproduction of philosophical resources, this insistence that a properly philosophical redeployment of conceptual resources from the history of philosophy will be creative in the sense that it mutates and remakes these concepts is in keeping with the ideas outlined above about changes in meaning tied to the deployment of concepts in new problematic contexts. Deleuze emphasises, however, that this disfigurement of concepts does not produce something wholly unrelated to the original. This is still a work of 'commentary', a quasi-artistic *depiction*. It is not, therefore, wholly arbitrary that these particular resources have been chosen, and some semblance of their original sense remains. In 'Letter to a Harsh Critic', in which Deleuze looks back on his early work from the perspective of the early 1970s, he makes the following (oft-noted) remarks:

[In my early work on the history of philosophy,] I saw myself as taking an author from behind and giving him a child that would be his own offspring, yet monstrous. *It was really important for it to be his own child*, because the author had to actually say all I had him saying. But the child was bound to be monstrous too, because it resulted from all sorts of shifting, slipping, dislocations, and hidden emissions that I really enjoyed.

(Deleuze 1995, p. 6 [my emphasis])

As is clear from the highlighted phrase, something of the original remains, precisely in order that it should be able to illuminate or bring something out in the new context in which it is applied.²⁴ It seems appropriate, despite Deleuze's distaste for the term,

²⁴ Deleuze's remarks on simulacra are no doubt relevant here too, simulacra manifesting – in Gregory Flaxman's (2012) apt phrase – 'a similarity that only *appears* to be faithful' (p. 165). For an illuminating discussion of Deleuze's understanding of the creativity of philosophical thought and its relation to his reading of Plato's *Sophist*, see Flaxman (2012, chaps 3 and 4).

to refer to this effect, whereby the confluence of two spheres of semantic meaning evokes a new meaning, as one of metaphor.

It is in relation to these ideas, then, that Deleuze's use of scientific concepts should be viewed. If these concepts provide 'models' for Deleuze's own concepts, it is insofar as they are *metaphors*: these concepts are deployed in a new context which transforms their sense, at the same time as in the midst of this disfiguration they maintain enough of their original meaning to allow them to be illuminating and non-arbitrary. In this respect, Deleuze's use of the history of science mirrors his use of the history of philosophy.

Conclusion

To draw the present chapter to a close, I will briefly restate the general thrust of the remarks made above, and point the way to the discussion to be undertaken in the next chapter.

This thesis has set out from concerns regarding the plausibility of a certain reading of Deleuze for capturing what is going on in this philosopher's early work. This reading sees Deleuze as responding to a need for the renewal of some of philosophy's most basic concepts in order to take account of the developments in our empirical and conceptual understanding of reality made possible by the sciences.

In the present chapter, I have sought to foreground some difficulties for this reading by emphasising the way in which Deleuze's engagements with mathematical and physical conceptual resources seem to indicate not so much an affinity between his philosophy and the purposes of the scientific fields in question as an appropriation of those concepts into the context of a quite different set of concerns

and problems. Clearly, Deleuze sees in these conceptual resources powerful tools which philosophy can draw upon; but, it would seem, *for its own ends*.

The conclusions I have reached so far in the course of this thesis indicate the way in which Deleuze differentiates between philosophy and science. In the next chapter, I want to consider a different aspect of this differentiation, namely the motivations behind Deleuze's philosophical concern with 'immanence'.

Chapter 4

Monism, Naturalism and Univocity *Immanence in Modern Science and Deleuzian Philosophy*

Introduction

In this thesis, I have been working to determine what kind of relation exists between philosophy and the sciences in Deleuze's early thought. My starting point has been the work of certain theorists who have pointed to Deleuze as the inspiration for a reappraisal of modern science by philosophers in the continental tradition, resulting in a renewed positive attitude towards natural science and a greater proximity between continental philosophy and the sciences. I have sought to place Deleuze's role in this narrative in question by considering some of the ways in which a closer examination of Deleuze's early work puts the idea of an affinity between philosophy and science in that work in question.

So far in the course of the present thesis, setting out from certain concerns regarding what I have termed the 'scientific' reading of Deleuze, pertaining to how properly to delineate between philosophy and science in Deleuze's early thought, I have worked to articulate the discontinuity which I have argued exists between philosophy and science in Deleuze's work from the early 1950s through to the late 1960s. Thus, I have argued that:

- (i) Whilst Deleuze belongs to a ('structuralist') philosophical tendency that seeks to reappraise philosophy's relation to the sciences and that appropriates scientific conceptual resources, he insists on the specificity of philosophy in relation to other disciplines. Furthermore, whilst rejecting the phenomenological conception of philosophy as an excavation of the implicit structure of 'lived experience', he embraces the idea of a central role for sub-conceptual experience in philosophy, and ties the dynamics of conceptual change to conceptual thought's relation to the sensible field, thus distancing himself from more straightforward supporters of philosophy's affinity with scientific culture (chap. 1);
- (ii) Philosophy, for Deleuze, is both 'critical' and 'creative' in senses which place it outside the limits imposed on thought by the exigencies of scientific knowledge, the epistemic and pragmatic functions of which ultimately bind the sciences to certain aspects of representation. Philosophy's more uncompromisingly critical and creative stance is tied to the fact that its task is 'ethical' rather than epistemic or pragmatic (chap. 2);
- (iii) Whilst Deleuze draws on conceptual resources from mathematics and the natural sciences, the status of these concepts is profoundly changed by their transmission from a scientific to a philosophical register (by a movement which I have suggested it is appropriate to terms metaphor). Deleuze is not concerned to draw out the philosophical significance of specific scientific developments, so much as he utilises these

developments as tools in furthering an independent, philosophical project (chap. 3).

What I have been concerned to do in the course of the preceding three chapters, then, is to correct the scientific reading's exaggeration of the continuity between philosophy and science in Deleuze's thought by articulating the *distance* that exists between philosophy's concerns and those of science in Deleuze's early work.

In the present chapter I want to look at one of the fundamental themes of Deleuze's early philosophical project – *immanence* – and consider how this might be seen to relate to fundamental motivations, conditions and assumptions of modern science. I will argue, however, that the sense of immanence that is operative in Deleuze's early philosophy is difficult to square with senses of immanence that we might plausibly associate with science.

1 Immanence and science

Amongst the complex web of themes and concepts characteristic of Deleuze's philosophy, one which may suggest particularly forcefully some affinity with modern science is *immanence*.¹

¹ Miguel de Beistegui (2004, esp. chaps 7-9) is perhaps the scholar who has explored in most detail this connection between Deleuze's ontology of immanence and the metaphysical implications of modern science. While the present chapter will therefore function in some ways as a response to that work, I will approach these themes from a different angle, insofar as I will orientate my discussion of Deleuze's concept of immanence in relation to contemporary Anglophone debates concerning the metaphysical implications of natural science rather than in relation to the sort of Heidegger-inspired account of modern science operative in de Beistegui's work.

Some clarification of terms is already in order here. We should first note that ‘immanence’ is a term used in contrast with ‘transcendence’. Primarily theological notions (at least in the sense most pertinent to their use here), ‘immanent’ and ‘transcendent’ are contrasting qualifications of the nature of God’s relation to the earthly sphere. The immanent world, then, is *this* world, the world in which we, created beings, find ourselves; God, or whatever else, is transcendent in virtue of existing beyond or outside this domain. As it stands, these notions are fairly lacking in content. Without further qualification, they are effectively tantamount to the terms ‘here’ and ‘there’, where the ‘distance’ between here and there is taken to be particularly dramatic. But as I will make clear in what follows, just how we delineate between here and there, between *our* domain of existence and what is supposed to lie outside it, is an important part of the debate about what it would even mean to have an explanation of immanent reality that makes no appeal to a transcendent reality.

The term ‘modern science’ is notoriously slippery. I do not intend, in what follows, to commit myself to any particular historical account of the origins or development of science, as this would be a hugely ambitious project far beyond the limited parameters of the present thesis. What I mean to indicate by the term ‘modern science’ is simply the diverse set of ideas and practices generally associated in contemporary language with the term ‘science’, from the sixteenth century onwards.

It must be emphasised that making claims about ‘modern science’ in this way, where this term is intended to range over a strikingly broad range of ideas and practices in diverse milieux and across a historiographically unwieldy stretch of time, is something we should approach with a fair degree of reticence. The history of science is complex and, perhaps due to the unquestionably central role science has

played in various important but disputed shifts in theoretical perspective from the early modern period onwards, prone to ‘mythologisation’.² However, the main weight of my argument in what follows will not so much be on capturing an accurate picture of science itself, as on giving a fair assessment of some philosophical ideas about the significance of science. I am thus operating at one remove, as it were, from the historiographical questions themselves.

Modern science, one might argue, has been a powerful tool in providing us with explanations of the reality in which we find ourselves – immanent reality – that make no essential appeal to anything transcending it. This is not to claim that the reality that science seeks to explain is not in some way dependent upon another reality, be it divine or transcendental. Nor, as will become significant in what follows, is it to claim that science alone is in a position to exclude transcendent entities. It is rather to claim that scientific explanations do not themselves make reference to entities belonging to a transcendent reality, and seemingly have no need to do so. In providing us with such explanations, science has, according to some, helped to render the transcendent theoretically – and perhaps also morally – obsolete. Indeed, some would argue that the rise and onward march of modern science bears a large part of the responsibility for driving the broader cultural shift of secularisation, which has led many of us to a point where we no longer see or even understand the need felt by many others for something transcending this worldly sphere.

² By which I do not mean that this history is falsified, but rather imaginatively but selectively narrativised for rhetorical effect. I draw here on the notion of ‘mythic history’ developed by Eric Schliesser (2013b), which plays an interesting role in the account he gives of some of the non-cognitive aspects of the history of philosophy (Schliesser 2013a, pp. 213-214).

It is hard to assess this idea of the significance of modern science without some more substantive account of what delineates this world, the immanent world, from its outside. This is because, as I noted above, the terms ‘immanent’ and ‘transcendent’ on their own mean little more than ‘here’ and ‘there’. We need to give some characterisation of what sort of things are not the sort of things one finds ‘here’.

Supernatural entities are prime candidates for a position on the ‘not here’ side of the boundary. But what does it mean to be ‘super-natural’? Above or outside nature. But if ‘nature’ is just the name for immanent reality as explained by science, then to say that scientific explanation makes no reference to supernatural entities risks triviality, as being supernatural would then seem to consist simply in being the sort of entity that finds no place in scientific explanation. Something more substantive seems to be needed.

In substantiating what is meant by the transcendent or the supernatural in claiming that scientific explanations are explanations of immanent reality on its own terms, the most common and least controversial exemplars of the sort of thing excluded from such explanations (least controversial amongst secular philosophers – not at all in society more generally) are God (or gods), angels, demons and other such posits of traditional theistic religion.

It is in this sense of the transcendent or the supernatural – as the divine – that Charles Taylor has highlighted the connection between modern science and immanence. The distinction between ‘the immanent and the transcendent’ (and correspondingly ‘the natural and the supernatural’) depends, Taylor (2007) argues, on a ‘hiving off of an independent, free-standing level, that of “nature”, which may or may not be in interaction with something further or beyond’ (pp. 13-14). Such a

move, he continues, is ‘a crucial bit of modern theorizing, which in turn corresponds to a constitutive dimension of modern experience’ (Taylor 2007, p. 14). By stating that this distinction is distinctly ‘modern’, Taylor (2007) means to indicate that marking such a distinction in such a ‘hard-and-fast’ manner is ‘something we (Westerners, Latin Christians) alone have done’, facilitated by ‘[t]he great invention of the West’: ‘that of an immanent order in Nature, whose working could be systematically understood and explained on its own terms, leaving open the question whether this whole order had a deeper significance, and whether, if it did, we should infer a transcendent Creator beyond it’ (p. 15). In its distinctively modern form, Taylor (2007) argues, ‘[t]his notion of the “immanent” involved denying – or at least isolating and problematizing – any form of interpenetration between the things of Nature, on one hand, and “the supernatural” on the other, be this understood in terms of the one transcendent God, or of Gods or spirits, or magic forces, or whatever’ (pp. 15-16). In this respect, he suggests, such a distinction is largely alien to the philosophy of Antiquity: though ‘this idea had its forerunners in ancient times, with the Epicureans, for instance’, ‘[y]ou couldn’t foist this on Plato, [...] not because you can’t distinguish the Ideas from the things in the flux which “copy” them, but precisely because these changing realities can only be understood through the Ideas’ (Taylor 2007, p. 15); nor on ‘Aristotle, whose God played a crucial role, as pole of attraction, in the cosmos’ (p. 780 n. 17). Thus, according to Taylor, in its modern sense, the distinction between immanence and transcendence is grounded in the possibility of conceiving the autonomy of the former with respect to the latter. It is an immanent order in this sense that scientific explanation seems to be able to provide.

It is not my intention at this point to assess the legitimacy of this narrative. In what follows, I will suggest that there are reasons that we might wish to temper any such narrative,³ as this will be relevant for the question of what sort of affinity might be seen to exist between Deleuze's philosophy of immanence and modern science. Nevertheless, such a narrative is one reason that one might initially see a connection between Deleuze's philosophy and modern science, that is, between Deleuze's call for a rejection of transcendence, and the autonomy of immanence and corresponding obsolescence of transcendence purportedly brought about by modern science.

I have suggested that it is plausible to claim that the order science allows us to discern in the immanent world makes no reference to anything transcendent, where the model of the transcendent is provided by the divine as conceived by traditional theism. This possibility of the autonomy of immanent order has to some philosophers and scientists seemed to lead inevitably to the exclusion of transcendence altogether, to what Taylor terms the 'closure' of immanence. However, it is not a given that science alone is enough to demand such closure; nor, indeed, is it a given that science alone requires any such closure.

In the context of contemporary debates surrounding the 'culture wars' between science and religion, heated polemics have arisen against the idea that modern natural science *alone* entails closed immanence – the latter understood primarily in terms of the exclusion of divine agency. While the tone of these debates is no doubt often polemical, this is not to say that solid arguments are not being meted out. To take a particularly potent example, Taylor (2007) makes a convincing case, on the basis of a broadly phenomenological consideration of the role religious

³ Among them, the reasons Taylor himself gives for questioning the idea that science alone provides reason enough to *exclude* transcendence.

belief has in the experience of the believer, for the view that whilst the pronouncements of modern natural science alone can indeed be understood to falsify certain factual claims made in the stories of religious scripture, claims that have at times in the history of religion played important roles in belief and practice, it is only in conjunction with a set of broader philosophical commitments – importantly, certain moral commitments – that science is in a position to contribute to motivating an *exclusion* of the supernatural from our ontological commitments. Thus, Taylor (2007) argues that while ‘the new science gave a clear theoretical form to the idea of an immanent order which could be understood on its own, without reference to interventions from outside’, insofar as ‘the rise of post-Galilean natural science [...] finally yielded our familiar picture of the natural, “physical” universe as governed by exceptionless laws, which may reflect the wisdom and benevolence of the creator, but don’t require in order to be understood [...] any reference to a good aimed at’, this ‘immanent frame’ ‘permits closure, without demanding it’ (pp. 542-544). While ‘[t]he immanent order *can* [...] slough off the transcendent’, it is still possible ‘to live it as open to something beyond’ without rejecting any scientific claims about the way things are in immanent reality (Taylor 2007, pp. 543-544 [my emphasis]).

Equally debateable is whether science requires any such exclusion of the transcendent, or whether this is rather beyond its proper purview. One might argue that trying to draw such conclusions from scientific evidence constitutes a violation of the epistemic attitude characteristic of modern science. For a case in which such an argument has been made, consider the early modern controversy between Newtonians and Spinozism, where the cautious, sober epistemic attitude modern science solicits the scientist to adopt was seen by those inspired by Newton to tell against drawing the sort of sweeping rationalistic conclusions associated with

Spinoza. Here, the epistemic attitude held responsible for the success of science was seen as polemically pitted against the ‘enthusiasm’ of advocates of atheism and heterodoxy (see Schliesser 2011 and 2012; Taylor 2007, pp. 331-332).

Given these considerations, I think we would be advised to work on the assumption that a commitment to closed or exclusive immanence is a *philosophical* project in excess of a simple confidence in the truth of scientifically validated claims. How exclusive immanence is going to relate to modern science must therefore remain at this point an open question (I will consider some different views on how to answer this question shortly).

It should also be noted that one’s verdict on how exclusive immanence relates to science will have an impact on how one delineates the immanent from the transcendent. If science itself is taken as the index for what counts as immanent, this is going to have a considerable impact on what kinds of things are excluded from immanence. At the same time, there is room for considerable debate on what kinds of things are (or can be, or should be) posited by the sciences.

2 Ontological monism

I will return to these questions and concerns later. Before doing so, however, I should bring Deleuze into the picture. How should the concept of ‘immanence’ in Deleuze’s early work be understood?

As has been noted by other commentators, the notion of immanence, though it is arguably a thread that can be followed through Deleuze’s entire oeuvre, is only named as such in his early work in *Spinoza and the Problem of Expression*.⁴ The

⁴ De Beistegui (2010) argues that ‘the thread which [...] runs through Deleuze’s work as a whole’ is ‘best summarised in the concept of “immanence”’ (p. 5). Kerslake (2009) notes that although ‘[i]n

concept of immanence is largely absent from *Difference and Repetition*, although themes that are grouped under that concept in *Spinoza and the Problem of Expression*, as well as in later work, are explored there under different names.⁵

In this regard, two areas of Deleuze's early philosophy seem particularly pertinent: Firstly, the discussion of the thesis of the univocity of being, which is carried out in *Spinoza and the Problem of Expression* and in *Difference and Repetition*. Although, as noted, 'immanence' is not a concept that receives any real attention in *Difference and Repetition*, a connection is drawn in *Spinoza and the Problem of Expression* between the concept of immanence and the thesis of the univocity of being. Since the latter will be central to the position articulated in *Difference and Repetition*, this can be seen as an indirect appraisal of the notion of immanence.

The second place where the somewhat submerged theme of immanence is discussed in Deleuze's early work is in his discussion of 'Naturalism'.⁶ The notion of Naturalism is one that is also only articulated on a small number of occasions in

Spinoza and the Problem of Expression (1968), Deleuze presents the notion of immanence [...] as waiting for Spinoza to liberate it from the transcendence implied in traditional conceptions of emanation', and correspondingly 'presents Spinoza as reclaiming the thesis of univocity of being', peculiarly, 'in *Difference and Repetition*, published in the same year, where eternal return is presented as the completed "realization" of the univocity of being [...], the concept of immanence is hardly discussed' (210).

⁵ The notion of immanence first appears in Deleuze's work in his 1953 study of Hume. There, he opposes a 'transcendental critique' to an 'empirical' or more properly speaking empiricist critique, where the latter is conducted from 'a purely immanent point of view' (Deleuze 1991, p. 87). While the broadly Husserlian notion of immanence embraced in the Hume book is not unrelated to Deleuze's subsequent usage – his understanding of *empiricism* being the common link – the exploration of the precise nature of this connection will be left for another occasion.

⁶ I will capitalise 'Naturalism' when I am speaking about Deleuze's usage in order to distinguish this usage of the term from other, more contemporary usages also under discussion in this chapter.

Deleuze's early work, namely in his essay on Lucretius and, again, in *Spinoza and the Problem of Expression*.⁷ It is, as with the univocity of being, in this context of a discussion of Spinozism that we get a sense of the relation between Naturalism and immanence.

While Deleuze's discussions of univocity and Naturalism touch on similar topics, his discussions of Naturalism highlight some aspects of his philosophical orientation which are not as clear in his discussions of univocity and which can have a bearing on the relation between his philosophy and natural science. It will therefore be valuable to consider both concepts – the univocity of being and Naturalism – in order to make a full appraisal of how this early formulation of the core Deleuzian concept of immanence relates to ideas of immanence that one might associate with modern natural science.

2.1 *The univocity of being*

I will first consider Deleuze's treatment of the thesis of the univocity of being.

The debate concerning the univocity of being which Deleuze reinvigorates ('repeats') is primarily a medieval debate, but one with roots in the problems of Aristotle's logic and metaphysics. Although Deleuze formulates a historical narrative accounting for the emergence and development of this debate and of the concept of the univocity of being, the complexities of this narrative can be bracketed for present purposes.⁸ For now, it is sufficient to note that Deleuze enters into the medieval

⁷ There is, in addition, a foretaste of certain aspects of this notion of Naturalism in Deleuze's 1956 review of Ferdinand Alquié's *Descartes, l'homme et l'œuvre (FAD)*.

⁸ The history Deleuze provides revolves around (1) the emergence of the Aristotelian problematic of the equivocity of being in response to certain Platonic considerations; (2) the development of the

debate, and traces what he takes to be its modern conceptual aftermath, in order to read these considerations back into the original Aristotelian problematic (and its Platonic prehistory). He does this, firstly, with a view to discerning the full significance of the problems that emerges from certain aspects of Aristotelian metaphysics; and secondly, he does this in order to try to conceive of an alternative to the Aristotelian ontological orientation that opens up the space for these problems in the first place.⁹

I will initially give just the broadest and most basic definition of the univocity of being, as it is this definition which lends itself most readily to comparison with the ideas of immanence often associated with modern science. I begin in this manner in order to get a sense of the motivations one might have for making this connection. Having done this, however, it will be necessary to return to this definition and consider some further facets of univocity as Deleuze conceives it

Aristotelian problematic in the medieval period in relation to theological questions regarding the nature of God's transcendence; (3) the emergence of the notion of the univocity of being from successive attempts to reconceive some sense of God's proximity to His creation (a) in the Neoplatonism of late antiquity, (b) in the medieval thought of Duns Scotus, (c) in the 'expressivism' of Renaissance mysticism and finally (d) in the pantheistic monism of Spinoza; and (4) the 'realisation' of the full atheistic, immanentist significance of the univocity of being in more contemporary thinkers such as Heidegger (who ultimately fails to provide a coherent formulation) and Nietzsche (who, by Deleuze's estimation, finally succeeds). For a thorough survey of this history, see de Beistegui (2004, esp. chap. 1 and chap. 7, §1) and (2010, chap. 2).

⁹ I draw here on de Beistegui (2004): '[A]lthough the Aristotelian problematic of the one sense of being and its many significations comes subsequently to be equated with the problematic concerning God and His creatures, it is with the former that Deleuze is primarily concerned. In other words, Deleuze "uses" Scotus to return to the opening, Aristotelian problematic, and specifically to the way in which the Aristotelian "solution" [whereby being is said in many ways, but always with reference to the notion of οὐσία] arises out of a division of the real into kinds, specific differences, and individuated particularities, and in such a way that differences can be identified and isolated only at the level of species, thus subordinating the latter to the work of identity or the concept' (p. 236).

in its fully ‘realised’ form, and some consequences of Deleuze’s formulation. This final formulation incorporates a number of elements and concerns that, I will argue, at the very least raise problems for any association we might want to draw between immanence *qua* univocity of being and the sort of immanence we might associate with modern science. (These concerns signal the divergence of interests between science and Deleuze’s philosophy that I have been examining throughout this thesis.)

The core idea of the univocity of being, then, is that there is only one sense of ‘being’. Everything that can be said to *be* must be taken to be in the same sense. As Deleuze states, ‘being [...] is said *in a single and same sense*’ of everything of which it is said (*DR*, p. 53/p. 35 [original emphasis]).

With what sort of view is this position to be contrasted? Of course, with the view that there is more than one sense of being, more than one sense in which things can be said to be. This view can be referred to – following Jason Turner’s (2010) defence of such a thesis – as ‘ontological pluralism’; the defender of the univocity of being can correspondingly be referred to as an ‘ontological monist’.¹⁰ Ontological pluralism can be thought of as the view – to use Adrian Moore’s (2015) helpful formulation – that there are ‘things so different in kind’ that ‘our very talk of the “being” of one such kind ‘has to be understood differently from our talk of the “being” of another (p. 2). What sort of motivations might one have for positing such radical differences?

To point to the most immediate answer Deleuze considers: one might have *theological* motivations for positing such a difference. And indeed, just this sort of motivation can be seen in the medieval debates from which Deleuze draws the

¹⁰ See also McDaniel (2009) and (2010).

concept of the univocity of being. The idea here is that the difference between the being of God and the being of His creatures might be a sufficiently drastic difference in kind that the two cannot be said to *be* in the same sense as one another.

At its most extreme, this might be formulated as the view that insofar as both God and creatures can be described as being or existing, the term ‘being’ is simply *equivocal*, used in two distinct and unrelated senses with respect to these two fundamental kinds of entity. It may be that this is what is required in order that ‘the transcendence of the divine being be maintained’ (*SPE*, p. 161/p. 177). This is the line of thought that Deleuze suggests is followed to the end in the tradition of negative theology: given that all we humans have access to in order to understand what it means for something to be is our own existence and the existence of things not radically different from us in their kind of being, it is a consequence of God’s absolute transcendence that His being be strictly unintelligible for us, and that any intuition we might have of that being be ‘ineffable’ using the language we use to talk about our own being.¹¹

This negative-theological stance is, however, an extreme. A more agreeable position, and the position against which Deleuze is most concerned to inveigh, posits not so much an equivocity of being as an *analogy* of being. This is the view that, although there is more than one sense of ‘being’, there are relations of analogy between these senses. Thus, while ‘being’ may be said in more than one sense, it is (to again borrow an apt phrase from Moore (2015)) ‘both natural and warranted’ that the same term be used for all of these different senses (pp. 14-15). So, to take the theological case, the suggestion would be that although God’s transcendence is such

¹¹ For Deleuze on negative theology and its opposition to ontological monism, see *SPE*, pp. 44-45/pp. 53-54, p. 150/p. 165, pp. 156-157/pp. 172-173 and p. 161/p. 178.

that we cannot strictly speaking say that He *is* in the same sense that we can say that we and the things we find around us *are*, it is natural and warranted to speak of ‘being’ in both instances, since there is something analogous between these different ways of being. It is in virtue of this analogy that they are both, precisely, ways of *being*. The unity of being, in virtue of which everything that *is* can be said to belong to the same domain, is a unity of analogy.

Whilst the formulation of such a view in terms of an analogy between the being of God and the being of His creatures is properly attributable to the innovations of Ibn-Sīnā and Aquinas in the eleventh and thirteenth century respectively, one can already see in Aristotle a sensitivity to the need for a position between equivocality and univocity (or homonymy and synonymy) when it comes to ‘being’, if we are to be able to carry out the task of ontology and say something substantive about being *qua* being.¹² The term ‘being’ should be understood as a case of ‘paronymy’, according to Aristotle, analogous to the case of ‘health’:

There are many senses in which a thing may be said to ‘be’, but they are related to one central point, one definite kind of thing, and are not homonymous. Everything which is healthy is related to health, one thing in the sense that it preserves health, another in the sense that it produces it, another in the sense that it is a symptom of health, another because it is capable of it. [...] So, too, there are many senses in which a thing is said to be, but all refer to one starting-point [...]

(Aristotle 1984a, p. 1003a)

We might also consider Aristotle’s (1984b, pp. 1097a15-1098b8) treatment of the different senses of ‘good’ in the *Nicomachean Ethics*. ‘Good’, Aristotle argues (against Plato), does not have one single sense, but is rather used in many different senses depending on what it is that we are describing as good. A good joke is not good in the same sense that a good bicycle is good, or a good carpenter, or a good

¹² See de Beistegui (2004, pp. 235-236).

meal, and so on. But it seems plausible, nevertheless, to suggest that there is some commonality here in relation to which it is natural and warranted that the same term, ‘good’, be used in each case. The thought behind the analogy of being is that something similar is true of ‘being’.

In the theological context of the medieval debate concerning the equivocity or univocity of being, this intermediate position allows God’s transcendence to His creatures to be preserved without placing the divine at such a distance from the profane that no relationship between the two can remain and nothing can be said about the being of beings in general. For Deleuze, however, even this more measured attempt to preserve the idea of divine transcendence through a moderated ontological pluralism is unacceptable. I will return to the reason why he finds it unacceptable subsequently. For now, it is simply necessary to note that Deleuze embraces a thoroughgoing ontological monism, and that an important aspect of the project of his early philosophy is to think through all the demands and consequences of such a monism.

2.2 *Ontological monism and contemporary metaphysical naturalism*

I will now return to my earlier discussion of immanence and science. How do the points made in the previous section relate to this discussion?

The first thing to note is that Deleuze’s ontological monism endorses – indeed, can be seen as a statement of – exclusive or closed immanence. I have already suggested that it is best not to take for granted that science implies or demands any such closure of immanence, whilst nonetheless acknowledging that various philosophical orientations might have reasons to associate science with such

closure. The question it seems most pertinent to ask, then, is how Deleuze's ontological monism is orientated in relation to such projects.

In the contemporary jargon, what I have so far described as the view that immanence is exclusive or closed tends to be termed 'naturalism', or, more specifically, 'ontological' or 'metaphysical naturalism'. I will use the latter term in order to avoid to as great an extent as possible any confusion with the term 'ontological monism' which I have been using to describe Deleuze's endorsement of the univocity of being. Metaphysical naturalism could be glossed as the view (to make use of Philip Pettit's (2009) concise formulation) that 'there are only natural things' (p. 542). While this might sound like a more substantive claim than the claim that immanence is closed, this is not the case. As I have already suggested with regard to 'supernatural', the term 'natural', in the context of the claim that there are only natural things, is effectively simply the claim that everything that there is, is in some sense of fundamentally the same kind. In the absence of any further clarification of what this kind is, this is all that is stated. But of course, just as I have noted with regard to 'immanent', how exactly the notion of 'natural' is to be made more substantive is a large part of the debate about what naturalism, or closed immanence, entails, and what sort of relation it bears to science.

Within the logical space of the contemporary Anglophone debate about naturalism, the weakest, least controversial position would perhaps be a form of anti-supernaturalism making little or no reference to science, a simple exclusion of supernatural entities.¹³ This would be, in effect, little more than the position as stated

¹³ While some philosophers would argue that it is precisely science which has provided the motivation to reject such entities, so that this anti-supernaturalism is incoherent without some appeal to the authority of science, I have already noted that it is an open question precisely what role science has

above, perhaps with some qualification of what counts as transcendent or non- or supernatural by stipulating certain kinds of entities that are fairly uncontroversially regarded as spurious in a contemporary secular context. Such exemplars would certainly include God, but might also include more specific examples such as – to point to a list compiled by Mario De Caro (2010) – ‘spiritual entities, Intelligent Designers, immaterial and immortal minds, entelechies and prime movers unmoved’ (p. 367). Without some stronger constraint on membership of the natural, however, we might well question whether such a naturalism *qua* mere anti-supernaturalism is going to be restrictive enough to reflect a sense of the restriction of existence to the natural that would have much to do with the sciences. Certainly it seems that a great many contemporary philosophers wanting to draw some close association between their naturalism and science are keen to push for a more restrictive conception of the natural. Furthermore, it might well seem that in the context of contemporary mainstream Anglophone philosophy (at least outside the distinctly ‘niche’ enclave of philosophers of religion¹⁴), anti-supernaturalism of this minimal sort seems nigh on trivial, in the sense of being a point of easy consensus amongst a largely secular community (and not one in which consensus is easy). Most importantly, endorsing such a position does not seem to be a mark of a philosophical orientation with any

had in the degradation of belief in the supernatural. It has no doubt had some effect, and arguably a considerable effect at a broad cultural level, but this does not imply that philosophers adopting the anti-supernaturalist view described here must be motivated to do so by science.

¹⁴ As David Bourget and David Chalmers’ recent exercise in the sociology of philosophy has indicated the statistical prevalence of theism amongst the population of professional philosophers of religion is decidedly out of sync with the clear dominance of atheism when the views of all participants in the survey are taken into account. See <<http://philpapers.org/surveys/>> for results of Bourget and Chalmers’ survey; see also Bourget and Chalmers (2013) for a discussion of the results.

great concern to restrict the natural sphere in accordance with the needs or the demands of natural-scientific inquiry.

This becomes apparent once we start to consider more controversial cases, such as (to borrow a list from De Caro (2010) again) ‘values, abstract entities, modal concepts, or conscious phenomena’ (p. 367). With regard to these and other such philosophically controversial phenomena, naturalistic positions that make appeal to science oftentimes do so in order to justify an exclusion of certain kinds of entity from the parameters of an exclusively ‘natural’ reality.

When I refer to positions that appeal to science to qualify their naturalism, I have in mind what I will call ‘scientific naturalism’, the view that our account of what falls within the domain of the natural ‘should be shaped by science, and by science alone (so that a complete natural science would in principle account for all accountable aspects of reality)’ (De Caro 2010, p. 368).

It is worth noting that one might accept that everything that is natural is explicable by science without accepting that ‘science’ here refers to *current* science. We see this in the thought of those philosophers, such as John Searle (2007), David Chalmers (1996) or Galen Strawson (2008), who claim that at some future stage natural science will have to find a way to explain consciousness that is neither reductive nor eliminative if our scientific understanding of immanent reality is to be wholly adequate. However, such positions, insofar as they argue for a reform of current science on the basis of beliefs about what kinds of things we have reason to posit, are not instances of scientific naturalism in the above sense. This is because their view of what there is is not shaped by science alone, but by other commitments, such that these other commitments can be taken to guide reform of scientific ideas and practice. Such positions might be termed instead ‘liberal naturalisms’ (De Caro

2010), since they generally speaking are happy to embrace the entities the existence of which is suggested to us by current natural science, but *also* further entities the status of which is less clear.

Full-blooded scientific naturalism, then, is generally a relatively restrictive position. For the scientific naturalist, the appeal of metaphysical naturalism is its parsimony and restraint. Not that such a position is restrained in its revisionary ambitions. When science alone dictates our account of what there is, a great deal of revision of the categories of our so-called ‘folk metaphysics’ is going to be necessary.¹⁵ And it is just such activity with which the great many ‘naturalising *X*’ projects that populate the contemporary philosophical field are occupied; namely, trying to discern how ‘intuitive’ positions need to be revised in order to be accommodated by a scientific image of the world.

2.3 *Deleuze as ‘liberal naturalist’?*

Where, if anywhere, does Deleuze’s ontological monism fit into this picture? In the context of the logical space of naturalistic positions sketched briefly above, Deleuze may well strike us as a defender of the inclusiveness of the natural, as some species of ‘liberal’ naturalist. This impression is only reinforced by considering the second

¹⁵ The idea of ‘folk metaphysics’ is one that has developed out of a more general idea of ‘folk theories’, understood to be ‘untutored people’s (often implicit) theories about various features of the world’ (Livengood and Machery 2007, p. 107). This notion of folk theories is generally speaking deployed by naturalistic philosophers with the intention of distinguishing between scientific and folk theories or concepts. The idea of folk metaphysics is one that has begun to gain purchase in recent years due to the growing interest in experimental philosophy and its application of social-scientific methods to traditionally philosophical questions.

aspect of Deleuze's early treatment of the theme of immanence, namely his Naturalism. Let us briefly outline some pertinent aspects of the latter position.

We first see hints of the position Deleuze will identify as Naturalism in 1956, in the review of his teacher Ferdinand Alquié's work, *Descartes, l'homme et l'œuvre*, published in the literary review *Cahiers du Sud*. In this review, Deleuze discusses Alquié's reading of Descartes, and one can see taking form components of the Cartesian, mechanistic view of nature that he will criticise in print twelve years later in *Spinoza and the Problem of Expression*. Deleuze was working on the secondary doctoral thesis that would be published in 1968 as *Spinoza and the Problem of Expression* already in the mid-1950s, and under the supervision of Alquié, who would teach on Spinoza in 1958 and '59 – so it is plausible that Deleuze's reading of Alquié on Descartes will have been formative for his later critique of Cartesianism (see Dosse 2010, p. 110).

In the review, Deleuze foregrounds how nature, conceived 'as a spatial, actual and mechanical system' by Cartesian physics, is thereby 'deprived of its thickness [*épaisseur*], of its potentialities [*virtualités*], of its qualities, of its spontaneity' (*FAD*, p. 474). But nature alone cannot therefore be sufficient, he continues, as this 'thickness' constitutes the very 'Being' of the real. He cites Alquié: 'one should not deprive the world of being without discovering elsewhere this being the evidence of which is primary in every mind' (*FAD*, p. 474). It is in order to reintroduce this dynamism into a world seemingly depleted of it that Descartes turns to mental and ultimately divine substances: 'nature will be subordinated to the *cogito*, and the *cogito* subordinated to God, from whom its being is derived' (*FAD*, p. 474). In this way, '[t]he world rediscovers its substantiality', but only by

appealing to kinds of being that cannot be accommodated by the domain of the natural (*FAD*, p. 474).

Deleuze does not adopt a particularly critical stance towards Alquié's Cartesianism in the 1956 review, but in 1968, when the thesis he had worked on under Alquié's supervision was published, we see him take his distance from the position sketched in the review, characterising the 'common project' of 'the Anticartesian reaction' undertaken by Spinoza and Leibniz as 'a new "naturalism"' (*SPE*, p. 207/p. 227).

This Naturalism is explicitly formulated against the Cartesian understanding of the 'venture of a mathematical mechanical science' which, Deleuze contends with reference to Alquié, 'dominated the first half of the seventeenth century' (*SPE*, p. 207/p. 227). The effect of Cartesian physics 'was to devaluate Nature by taking away from it any virtuality or potentiality, any immanent power, any inherent being', an effect Cartesian *metaphysics* sought to mitigate, supplementing inert nature by positing 'Being outside Nature, in a subject which thinks it and a God who creates it' (*SPE*, p. 207/p. 227). Here we see a reprise of the account of Cartesianism outlined in the 1956 review (and with explicit reference made to Alquié). The anti-Cartesian Naturalist project, then, 'is a matter of re-establishing the claims [*les droits*] of a Nature endowed with forces or power [*puissance*]', 'restoring to Nature the force of action and passion [*pâtir*]' (*SPE*, p. 207/p. 228). Where Cartesian nature is not sufficient without the super- or extra-natural supplement of human and divine subjectivity, Naturalism seeks to conceive nature as 'sufficient unto itself'.¹⁶

¹⁶ I take this latter phrase from Deleuze's 1954 review of Jean Hyppolite's *Logic and Existence* (Hyppolite 1997, p. 193). In fact, Deleuze refers not to *nature* here, but to 'this world', although I

There are other aspects of Deleuze's characterisation of Naturalism to which I will return later (particularly its *ethical* dimension). For now, I simply want to note that it is easy to read Deleuze as pushing here for a more inclusive naturalism, one that does not index 'naturalness' to an overly restrictive mechanistic materialism. And indeed, various commentators have read Deleuze's call to incorporate into our conception of the natural some conception of 'power', 'force' or 'inherent being' in excess of mechanism as some form of 'vitalism'.¹⁷ Though interpreters keen to defend Deleuze's 'vitalism' have tended to emphasise that 'Deleuze is not vitalistic in any technical sense of espousing a non-material intelligent guiding force, a "vital principle" or "life force" or "entelechy"', it is nevertheless argued that his vitalistic conception of nature eschews "mechanism", that is, the law-bound repetition of physical events', because it is a consequence of a mechanistic conception of nature that 'creativity [is] shuffled off from dead matter into some spiritual realm' (Protevi 2012, pp. 247-249).¹⁸ If we are to avoid the emergence of this opposition between the blind mechanism of matter and the creative spontaneity of the mind that gives it meaning, the thought runs, then nature, that is to say, matter itself, must be

take it that no significant difference in meaning is implied (Hyppolite 1997, p. 193). '[T]here is no "beyond" of the world', he also states (Hyppolite 1997, p. 193).

¹⁷ This is a term Deleuze himself encourages later in his writings. In 1988, in an interview with Raymond Bellour and François Ewald for the literary review *Magazine Littéraire*, Deleuze (1995) suggests that 'everything I've written is vitalistic' (p. 143). With this remark, no doubt intended as much to provoke as to describe, he means to indicate that his work explores 'the power of nonorganic life', a life that is 'more than personal' and which finds expression in the 'cracks' wrought by the work of art (be it visual, musical or literary – with the implication that philosophy, should it succeed in being genuinely 'vital' in this 'nonorganic' sense, would fall into the category of literary art) (Deleuze 1995, p. 143).

¹⁸ See also Ansell Pearson (1999) and Colebrook (2010).

conceived as ‘autonomous, self-constituting, and creative’ (as something akin to ‘the *natura naturans* of Spinoza or the will to power of Nietzsche’) (Protevi 2012, p. 249). Connecting these themes to Deleuze’s discussion of ‘larval subjects’ in chapter 2 of *Difference and Repetition*, Deleuze is likewise read as a panpsychist, with mindedness treated as an irreducible feature of all matter – essentially a different way of phrasing the same, vitalist thesis (see Protevi 2013, chaps 8 and 9).

Here we see an attempt to situate Deleuze’s Naturalism clearly in the liberal naturalist camp of the contemporary debate about naturalism.¹⁹ This is not done in a way that eschews science, but has more in common with those philosophers who proselytise for a reform of science to render it more open to the irreducibility of mind, life and creativity.²⁰ As I have already noted, however, although such a liberal naturalism need display no hostility towards science, it does at least imply a metaphysical orientation according to which science is not the only thing shaping our account of what there is. This certainly does not seem to be a position motivated by the desire to let the claims of current science discipline metaphysical speculation.

¹⁹ Panpsychism being precisely the sort of claim liberal naturalists are eager for a more inclusive conception of naturalism to accommodate. See Strawson (2008) and Chalmers (1996).

²⁰ I will not take up the question here of the soundness of the reasoning that lies behind the defence of this neo-vitalism. I will simply note my concern that this view that a purely ‘mechanistic’ account cannot do justice to mind, life and creativity, so that the latter must instead be thought of as irreducible phenomena, risks failing to appreciate the power of Darwinism as an explanatory model for how seemingly (or even perhaps really) purposive activity and the proliferating diversity of biological forms and functions can arise *mechanically* in precisely the sense indicated above, namely through ‘the law-bound repetition of physical events’ (see Dennett 1995). Thus, the project of reconceiving ‘nature’ in such a manner as to salvage ‘creativity’ from the ‘dead matter’ that would fate it to either elimination or mystification seems to me grounded in an evasion of a thoroughgoing confrontation with the full philosophical significance of Darwinism. For a dissenting view, see Ansell Pearson *et al.* (2010, §6) and Miquel (2010). This is, however, an argument for another occasion.

Where have I arrived so far? In trying to discern how Deleuze's commitment to closed immanence might relate to a notion of closed immanence associated by some philosophers with modern science, I have begun to situate Deleuze in the context of contemporary debates concerning how properly to formulate closed immanence (or naturalism) and its relation to science. Considering in outline Deleuze's two early formulations of closed immanence – the univocity of being and Naturalism – I have so far suggested that Deleuze's is a fairly minimal, liberal and unrestrictive position, operating with a broad and inclusive conception of the natural. This seems to place him in the same camp as those philosophers – liberal naturalists – who do not see naturalism as a philosophical *consequence* of natural science, but rather as an independent philosophical commitment with potential consequences *for* natural science. In particular, there seem to be controversial phenomena, often controversial because their place in contemporary scientific theorising is unclear, which such liberal naturalists maintain independent philosophical reasons for positing, with the consequence that they encourage science to find a place for these phenomena rather than taking science as requiring the philosopher to find ways to eliminate such phenomena.

Something that should give pause, however, is that the way in which the clash between liberal and scientific naturalism is set up in the contemporary debate is such as to put in question Deleuze's alignment with the former pole of the debate. As De Caro (2010) notes, a 'point of general disagreement between scientific and liberal naturalists' is 'how great a role [to give] to the concepts of the so-called [...] "manifest image"' (p. 372). Here, De Caro refers to Wilfrid Sellars' (1963) influential distinction between 'the *manifest* and the *scientific* images of man-in-the-world' (pp. 4-5 [original emphasis]), or between the self-image we derive from 'the

framework of sophisticated common sense' and from that of 'theoretical science' respectively (p. 19). De Caro (2010) understands liberal naturalism's attempt to maintain a naturalism in which the boundaries of the natural are not determined by science as an attempt 'to vindicate the agential perspective [i.e. the manifest image] as a whole, by proving that [its] concepts (or at least most of them) are legitimate, necessary, ineliminable, and that they cannot be reduced to scientific concepts' (p. 374).

Although some have read Deleuze's vitalism or panpsychism as an example of just such a project,²¹ in my estimation Deleuze seems a poor match with this genre of motivations for liberal naturalism. Furthermore, I want to argue that such readings fail to grasp how Deleuze's concern with ontological monism diverges from the dynamic of the contemporary naturalism debate about how metaphysically restrictive closed immanence ought to be and what role science has to play in determining the nature of this restrictiveness. The latter debate goes back and forth between different views about which kinds of entity ought to be privileged or prioritised as starting points in relation to which to orientate theorising about what kinds of entities can be taken to exist. The scientific naturalist takes the commitments of the natural sciences as her guide, while the liberal naturalist does not want to reject the manifest image as a privileged starting point for philosophising. The whole dynamic of this debate, however, cuts against the view Deleuze is trying to articulate as ontological monism.

²¹ John Protevi (2012) seems to place Deleuze in something like this bracket. Another interesting case is Ray Brassier (2007, p. 162 ff.; 2008), who condemns Deleuze from the perspective of scientific naturalism for his purported anthropocentrism, his vitalism and panpsychism, privileging the manifest image over the scientific image. I will note the key problem with Brassier's reading of Deleuze later, as it will become apparent in the course of my examination of why Deleuze does not fit comfortably with the sort of liberal naturalism described above.

This will become apparent once I have returned to Deleuze's discussion of the univocity of being and explored in more detail (i) his motivations for endorsing ontological monism and (ii) the fully developed form of the position that he endorses. In the light of this more nuanced understanding of Deleuze's concerns, it will become apparent that, while it is true that Deleuze is not a scientific naturalist, nor does he fit comfortably with the sort of motivations that are generally evident amongst contemporary liberal naturalists.

3 Ontological monism and differential ontology

I have noted that Deleuze's ontological monism seems to some readers to come close to a liberal naturalism, or even to a bare anti-supernaturalism which, in a largely secular context such as that of the contemporary Anglophone philosophical community, risks appearing trivial, or at least uncontroversial. For Deleuze, however, ontological monism is far from trivial, as becomes apparent once one explores in more detail what he takes to be necessary for ontological monism to be fully thought through. Indeed, in a lecture course at Vincennes, Deleuze (1974) will go so far as to say that univocity is 'the strangest thought, the most difficult to think' (no pagination). Following Nietzsche, Deleuze sees transcendence as something that permeates our thought, and which will be expelled only with great difficulty and at great cost to the ways in which we are accustomed to thinking.²² He will go so far as to suggest that ontological pluralism has its roots in the structures of thought and

²² 'After Buddha was dead, they still showed his shadow in a cave for centuries – a tremendous, gruesome shadow. God is dead; but given the way people are, there may still for millennia be caves in which they show his shadow. – And we – we must defeat his shadow as well!' (Nietzsche 2001, §108)

experience that constitute our identity as subjects of knowledge, such that an excision of the extra-natural will require us to give up what seems nearest to us, the coherence and persistence of our own selfhood.²³ It is in this sense that Deleuze contends that '[m]an did not survive God [*l'homme n'y survit pas à Dieu*]' (*DR*, p. 1/p. xix).²⁴

To clarify what Deleuze is driving at here, it is necessary to go back to his account of the univocity of being and bring out in more detail his reasoning and motivations. I have noted that, whilst he takes his cue from the medieval debate concerning the status of God's being in relation to the being of His creatures, Deleuze wants to trace this debate back to its roots in Aristotelian metaphysics. Deleuze sees ontological pluralism as a natural consequence of internal problems within the Aristotelian metaphysical edifice, and the analogy of being as a patch, that is, an attempt to accommodate the unity and universality of being within the constraints generated by the system in place. Arriving at ontological monism, and thereby finally excluding the transcendent, will thus require us to exit from the framework of Aristotelian metaphysics, something which, according to Deleuze, is far easier said than done given how deeply such a metaphysical framework sits in our thought.

²³ It will be necessary in what follows to bear in mind my discussion in chapter 2, where I explained Deleuze's view of representational structure as both the structure of cognition and constitutive of our identity as subjects of cognition. As I will show, Deleuze takes ontological pluralism to be rooted in this representational structure.

²⁴ Here, Deleuze echoes Foucault's (2002) influential sentiment from three years prior: 'Nietzsche rediscovered the point at which man and God belong to one another, at which the death of the second is synonymous with the disappearance of the first, and at which the promise of the superman signifies first and foremost the imminence of the death of man' (p. 373).

Let us consider how Aristotelian metaphysics generates ontological pluralism.²⁵ The aspect of Aristotelian metaphysics that interests Deleuze in this connection is its division or distribution of reality into a hierarchical structure of particular individuals subsumed under species that are in turn subsumed under genera.²⁶ Deleuze states that this hierarchy can be thought of as a way of conceiving ‘the manner in which being is distributed among beings [*l’être se distribue aux étants*]’ (*DR*, p. 365/p. 285), qualifying it as a ‘sedentary distribution’ of being (*DR*, p. 361/p. 282). The problem that generates ontological pluralism as its solution arises from the question of where to situate being in such a sedentary distribution.

What do I mean by ‘where’ to situate being in a sedentary distribution? Being, it seems plausible to say, is the most universal ‘property’ in the sense that it can be attributed to everything that is. Consider the aforementioned Aristotelian hierarchy, consisting of particulars grouped into species which are in turn grouped into genera: insofar as the hierarchy in question is precisely a hierarchy qualifying the nature of *beings*, it seems that ‘being’ must range over all the beings included in the hierarchy. Being, then, seems to be the highest genus, and thus the most general category (where ‘category’ is a term for the highest, i.e. most general, genera).

²⁵ It is not important for my purposes here whether Deleuze has presented a textually defensible reading of Aristotle. In this respect, ‘Aristotelian metaphysics’ is just a convenient shorthand for a set of views that I will define with reference to Deleuze’s presentation, without appealing to Aristotle’s texts.

²⁶ Again, see chapter 2 of the present thesis, where I relate this structure to Deleuze’s talk of ‘representation’.

However, here problems begin to arise. First of all, considered as the highest genus, it seems to be impossible to define what being is.²⁷ This is because defining what something is in the context of a sedentary distribution involves distinguishing it from something else with which it shares its genus but not its species, thus locating it in the hierarchy of specific differences. ‘Being’, defined as the highest genus, has no genus under which it is subsumed and in relation to which it can be differentiated as but one species amongst others. Ontology, as a discourse on being *qua* being, seems therefore to be disbarred.

Secondly, and perhaps more pressingly, treating being as the highest genus also generates problems relating to the being of specific differences. As Somers-Hall (2012b) notes, within a sedentary distribution, ‘a difference cannot be the same kind of thing as what it differentiates’, because ‘[i]f it were, then the question would arise of how we differentiate the difference itself from the class of things it is a difference of’ (p. 339). In the case of being *qua* highest genus, this is problematic if we want to say that the differences that divide the genus ‘being’ also *are*, since this would require that these ‘differences [...] be of the same type as the genera they differentiate’ (Somers-Hall 2012b, p. 339). This, as Deleuze illustrates with reference to the definition of a human being as a rational animal, would be ‘as if animal was said at one time of the human species, but at another of the difference “rational” in constituting another species’ (*DR*, p. 49/p. 32). In other words, treating being as the highest genus seems to disrupt the structure of the hierarchy of

²⁷ This, as Somers-Hall (2012b, pp. 339-341) notes, is why Heidegger, in attempting to pose the *Seinsfrage* and thereby overcome what he sees as a long history of *Seinsvergessenheit*, begins with the Aristotelian insight that ‘[t]he “universality” of “being” is not that of *genus*’: ““Being” does not delimit the highest region of beings so far as they are conceptually articulated according to genus and species [...] The “universality” of being “surpasses” the universality of genus’ (Heidegger 1996, p. 2).

determination sedentary distribution aims to present, as being seems to have to move from one level of the hierarchy to another in order for us to attribute it to everything in the hierarchy to which we want to attribute it (i.e. also to the differences that differentiate the genus *being*). Thus, ‘Being itself is not a genus [...] because differences *are*’ (*DR*, p. 49/p. 32 [original emphasis]).

If being is treated as the highest, or most general, genus, then, we not only face difficulties with maintaining the hierarchical ordering of specific differences that is supposed to determine things to be what they are within a sedentary distribution (i.e. determine their being), but it seems that we are left without any way to define being itself. How might one respond to these difficulties? Assuming that it is unappealing to deny that being is differentiated (i.e. that there are differences),²⁸ it seems that it is necessary to reject the claim that being is a genus.²⁹ How can such a denial best be made sense of?

One way to make sense of it is to see it as a rejection of the notion of being altogether. The problems generated by the very notion of a highest genus might be seen – in something like a Wittgensteinian spirit – to be symptomatic of generic difficulties that inevitably befall any such attempt to try to deploy language in order to speak about something as general as ‘being’. Aristotle accepts that being cannot be thought of as a highest genus, arguing rather that the hierarchy of sedentary distribution peaks with multiple most general genera, the categories. There are thus multiple *ways of being*, but no highest genus of being itself. This is the position I

²⁸ For a reading of Spinoza as espousing something like this view, see Della Rocca (2012).

²⁹ It is of course also possible to deny that it is *being* that is the highest genus, without denying that there is a highest genus. However, this would not only leave us with the difficult question of what could possibly be more generally applicable to beings than being, but would ultimately simply push these problems associated with the highest genus onto another category.

have termed ontological pluralism, and as I have noted above with regard to negative theology and the equivocity of being, it can simply be left unqualified in such a way that we lose any real sense that the various branches of the hierarchy of sedentary distribution form a single reality. If we take this road, however, then the Aristotelian account of the being of beings in terms of a nested hierarchy of generalities seems to risk losing its grip on its own *raison d'être*, as this account of how 'being is distributed among beings' terminates in a dissolution of both the notion of being and the idea that there is a single domain of beings amongst which it might have been distributed.

This is how one might arrive at the tempered ontological pluralism we see in the notion of the analogy of being. The unity or totality of reality as a single domain of beings is preserved by treating the relations between the highest genera or categories as 'relations of analogy'; the unity of being in virtue of which everything that is can be thought of as belonging to the same domain is a unity of analogy (*DR*, p. 52/p. 34). What this means (as I have already noted above) is that although 'being' is said in many senses (i.e. the categories), 'these uses are related to a central usage, or focal meaning' (Somers-Hall 2012b, p. 340). In Aristotle's case, '[e]verything that is is somehow related to the sense of being as οὐσία' (de Beistegui 2004, p. 236), 'designating beings in their *presence* (or *permanence*) and *essence*' (p. 1).

What the above consideration of the arguments that lead Deleuze to try to think through a coherent ontological monism demonstrate is that ontological pluralism of one stripe or another is a natural consequence of a way of 'distributing being' that is extremely familiar and, according to Deleuze, characteristic of our ordinary cognitive activity. Ontological pluralism is not a peculiar or extreme thesis, then, but one which follows naturally from the attempt to rigorously codify the

structures of our ordinary thought, at least once we confront the internal problems such structures generate around the notion of being. This is one sense in which, for Deleuze, ontological monism is far from trivial. In what follows, I want to explore a second sense in which ontological monism is not trivial, namely its difficulty and the demands it places on us to revise the ordinary structures of thought that force us to adopt ontological pluralism.

What needs to be considered now, then, is how Deleuze relates ontological monism to the philosophy of difference. The straightforward answer is that he identifies being and difference. However, this is going to require a fair amount of unpacking before it is remotely illuminating.

I have already noted that the univocity of being is connected with difference, insofar as it can be thought of as the thesis that no two beings are so different that they cannot be said to be in the same sense. Furthermore, I have shown that the notion of the analogy of being is a response to problems arising from an attempt to understand the being of entities – what makes entities the entities that they are – in terms of a division of being into a hierarchy of specific and generic differences, specifically from a dissatisfaction with the dismissal of the unity of reality as in some sense a whole seemingly implied by a bare or unmoderated ontological pluralism. Thus, the status of difference and differences seems to be key for thinking through ontological monism; and indeed, it is through the concept of difference that Deleuze will approach the question of how to formulate the most effective and coherent concept of univocal being.

The way in which he uses this approach can be explicated by considering his account of Spinoza's formulation of ontological monism. Ontological monism, Deleuze claims, 'rest[s] on two fundamental theses' (*DR*, p. 387/p. 303). Firstly,

while ‘there are indeed forms of being, [...] these forms involve no division within being or plurality of ontological senses’ (*DR*, p. 387/p. 303). Deleuze will also express this by saying that the ‘real distinction’ between these forms or ways of being ‘is a formal, not a numerical distinction’ (*DR*, p. 388/p. 303).³⁰ Secondly, ‘that of which being is said is distributed [*réparti*] by essentially mobile individuating differences which necessarily endow “each one” [i.e. each entity] with a plurality of modal significations’ (*DR*, p. 387/p. 303 [translation modified]). That is, ‘the numerical distinction between “beings [*étants*]” is a modal, not a real distinction’ (*DR*, p. 388/pp. 303-304).³¹ What these two theses express is that though there is indeed a plurality of entities and a plurality of ways of being, these differences do not imply that being is plural; these are differences (between forms and between modalities) *within* a single and same being.³²

It is in his substance monism that Spinoza expresses his conception of the univocity of being: with Spinoza, ‘[u]nivocal being becomes identical with unique, universal and infinite substance’ (*DR*, p. 58/p. 40). For Deleuze, it is crucial that we not read substance monism as the elimination of differences. Rather, it is the way that these differences (between things, between ways of being and between the degrees of intensity with which things express these ways of being) are conceived as

³⁰ Deleuze clarifies the notion of formal distinction in *Spinoza and the Problem of Expression*: ‘Formal distinction is definitely real distinction, expressing as it does the different layers of reality that form or constitute a being. [...] But it is a minimally real distinction because the two really distinct quiddities are coordinate, together making a single being. *Real and yet not numerical*, such is the status of formal distinction’ (*SPE*, p. 55/p. 64 [original emphasis]).

³¹ ‘[M]odes being *in* something else’ – as opposed to ‘substance’, which is ‘*in* itself’ – Deleuze seems to use ‘modal distinction’ here to refer to a distinction *within* one thing (*SPE*, p. 22/p. 29).

³² ‘Detached from all numerical distinction, real distinction is carried into the absolute, and becomes capable of expressing the difference within Being’ (*SPE*, p. 32/p. 39 [translation modified]).

expressions of a single substance which, for Deleuze, is the key to the Spinozistic formulation of ontological monism.

Spinoza thus realises the two sides of ontological monism (noted above) by displacing the sedentary distribution of being into species and genera with a distribution of being into modes and attributes. So, ‘from the beginning of the *Ethics*’, it becomes clear

- (i) ‘that the *attributes* [i.e. the basic forms or ways of being] are irreducible to genera or categories because while they are *formally* distinct they all remain [...] *ontologically* one, and introduce no division into the substance which is said or expressed through them in a single and same sense’ (*DR*, pp. 387-388/p. 303 [original emphasis]); and
- (ii) ‘that the *modes* [i.e. numerically distinct degrees of intensity] are irreducible to species because they are distributed within attributes according to individuating differences which [...] immediately relate them to univocal being’ (*DR*, p. 388/p. 303 [original emphasis]).

By substituting formal and modal difference for generic and specific difference, then, Spinoza is able ‘to understand all differences [...], however great, as themselves constituting the character of being’ *qua* singular substance (Moore 2015, p. 7). ‘On the Spinozist approach, it is not just that any mention of the being of a thing is to be understood as a reference to one particular entity’ (substance), but that ‘any mention of the multiplicity and diversity of things’, or of the multiplicity and diversity of these things’ ways of being, ‘is to be understood as a reference to that

entity, whose essence is expressed in the very differences between them' (Moore 2015, p. 7).

A still more complete and coherent formulation of ontological monism is possible, however, according to Deleuze, one in which there is no possibility of a reconstitution of the sorts of problems that arise from sedentary distribution and the consequent ontological pluralism. Deleuze's aim here is to arrive at a position where 'being is no longer thought within an ontological separation between two different orders, from a certain dualism in need of subsequent bridging' (de Beistegui 2004, p. 239). With Spinozism, the possibility of the reopening of such a separation is not once and for all foreclosed, insofar as 'Spinoza still believes in one privileged unified entity', namely substance, 'that is prior to all multiplicity, prior to all diversity, prior to all difference' (Moore 2015, p. 8). An *ontological* inequality seems to remain, insofar as 'substance appears independent of the modes, while the modes are dependent on substance, [...] as though on something other than themselves' (*DR*, p. 59/p. 40). Even if it is supposed to be the case that substance is its own cause *in the same way* that it is the cause of its modes, that it is *self-causing* (*causa sui*) seems to threaten to put substance at too great a distance from the modes.

Deleuze's sense that there is a need to push beyond the Spinozist formulation of ontological monism, I submit, can be seen as a consequence of his implicit acknowledgement of the value of Heidegger's critique of onto-theology. As Somers-Hall (2012b) rightly states, 'the constraints on thinking brought out in Heidegger's analysis of the history of metaphysics' and corresponding 'critique of onto-theology'

are ‘definitive of twentieth-century French philosophy’, and consequently ‘a major influence on Gilles Deleuze’s philosophy’ (p. 343).³³

Heidegger’s account of metaphysics as onto-theology is complex and makes a number of more or less concrete historical claims, but for present purposes it can be summarised as follows: in inquiring into the being of entities, metaphysicians have tended to pursue this question by determining an entity or kind of entity as an exemplar of what it is to be, an exemplarily existing entity, and understood the being of all other entities by reference to this eminently existing entity.³⁴ The naturalness of such a move becomes apparent upon considering the nature of sedentary distribution as a distribution of being in accordance with a hierarchy of every increasing generality of kinds of entity. Such a structure seems to compel us to try to discern a most general kind of entity with which *being* in general can be identified. This is precisely the move one would be inclined to make if, in accordance with the requirements of sedentary distribution, one were operating under the assumption that differentiation can only be made sense of if the differences in question are subsumed under a prior identity, the identity of a superior generality.

Heidegger’s concern is that conceiving of the task of metaphysics as an attempt to discern the highest kind of entity, or the kind of being which exists exemplarily, involves a conflation of being (*das Sein*) and beings or what there is (*das Seiende*) – the difference between which he terms the ‘ontological difference’.

³³ See also Thomson (2005): ‘However controversial this central doctrine of the later Heidegger [namely, that occidental metaphysics has taken the form of onto-theology] may be, it now forms a taken-for-granted point of philosophical departure for virtually every major practitioner of poststructuralism, postmodernism, and deconstruction’; it is ‘an unspoken presupposition of much recent continental philosophy’ (p. 10).

³⁴ For an illuminating account of Heidegger’s concept of onto-theology, see Thomson (2005, chap. 1).

If the ontological difference is neglected then being is all too easily obscured behind beings. Onto-theology involves a ‘forgetting’ of the ontological difference, and consequently an inability to take being as such as an object of investigation.

Let us return to Deleuze. Deleuze’s desire to take heed of Heidegger’s concerns regarding the onto-theological constitution of metaphysics can be seen as a motivation for his move from a Spinozist to a Nietzschean formulation of ontological monism. There is a risk that substance, insofar as it is, as I noted above, ‘one privileged unified entity’ (Moore 2015, p .8) with which being is to be identified, still exemplifies an onto-theological model, conceiving of being in terms of an exemplarily existent entity.³⁵ While Deleuze does his utmost to convince that Spinoza’s substance monism escapes the difficulties of sedentary distribution, there does seem to be something of the latter configuration remaining in the notion of substance as an identity under which all differences are subsumed – and Deleuze’s move from Spinozist substance to Nietzschean eternal return should be read as acknowledging this.

What is needed, Deleuze suggests, is that ‘[s]ubstance [...] itself be said *of* the modes and only *of* the modes’ (*DR*, p. 59/p. 40 [original emphasis]). What this involves, in effect, is going directly to the source of the problems with sedentary distribution – namely how to understand *both* the universality of being and the being of differences – by identifying being directly with the process of differing by which it is distributed as differentiated entities. Things *are* insofar as they differ, such that

³⁵ Moore (2015, p. 10) also notes this connection between Deleuze’s ultimate rejection, or perhaps rather modification, of Spinozistic ontological monism in *Difference and Repetition* and his Heideggerian sympathies. Knox Peden’s (2014, chaps 6 and 7) reading of Deleuze’s ‘synthesis’ of Spinoza and Heidegger is also of interest here.

if ‘being’ names what is common to everything that is, then Deleuze’s conceptual gambit is to suggest that ‘what is common to all beings [...] turns out to be difference’ (de Beistegui 2004, p. 235). Univocal being ‘is said of difference itself’ (*DR*, p. 388/p. 304).

For Deleuze, then, it is not enough to seek a unifying concept of being in general that can clarify how all the *different ways* of being are different ways of *being*. In order to avoid the sort of difficulties that arise from sedentary distribution, and the theoretically unsatisfying preservation of the unity of being through a tempered ontological pluralism, characterising differences between genera in terms of relations of analogy, ‘we must [...] understand how these differences themselves contribute to the fundamental character of being’ (Moore 2015, p. 4).

Deleuze clarifies how he understands the notion of difference as being by identifying being with (a certain reading of) the Nietzschean notion of eternal return. ‘[E]ternal return’, Deleuze states, ‘is the univocity of being’ (*DR*, p. 60/p. 41); we can only ‘*realise univocity in the form of repetition in the eternal return*’ (*DR*, p. 388/p. 304 [original emphasis]).³⁶ However, this is the case only on condition that eternal return is ‘said of that which differs and remains different’ (*DR*, p. 165/p. 126).

How does Deleuze understand eternal return, and what are the consequences of this view of univocal being as eternal return for the status of entities and for the status of our theorising about entities?

³⁶ In turning to eternal return in order to give an account of being that would not be onto-theological, Deleuze breaks with Heidegger’s verdict that Nietzsche’s notion of eternal return represents a kind of self-terminating apex of onto-theological thinking (see Thomson 2005, pp. 21-22; *DR*, p. 91/p. 66). He thus also rejects Heidegger’s claim that Nietzsche’s notion of pure becoming blocks the possibility of ontology, because it undermines any understanding of ‘being as such’ as what ‘remains “the same” beneath all change’, even in Heidegger’s re-wrought sense of ‘the same’ (Thomson 2005, p. 27; *DR*, p. 91/p. 66, p. 384/p. 301).

Eternal return, Deleuze tells us, is ‘the empty form of time’ (*DR*, p. 119/p. 88). It is, in Philip Turetzky’s (1998) apt turn of phrase, time conceived as a ‘rhythmic pulsation’, a ‘moment’ (though ‘not a temporal present’) ‘that arises again and again’, ‘continually differing from itself’ (pp. 112-113). ‘Being comes to be at every moment’, ‘[p]ast and future [...] emerg[ing] together in each moment of becoming’.³⁷ In a strict sense, we might say that, for Deleuze, there is no sameness, nothing that persists, in the transience of pure becoming. Yet, eternal return is ‘the closest *approximation of a world of becoming to a world of being*’ (Nietzsche 1968, p. 330 [original emphasis]). Eternal return is ‘the most radical form of change, but the form of change does not change’ (*DR*, p. 120/p. 89). This is why eternal return, as the perpetual emergence and disappearance of being at every moment, can play the role of a sort of reconceived substance: this returning of a moment where beings emerge and pass is the closest we get to a persistence in the midst of difference. There is something paradoxical about thinking about eternal return as ‘the same of the different’ (*DR*, p. 165/p. 126): ‘The self-reference of the moment [i.e. the pulsating moment of becoming that eternally returns] is only possible in its return, which separates it from itself and allows it to point to itself’ (Turetzky 1998, p. 114), which is, in effect, to say that the identity of the eternal return consists in its differing from itself.³⁸ This may well be ‘deeply paradoxical’ (Moore 2012, p. 456 n. 11). But

³⁷ Turetzky (1998): 109.

³⁸ Adrian Moore (2015) elaborates on this point in a helpful manner: ‘Nietzschean differing [i.e. eternal return] is not an entity at all. It cannot be said to differ from other entities. It cannot be said to differ from *anything* in the way in which entities differ from one another. On the other hand, it can in a way be said to differ. For there is a sense in which, in the differing of entities from one another, differing itself is ever different. [...] In a break with traditional grammar: it can be said to differ from itself’ (p. 19).

Deleuze does not take the emergence of such paradoxes to discredit the idea of univocal being as eternal return. This paradox points instead to this idea's exceeding the limits of representational thinking on the one hand, and consequently to the aforementioned 'difficulty' of this thought on the other.

Having shown how Deleuze's differential ontological monism functions as a response to Heidegger's critique of metaphysics as onto-theology, it is now easier to understand why Deleuze fails to fit comfortably within the terms of the contemporary debate concerning naturalism and its relation to the natural sciences. I have noted how these debates revolve around questions of how restrictive naturalism should be, and what should be the reference point in relation to which this restriction is decided. The key point is that the notion of restrictiveness in play here works on an onto-theological principle, since the restriction is justified by the election of some particular kind of entity as an exemplar of being. It is thus not a question, for Deleuze, of whether naturalism should be liberal or restrictive, since the latter debate boils down to a question of which kinds of beings should be afforded some privileged status as exemplars of reality.

Hans Fink (2006) gives a clear account of this aspect of the contemporary debate, highlighting the fact that 'restricted conceptions of nature can come in quite different, often competing versions' (p. 204). What I have termed, following Mario De Caro, scientific naturalism and liberal naturalism above, Fink (2006) terms 'materialist naturalism' and 'idealist naturalism' (p. 205). Both, he makes clear, are examples of what he calls *restricted* naturalism, which seeks to 'identify nature with certain parts or sides of the world', treating these as *really real*, or exemplarily existent, and explaining away other aspects of reality (Fink 2006, p. 209). On an unrestricted conception of naturalism, however, '[e]ven the greatest and deepest

differences are differences within nature rather than differences between nature and something else' (Fink 2006, p. 210). Deleuze's account of univocal being as eternal return is an attempt to think through the demands of such an unrestricted naturalism. It is thus a question of understanding what is demanded of an account of the domain of being as a single domain within which all entities can 'equally' be said to reside – Deleuze's answer being that what is demanded is a general reversal of the order of priority of identity and difference, being and becoming. This position does not seek to legislate regarding what entities or kinds of entities there are, but only regarding the ontological status of entities or kinds of entities if these are to be thought of as *being* univocally.

Hence, Deleuze's account of ontological monism is operating on a different level to the contemporary naturalism debate. Where the latter is a debate about what kinds of things there are, Deleuze's thesis concerns what it means for something to be at all, and thus what kind of status we are entitled to attribute to any posit of our theorising. Here we see again Deleuze's observance of Heidegger's critique of the onto-theological metaphysics' forgetting of the ontological difference: Deleuze's ontology is concerned not with *beings* but with *being*.

Insofar as it is a thesis about the sense in which anything that is can be said to be, Deleuze's ontological monism is a thesis with implications for the status of the entities and kinds of entities we posit in our theorising. It is here, then, that Deleuze's ontological monism provides the reason for his conception of philosophy as concept creation. The idea of arriving at a final conceptual framework that would provide us with a correct account of what there is is one that is undermined by ontological monism, according to Deleuze's claim that a fully realised ontological monism will understand being as eternal return. All identities are swept away by the

transience of becoming just as soon as they are created, and no conceptual framework can be anything but an attempt to capture a snapshot of this transience. Univocal being exceeds the representational order of concepts. If philosophical concepts are able to extricate themselves from this order, it is insofar as the gesture of critique that engenders properly philosophical thinking allows these concepts to draw their vitality from the expression of the creative becoming of reality itself. Deleuze's metaphilosophy is thus a consequence of his ontology, as it is ontological monism that demands a conception of philosophy as critical concept creation. It is also this connection that allows us to understand in what sense Deleuze's is a *transcendental* ontology: being *qua* transcendental field conditions the production of concepts in such a way as to impose constraints on what significance we can legitimately take them to have, particularly what sort of relation to the world they can have.

Conclusion

What conclusions can be drawn regarding the relation between Deleuzian immanence and the sorts of immanence we might associate with modern science? As discussed above, to the extent that modern science can be related to what might be termed immanence, it is as an index for what counts as immanent or natural. The epistemic privilege of science can be used to justify an ontological constraint on what kinds of things ought to be accepted as existent. Deleuze, I have sought to argue, is not interested in any such manoeuvre.

Deleuzian immanence has a distinctly Kantian flavour, in the sense that a commitment to such immanence is a commitment to not regard one's theorising as

capable of reaching beyond certain bounds.³⁹ Specifically, we theorise *immanently*, for Deleuze, when we create concepts without believing it to be possible to produce a final and complete conceptualisation, and without believing that the reality which triggers our theorising is either structured like our conceptualisations or wholly formless. As I have shown in chapter 2, this is what it means to not be deceived, led into error, by the transcendental illusions that inevitably emerge from our position as subjects of representation.

Far from his notion of immanence being a response to new demands placed on philosophy by the sciences, Deleuze's post-Kantian philosophical theorising produces a set of constraints on the status that can be assigned to any conceptual framework, including those produced by science, if a covert appeal to the transcendent is to be disbarred.

If Deleuze's motivation is not the impact of the sciences, then what is it? Deleuze has two kinds of motivations in pursuing his ontological monism, with all its peculiar and paradoxical consequences. First of all, he has a theoretical motivation, namely the *a priori* problems he detects in ontologies based on a sedentary distribution of being. Such ontologies either terminate in ontological pluralism, foreclosing the possibility of ontology as a discourse on being *qua* being in the first place; or they make some appeal to the analogical unity of being, which Deleuze takes to be an unsatisfying, compensatory strategy for trying to avoid embracing either a fully worked through account of the single sense of being or the

³⁹ Christian Kerslake (2004) is thus correct to argue that Deleuzian immanence should not be identified with 'metaphysical materialism' – the 'most likely [...] form' taken by the '*regression* to a precritical kind of metaphysics [...] in the wake of the [...] "speculative death of God" wrought by Kant' – but should rather be understood as 'in the service of a basic post-Kantian framework' (pp. 483-484).

full consequences of a fragmentation of being into multiple incommensurable domains. These are the ideas we have primarily been exploring in the course of this chapter.

On a theoretical front, then, I would argue that Deleuze's considerations are *metaphysical* in character, which is to say that he is engaged in *a priori* reasoning and argumentation, involving no essential appeal to empirical considerations. This is paradigmatic 'armchair' philosophising.

Deleuze's motivations are not purely theoretical, however: his exploration of the demands of thinking ontological monism also has a powerful ethical motivation.⁴⁰ Representational philosophy, Deleuze suggests in *Difference and Repetition*, has, at root, a moral motivation.⁴¹ Behind sedentary distribution, there is 'a moral vision of the world' (*DR*, p. 166/p. 127). The key to this moralism is the onto-theological gesture of electing an exemplary existent and understanding the being of all entities in terms of their relation to this privileged entity. We see the moralistic significance of this gesture 'in its purest state', Deleuze claims, in Plato (*DR*, p. 166/p. 127). In the Platonic theory of Ideas, '[t]he function of the notion of the model [or Idea] is not to oppose the world of images in its entirety but to select the good images [...] and eliminate the bad images', that is, to select and valorise those entities with the appropriate relation of mimetic proximity to the 'originary superior identity' of the Ideas (*DR*, pp. 165-166/pp. 126-127). Platonism is a search

⁴⁰ *Contra* Levi Bryant, who suggests that it is possible to give a complete account of 'Deleuze's metaphysics which makes no reference to his ethics' (Bryant 2008, p. ix). On the relation between Deleuze's commitment to immanence and his ethics, see Smith (2012b, pp. 284-286).

⁴¹ Deleuze follows Nietzsche on this point: 'the moral (or immoral) intentions in every philosophy constitute the true living seed from which the whole plant has always grown' (Nietzsche 2002, §6).

for purity,⁴² for the greatest possible approximation of all things to those exemplars in terms of which their being is defined. The world is envisaged as a hierarchy of gradations of perfection based on proximity to certain fixed, transcendent paradigms (*DR*, p. 166/p. 127).

To this moral vision of the world, Deleuze wants to oppose ‘the ethical vision of the world’ that accompanies ontological monism (*SPE*, chap. 16). This is an ethics based around each thing’s cultivation of its own powers, without reference to an ideal or model of perfection in relation to which the thing itself would be merely derivative, or indeed in relation to which this cultivation could be a failure. As de Beistegui (2010) states, for Deleuze, ‘the ethical [...] question, [...] instead of asking what we *ought* to do, [...] asks what we *can* do’ (p. 107). ‘Ethics is a matter of power, not duty’ (de Beistegui 2010, p. 107). I will not explore this ethics of the cultivation of power in any further detail here. What is relevant is simply to note the role such an ethics plays in motivating Deleuze’s search for a maximally coherent account of ontological monism – of what it means to be in a world where no specific kind of entity is privileged, where everything *is* in the same sense.

In his essay on Lucretius, Deleuze (1961) suggests a certain relation between the theoretical and practical dimensions of this project: ‘Everything happens as if physics [i.e. theoretical philosophy] was a means subordinated to practice, but practice is powerless to realise its end without this means that it would not discover alone’ (p. 25). If ethics thus requires ontology as a means to its end, it is insofar as – in the Epicurean terms of the essay – ‘practice realises its own end only by denouncing false infinity’ (Deleuze 1961, p. 25). What is suggested here, then, is a

⁴² See Deleuze (1988), where he points to ‘[t]he obsession with the *pure*’ as a point of affinity between Bergson and Plato (p. 22).

model of the division of labour in philosophy whereby it is ultimately *practical or ethical* ends that are pursued, but through the essential mediation of *theoretical or speculative* philosophy, insofar as these ethical ends can only be achieved by a critique of the speculative illusions that obfuscate them. Arguably, this ethical dimension to Deleuze's philosophy puts even greater distance between his thought and those contemporary naturalists who see their embrace of some form of closed immanence as motivated primarily or solely by the epistemic power of the sciences.⁴³

These two types of motivations for immanence – the theoretical, *a priori* critique of transcendence and its ethical critique – indicate that Deleuze's engagement with immanence is thoroughly philosophical in character and seems to make little reference to the sciences. It is not at all clear that immanence, as Deleuze understands it, is a constraint that will seem terribly amenable to scientists, and certainly not to contemporary scientific naturalists, whose view it would seem to strongly undercut. Deleuze has quite other concerns than producing the ontology of contemporary science.

⁴³ Although there is room to doubt whether scientific naturalism can consistently have a purely epistemic motivation, as Taylor (2007, p. 363 ff.) has argued.

Conclusion

Deleuze, Continental Naturalism and the Ideal of a Scientific Philosophy

In the present thesis, I have examined various aspects of the project Deleuze pursues in the course of his early work, with a view to demonstrating the separation between philosophy and science in operation there, and the limited role of science in his early metaphilosophical ruminations. In the following conclusion, I will (i) summarise the argument of this thesis; and (ii) indicate its broader significance for (a) Deleuze's role in contemporary narratives regarding the future of 'continental philosophy', and (b) his possible contribution to mainstream metaphilosophical debates about the nature of philosophical practice.

The question of the role of science for philosophy and the distinction between philosophy and the sciences is one that has challenged philosophers for as long as a distinction between natural science and philosophy has been apparent. Even prior to the broader cultural recognition and institutionalisation of natural science as *science* rather than philosophy, the experimental and mathematical tendencies within natural philosophy that would eventually form the basis of modern science as a distinct area of intellectual activity would pose a challenge to established modes of philosophical practice (see Anstey and Vanzo 2012; Schliesser 2011). They pose a challenge because as science emerges out of philosophy, a question arises as to the need for such a break and the value of what remains. In a cultural and intellectual environment in which the value of scientific research culture is increasingly an

assumption, the need for the sciences to break with philosophy in order to fully ‘become what they are’ is wont to leave us wondering whether what remains in the philosophy camp is of any value. Particularly in areas such as metaphysics, which seek to tell us something about the fundamental nature of reality, the sciences challenge philosophy by providing more methodologically rigorous answers to traditional questions.

In the second half of the nineteenth century, the rise of science seems to cross a critical threshold and the sense amongst philosophers that the values of science are beginning to hegemonise intellectual culture – to the detriment of philosophy – becomes more acute. This results in the proliferation of ‘crisis’ narratives on the one hand – but also of positivisms, naturalisms and scientisms on the other.

Deleuze, as I have argued throughout this thesis, is neither positivist, naturalist nor ‘scientist’. Neither, however, is he prone to adopt the rhetoric of crisis in relation to the question of philosophy’s status in an age of science. In 1977, in his *Dialogues with Claire Parnet*, Deleuze is dismissive of other philosophers’ worries about the status of philosophy: “‘What is the position with philosophy? Is it dead? Are we going beyond it?’” It’s very trying [*très pénible*]’ (Deleuze and Parnet 2006, p. 1). In 1988, in conversation with Raymond Bellour and François Ewald for *Magazine Littéraire*, Deleuze (1995) insists that ‘I’ve never been worried about going beyond metaphysics or any death of philosophy. [... T]he only way it’s going to die is choking with laughter’ (p. 136). In a letter to Jean-Clet Martin, written in 1990, Deleuze (2006a) would claim that ‘questions that address “the death of philosophy” or “going beyond philosophy” have never inspired me’ (p. 54). And finally, in 1991, writing with Félix Guattari, he would repeat this sentiment: ‘the death of metaphysics or the overcoming of philosophy has never been a problem for

us: it is just tiresome, idle chatter [*ce sont d'inutiles, de pénibles radotages*]' (Deleuze and Guattari 1994, p. 9). Despite this refusal to accept that the question of philosophy's specificity is properly associated with an atmosphere of crisis, Deleuze is, as I have already indicated in chapter 1, sensitive to the question. This question is already posed explicitly as early as the mid-'50s, in one of Deleuze's early essays on Bergson: 'Here, already, the general orientation of philosophy comes into question, for it is not enough to say that philosophy is at the origin of the sciences and that it was their mother; rather, now that they are grown up and well established, we must ask why there is still philosophy, in what respect science is not sufficient' (*DI*, p. 29/p. 23). In light of this awareness of the challenge posed to philosophy by the sciences, Deleuze's rhetorical refusals of the problematic of philosophy's demise can be seen not so much as a refusal to engage with the question of philosophy's specificity in relation to the sciences as a particularly stark affirmation of the importance of maintaining this specificity.

Nevertheless, part of the purpose of this thesis has been to bring out a theme in Deleuze's early work which, for all Deleuze's apparent awareness of its importance, remains submerged in the early work, fading into the background behind the more pressing concern at that time of distinguishing the new philosophy from the old. That is to say, for the Deleuze of *Difference and Repetition*, the more immediate goal would seem to be that of challenging an orthodox model of the history of philosophy marked by an exclusive focus on philosophical texts (and indeed, on canonical philosophical texts) through an appropriation of conceptual resources from across disciplinary boundaries. The externality of science to philosophy is part of the strategy here, and the task of distinguishing philosophy from the sciences (although,

as I have tried to show, such a distinction can be discerned) is subordinated to the task of testing the limits of philosophy as an academic practice.

I have noted above that commentators interested in Deleuze's relation to the sciences often turn to his and Guattari's explicit discussions of science in *A Thousand Plateaus* and *What Is Philosophy?*, but that they are drawn in two different directions by these seemingly divergent texts. How might the conclusions I have drawn concerning Deleuze's early work fit into a narrative about his intellectual development as a whole, and thus be situated in relation to the stances adopted in these texts?

A Thousand Plateaus is a work in which Deleuze (now writing with Guattari) extensively discusses the sciences and makes frequent use of scientific resources. It might also plausibly be seen as one of the texts in which Deleuze displays the most flagrant disregard for the question of the specificity of philosophy in relation to the sciences, and for disciplinary borders generally. Nevertheless, I would suggest that these features of *A Thousand Plateaus* testify not to so much to a break with philosophy or with a commitment to philosophy's specificity on Deleuze's part, but as a continuation and radicalisation of the concern to extricate philosophy from the norms of academic orthodoxy already in effect in the early work. As such, *A Thousand Plateaus* does not seem to represent a fundamental deviation from the attitudes towards philosophy, science and their relation already formulated in the early work. The idea of a split within science, whereby it is essentially bound to the representational requirements of cognition at the same time as it tests the limits of these requirements by deploying critical-creative thinking towards a cognitive end, which I have argued (in chapter 2) is already present in *Difference and Repetition*,

will be taken up and developed more fully and explicitly in *A Thousand Plateaus*, where it becomes the distinction between ‘nomad’ and ‘royal’ science:

Far from drawing creative lines of flight and conjugating traits of positive deterritorialization, axiomatics blocks all lines, subordinates them to a punctual systems, and halts the geometric and algebraic writing systems that had begun to run off in all directions. This happened in relation to the question of indeterminism in physics: a “reordering” was undertaken to reconcile it with physical determinism. Mathematical writing systems were axiomatized, in other words, reestratified, resemiotized, and material flows were rephysicalized. It is as much a political as a scientific affair: science must not go crazy. Hilbert and de Broglie were as much politicians as scientists: they reestablished order. [...] Science as such is like everything else; madness is as intrinsic to it as reorderings. The same scientists may participate in both aspects, having their own madness, police, significances, or subjectifications, as well as their own abstract machines, all in their capacity as scientists.

(Deleuze and Guattari 2004, pp. 158-159)

Here, the idea is explicitly formulated that science is pulled in two directions: the ‘madness’ of creative thought and a representational ‘reordering’ which, in the context of the *Capitalism and Schizophrenia* project, has now taken on a political dimension.

The *Capitalism and Schizophrenia* project is a definitive gesture of Deleuze’s attempt to extricate himself from the academic orthodoxy within which he was educated, something that becomes clear from his retrospective statements about his early work (see Deleuze 1995, pp. 6-7; 2006a, pp. 63-66). In this respect, it testifies to the intellectual atmosphere that also gave birth to the ‘experimental’ University of Paris 8 at Vincennes (later Saint Denis), at which Deleuze taught from 1969 until his retirement in 1987.¹ Nevertheless, this academic anti-establishmentarianism did not spring into being fully formed on the barricades of May ’68; the limits and breaking points of academic discourse are already being stress tested in Deleuze’s early work.

¹ On Paris 8 and Deleuze’s tenure there, see Dosse (2010, chap. 19); see also Soulié (1998).

If Deleuze finally addresses explicitly questions of the specificity of philosophy in relation to the sciences only in 1991, in the co-authored work *What Is Philosophy?*, it seems to me that this is insofar as the intellectual atmosphere, as well as Deleuze's relation to it, has changed. Now retired, it is no longer a question for Deleuze of carving out a heterodox niche at a distance from the norms of more orthodox academic philosophy, as it had been earlier in his career. It is perhaps in part in this sense that this sort of metaphilosophical reflection is the work of 'old age' (Deleuze and Guattari 1994, p. 1). In terms of the intellectual atmosphere more generally, Deleuze's turn from a defence of philosophical avant-gardism against academic orthodoxy to an attempt to explicitly assert and articulate the specificity of philosophy might be explained in terms of a change in the apparent adversaries of philosophy. Whereas previously Deleuze seems to have seen the main threat to philosophy as coming from within academic philosophy itself, by the early '90s he seems more worried that the mantle of philosophy will be co-opted by forces that he takes to be strictly speaking extra-philosophical – be it the appropriation of the concept of 'concept' by the marketing industry or the apparent conflation of philosophy with a certain image of science by certain Anglo-American currents of thought. If Deleuze finally takes the time to cash out a conception of philosophy's distinctiveness, it is perhaps because philosophy no longer seems to him to be *its own* worst enemy. For whatever reason, in these last years of his life, Deleuze finally sees fit to address these questions. In doing so, he seeks to render explicit a commitment to the specificity of philosophy that, I have tried to show, is already present in his early work.

1 Deleuze and ‘Continental Naturalism’

It is a trope of growing popularity amongst *soi-disant* continental philosophers in English-speaking academe that continental philosophy is entering or has entered a new phase characterised by a renewed interest in realism, materialism and naturalism. This development is taken to be correlated, at a more general level, with a new confidence in metaphysics as a live possibility for philosophy, rather than as a dead intellectual inheritance from which we must extricate ourselves with the hope of arriving at a ‘post-metaphysical thinking’. Furthermore, this return to speculation regarding a reality irreducible to our knowledge of it is supposed to demand, or at least be facilitated by, a reassessment of the significance of the empirical (particularly natural) sciences for philosophical theorising.²

The sort of scientific readings of Deleuze this thesis has sought to undermine have contributed to the idea that Deleuze should be heralded as a forefather or pioneer of this ‘turn’ in continental philosophy.³ There are two aspects to the construal of Deleuze as a precursor to this trend. The first is his engagement with the hard sciences, which is supposed to be a model for what it might look like for ‘continental’ philosophy to develop a more serious and productive relation to the sciences. The second is his supposedly ‘a-critical’ philosophical stance (as argued for

² A particularly vocal community of such scholars has coalesced under the banner of ‘speculative realism’ (see Bryant *et al.* 2011), although the trend seems to be broader than this, taking in philosophers who would not readily associate themselves with this emerging tendency (as evidenced by a recent special issue of the mainstream philosophy journal *The Monist* on ‘the new realism’).

³ See, for example, Bryant *et al.* (2011, pp. 4-5). Whilst he is writing before the emergence of the speculative realism trend, John Mullarkey (2006) makes similar suggestions to the effect that Deleuze can be seen as a pioneer of a new phase in the continental tradition marked, amongst other traits, by a renewed seriousness and productivity in its engagement with the sciences.

by Prigogine and Stengers, but also Alain Badiou and Peter Hallward), a reading which seems to point to an affinity between Deleuze and the sort of denunciation of Kant recently popularised by the Anglophone reception of Quentin Meillassoux's work.

The reading of Deleuze articulated here should serve to place in doubt the appropriateness of attributing to the early Deleuze such a precursor status. A quite different vision of Deleuze than that offered by the scientific reading has emerged from the present examination, and with it – as I will outline below – a quite different vision of Deleuze's pertinence to contemporary philosophical practice.

In chapter 1, I examined the context in which Deleuze's early philosophy took form and into which he sought to make a distinctive contribution, namely the French intellectual milieu of the 1950s and '60s. I showed that Deleuze insists on the specificity of philosophy in relation to the sciences at a time when this boundary was being questioned and rethought. In order to clarify how Deleuze conceives this specificity, I looked at how he seeks to position himself in relation to the thought of some prominent figures in French academic philosophy at the time who exerted a clear influence on the development of his thought – Ferdinand Alquié, Martial Guérault, Jean Hyppolite, Jean Wahl – and showed how he attempts to negotiate a distinctive position, transcendental empiricism, in dialogue with the ideas he inherits from these thinkers. I concluded that Deleuze seeks to find a synthesis of Guérault's rationalism and Alquié's mysticism through a reworking of Hyppolite's project of an ontology of being in its relation to the sensible, extricating such a project from its Hegelian form through a conception of empiricism drawn from Wahl. The resulting philosophy posits sub-conceptual experience as a genuine limit to conceptual thought, but one which, far from constraining conceptual thought, provokes it to acts

of conceptual creativity. Despite the reconciliatory intent of this philosophy, I suggested that Deleuze's emphasis on creativity indicates a greater affinity with a literary or artistic model of philosophy than with the sort of quasi-scientific model of philosophy manifested by Guérout's rationalism.

On the basis of this tentative suggestion of a certain limitation in any potential affinity between Deleuze's philosophy and scientific modes of thinking, in chapter 2, I turned to a more detailed elaboration of Deleuze's understanding of the significance of the specificity of philosophy in relation to science by examining his account of philosophy as a conjunction of concept creation and critique, and why this critique-creation is non-cognitive. In particular, I argued that, for Deleuze, it is a relentless commitment to the movement of critique that is distinctively philosophical. It is in this permanent intellectual revolution that the distinctive 'vitality' of philosophical thinking lies, and it is as a cultivation of resistance to the fixation of conceptual frameworks that philosophical thinking feeds the vitality of the mind as a site of creativity. By contrast, scientific cognition – to the extent that it aims at the construction of an increasingly accurate representation of a reality taken to exist independently of, and indeed pre-exist, its representation – relies upon such fixed frameworks in order to function and progress. This is not to say, as I have emphasised, that science can be exhaustively identified with this cognitive dimension of thought. Indeed, Deleuze will emphasise that there are moments in the history of science at which the sciences too exhibit critical-creative thinking. I also indicated the way in which dominant assumptions in the philosophy of science in France at this time foreground these creative and critical aspects of scientific thought. Nevertheless, the epistemic and pragmatic intent of the scientific enterprise, in contrast to the 'ethical' intent of philosophy, dooms it to remain torn between

these two tendencies; it cannot sever completely its connection to the cognitive dimension of thought.

In chapter 3, I considered Deleuze's concrete engagements with concepts drawn from mathematics and the hard sciences. It is the presence of these concepts in Deleuze's work which, in important part, has led to the sorts of readings I have attempted to put in question, and so it is important to consider how the understanding of the relation between philosophy and science articulated in the first two chapters impacts on our understanding of these contested passages. My main contention in this chapter was that where Deleuze discusses concepts drawn from the exact sciences, he does so in a manner which takes explicit critical distance from the original contexts in which these concepts are articulated, and which consistently points to limitations of the concerns pertinent to these original scientific contexts which permitted their distinctive philosophical significance from becoming apparent. In this way, Deleuze takes himself to be redeploying these concepts in a transformed way, re-engineering them for use in relation to a quite different set of concerns than those they were originally formulated to tackle. I suggested that Deleuze's own ideas regarding the relation between problems and meaning can be used to construe these transformations in the meaning of these concepts as a work of metaphor. Consequently, Deleuze does not take himself to be explicating the significance of these notions *qua* scientific notions. His philosophical project is independent of the scientific projects whose concepts he selectively poaches and reworks.

In the final chapter, I pulled back again to a more general perspective, in order to round off my discussion of the status of science in Deleuze's early philosophy by considering possible affinities between Deleuze's concept of immanence and the significance of the rise of modern science as conceived by

certain naturalistically-inclined philosophers. In effect, in this chapter I attempted to answer the question of whether Deleuze's philosophy of immanence, in its early incarnation, can be read as a species of philosophical naturalism in a sense that might manifest some basic affinity with modern natural science. My conclusion was that Deleuze's commitment to immanence should not be understood as a response to the declarations of the natural sciences, as if these constituted some privileged reference point, but rather as emanating on the one hand from *a priori* arguments concerning the incoherence of certain metaphysical claims, and on the other from ethical commitments. Furthermore, I sought to clarify how Deleuze's concept of immanence, which has a distinctly post-Kantian resonance, ultimately clashes with philosophical naturalism, in the sense of a position that would privilege the pronouncements of the natural sciences as a guide to and check on (we might say, as 'disciplining') our epistemological and metaphysical commitments.

On the basis of these conclusions, I argue that Deleuze is misconstrued by the scientific reading. Consequently, he is in no position to play the role of forebear to an attempted naturalistic turn in continental philosophy.

Deleuze's dissociation from the idea of a continental naturalism is, in my mind, so much the better, and this for two reasons. Firstly, I find myself on the side of those, like Simon Glendinning (2006), who are suspicious of the very idea of a philosophically substantive division within twentieth century philosophy between two traditions, 'analytic' and 'continental'. The reason being, as Glendinning has made abundantly clear in his work, that there is insufficient coherence or unity within the category of 'continental philosophy' to justify its use as the name for a distinctive mode of philosophising (see also Vrahimis 2013). 'Continental philosophy', then, is most plausibly the name for a sociological category, a

community within (largely Anglophone) academic philosophy. I take it therefore that there is something spurious about the idea of a distinctively ‘continental’ take on naturalism, where this would suggest naturalism in a continental style. There is no such style.

Even if we entertain the idea of a continental tradition in philosophy, however, the idea of continental naturalism must strike us as a perplexing one. ‘[O]ne could venture to say’, according to Beth Lord (2009), ‘that the future of continental philosophy is naturalism, the point at which the gulf with analytic philosophy may finally be bridged’ (p. 4). ‘From this perspective’, she continues, ‘continental philosophy’s connection to the sciences is potentially of more significance than its (historically, supposedly stronger) connection to the arts’ (Lord 2009, p. 5). Adrian Johnston (2008) echoes this sentiment – if in a more combative, less reconciliatory tone – claiming that continental philosophers must turn their attention to the ‘insights and ideas’ of the natural sciences, since these are ‘too precious to be unreservedly delivered over into the hands of their self-appointed Analytic (mis-)representatives’ (pp. 29-29). Such claims, I think, fare poorly when contrasted with remarks made by Lee Braver (2007), who claims that the shared theme that ‘can best initiate this twenty-first-century rapprochement’ between analytic and continental philosophy is ‘anti-realism’, which has been an important position in both purported traditions – something which ‘should come as no surprise [...], since both traditions trace their lineage back to Kant’ (p. 5). Indeed, as Christopher Norris (2013) notes, continental *and* analytic philosophy ‘have both, in their different ways, tended strongly over the past three decades toward various types of constructivism, conventionalism, instrumentalism, linguistified (Rortyan) pragmatism or fully fledged anti-realism’ (p. 200). That analytic philosophers

interested in defending various forms of anti-realism might find insights in the work of anti-realist philosophers associated with the continental tradition seems to me eminently more plausible than that the continental tradition might provide for its own erstwhile representatives a ready source of ideas for the formulation of a new realism.

Similarly, Paul Redding (2009) has suggested that it is precisely the continental tradition's *idealism* – the thesis that ‘everything into which traditional metaphysics inquired and which it took to be ultimately real was, in some sense, mind-dependent, and did not have *per se* existence’, so that philosophy is conceived as ‘the investigation of a world that was not “there anyway”, but which had been constructed by the human mind throughout its own developmental history’ – that is its most significant contribution to the contemporary philosophical scene (p. 2). This ‘idealism arose as a way of doing philosophy that could coexist without competition with science’, and as such ‘could still provide hope for a coherent and plausible modern philosophy, [...] a third alternative to the scientistic naturalism’ – which ‘looks [to the idealist] like no more than the expression of a desire to rid our culture of philosophy’ – ‘and the opposing, revived orthodox theism of the early twenty-first century’ (Redding 2009, p. 179). The value of such an approach is apparent in the fact that, despite the supposed correlation between ‘the triumph of the “analytic philosophy” of Russell and Moore’ and the ‘eclipse of [Hegelian] idealism’ in the English-speaking world (Redding 2009, p. 175),⁴ there has in fact been a ‘Sellarsian rehabilitation of an Hegelian position within current analytic philosophy’, and more

⁴ Redding (2007) notes the importance of a ‘simple opposition between analytic philosophy and Kant-derived idealism’ for analytic philosophy’s ‘Russellian creation myth’ (p. 8). See also Hylton (1990).

generally a reassessment of any hard and fast exclusion of post-Kantian idealism from the concerns of that tradition (p. 15).

If we are, then, as Lord tentatively suggests, at a point at which the purported gulf between analytic and continental philosophy can finally be bridged, it seems to me more plausible that this will happen through a reassessment by philosophers trained in the analytic tradition of the value of the post-Kantian tradition for thinking through idealist and anti-realist positions than through a reassessment by Anglophone continental philosophers of the value of objective truth and scientific realism. This is because, as Braver (2007) notes, rapprochement is best achieved by ‘a dialogue between the two branches in which each sifts through the resources of the other’ on ‘common topics on which both branches have produced quality work’ (pp. 4-5). One commonality between the otherwise often disparate and diffuse currents that tend to be grouped under the moniker of continental philosophy is a serious attempt to work through the consequences of Kant’s critical project, and consequently a foundational connectedness to this project, resulting in a suspicion of any insufficiently caveated realism (that is to say, the claim that we have epistemic access to reality as it is ‘anyway’, independent of the machinations of our minds). As a result, figures associated with this tradition have expended a great deal of time and effort on thinking through the demands and consequences of a Kant-inspired anti-realism. They have expended far less energy, as yet, on thinking through the demands and consequences of extricating oneself from such an anti-realism and seeking instead to defend ‘a hard-line objectivist realism’ (Norris 2013, p. 181). I find myself in agreement with Christopher Norris (2013), who, whilst enthused that ‘the livelier sections of the continental philosophy community’ at least are beginning to grow weary of ‘the kinds of far-out anti-realist, constructivist or socio-linguistic-

relativist position that had captured the high ground across large swathes of the post-1970 continentally influenced humanities' (p. 181), is forced to note that the new continental naturalism, 'in reactive opposition to a regnant anti-realism [...] tends to adopt a hard-line contrary stance without having yet developed the resources (in particular the modal and logico-semantic resources) to fully support its claims' (p. 187). This all too easily results in positions which waver 'between a scientific-realist outlook which [...] is distinctly under-theorised or lacking philosophical substance and, on the other hand, a speculative bent that leans so far in a "radical" (self-consciously heterodox) direction as to lose touch with any workable variety of scientific realism' (Norris 2013, p. 187). Given these worries, it is, I hope, not unreasonable to suggest that, at this stage, philosophers who have previously concerned themselves primarily with the interpretation of texts belonging to the continental tradition and who now find themselves inclined to adopt some manner of scientific realism or philosophical naturalism have more to learn from their analytic colleagues than vice versa. This is a straightforward consequence of the fact that analytic philosophers have a thirty year head-start on their continental colleagues in exploring the stakes of these kinds of positions, as well as that working against the background of a tradition so involved with a working through of the Kantian legacy leaves one in possession of a number of intellectual habits that pull against the requirements of the position one is attempting to articulate and defend.

2 Creativity versus consensus: countering the ideal of 'normal science' in philosophy

If the early Deleuze's significance for contemporary philosophy is not as a bridge between the continental tradition and contemporary philosophical naturalism, then

what might his role be? In the final section of this conclusion, I want to make a suggestion, one which still sees Deleuze as having some relevance for contemporary thinking about the relation between philosophy and science, but which is quite different to that proffered by DeLanda, Protevi and other scientific Deleuzians.

What is the appeal of ‘continental naturalism’? As with DeLanda’s reading of Deleuze, the motive often seems to be an attempt to defend the continuing relevance of the continental tradition in an Anglophone philosophical context that is at least perceived (by many Anglophone continentalists) to be dominated by philosophical naturalism. But things are not so simple. Undoubtedly the majority of academic philosophers in English-speaking academe today would identify themselves as ‘analytic’ philosophers, but analytic philosophy is not, and has never been, straightforwardly a naturalistic movement. Indeed, it finds its origins, in part, in anti-naturalistic reactions against the rise of experimental psychology that emerged out of the so-called *Psychologismus-Streit* of the late nineteenth and early twentieth centuries. Furthermore, whilst it is the association of analytic philosophy with logical empiricism that often leads continentalists to identify the analytic tradition with philosophical naturalism, logical empiricism was strictly speaking more neo-Kantian than naturalistic in its metaphilosophical orientation. The dominance of philosophical naturalism in its contemporary form is more plausibly seen as an aspect of Quine’s legacy, which is to say the legacy of the decline of logical empiricism’s influence over English-speaking philosophy. All of which is ultimately simply to say that the idea, as Lord (2009) claims, that a ‘turn to naturalism’ amongst continental philosophers may be ‘the point at which the gulf with analytic philosophy may finally be bridged’, seems to me to be based on a misapprehension

of the centrality of naturalism for the analytic tradition (p. 4).⁵ Indeed, with the burgeoning of the sub-field of the history of analytic philosophy, (some) analytic philosophers too are beginning to awaken to a new conception of their tradition, ‘less monolithic [...] than it appeared to some during decades when, too often equated with a popularized caricature of logical positivism, it was sometimes seen as an ideologically rigid movement shrinking from metaphysics and ethics [...], restricting its subject matter to “language” and/or the study of linguistic meaning, and dominating academic philosophy with scientism, naturalism, and relativism that trivialized the subject, causing it to withdraw from social engagement’ (Floyd 2009, p. 173).

This is not to say, however, that analytic philosophy has not had a crucial relationship to science, a relationship that has been formative for contemporary philosophical practice in an academic context. Analytic philosophy has been powerfully affected by a methodological ideal that we might call the ideal of ‘scientific philosophy’. What I have in mind here is a position less explicit and less strong than philosophical naturalism. This is not the view that philosophy must be conducted using methods drawn from the empirical or formal sciences (although it could easily support such a view), or that the natural sciences should constrain the claims made by philosophers, but a looser, more implicit commitment to establishing and maintaining a set of disciplinary norms that takes as its model a certain image of

⁵ This is perhaps an insight that is easier to come by when one writes from a British perspective than when one finds oneself working in North America. It has been noted that analytic philosophers in the UK maintain a certain suspicion of the sciences not shared by their eagerly interdisciplinary colleagues across the pond (see Baggini 2003).

the research practices of the natural sciences.⁶ This is not an attempt to make philosophy a ‘handmaiden’ to science, or to adopt scientific methods as the only appropriate methods, but a model for what philosophy might look like if it is to be a viable, autonomous research discipline. The hope is that through such norms, aimed at assuring ‘good professional, specialized, and therefore technical, philosophy’ (Engel 1988, p. 3), philosophy might ‘become a genuinely “objective” discipline capable (like the exact sciences) of cooperative progress and, in principle, universal agreement as well’ (Friedman 2000, p. 158). This is the sort of ambitious humility that lies behind the familiar model of academic philosophical practice based around ‘the brief article, the piecemeal approach, the opportunistic use of results of contemporary science, the problem- and solution-oriented thinking’, and so forth (Floyd 2009, p. 179).

What is at stake here, I would suggest, is an ideal of philosophy as what Thomas Kuhn termed ‘normal science’.⁷ Norris (2013) gives a fitting description of the ideal of normal science in the field of philosophy as ‘the idea that philosophy could best lay claim to academic respectability by [...] determining to tackle only those well-defined technical problems that were sure to have some likewise well-

⁶ Some examples of those who have noted, both approvingly and critically, this tendency of analytic philosophy to seek to emulate the norms of research practice proper to the natural sciences are Pascal Engel (1988, pp. 2-4), Floyd (2009, p. 179), Norris (2013, p. 1, p. 14, pp. 17-18) and Michael Friedman (2000, pp. 156-158), who has conducted a detailed study of the way in which the idea of *wissenschaftliche Philosophie* finds its way into English-speaking philosophy through Carnap’s work in particular. See also Friedman (2012) and Richardson (1997).

⁷ The idea that philosophy operates in a manner analogous to Kuhnian normal science is presented in a positive light by Matti Eklund (2013). An exemplary contemporary representative of this sort of vision of philosophy is Timothy Williamson (2007), whose ‘image of thought’ could not be more opposed to that of Deleuze.

defined technical answer' (p. 1). The prominence of this ideal, he suggests, has led to an 'ultra-specialist interest or ultra-professionalised narrowing of focus', and 'an over-concentration on issues that lend themselves to quasi-scientific formulation' (Norris 2013, p. 1). While the analytic ambition to conduct philosophy to as great an extent as possible as a normal science has no doubt contributed to the formation of a mode of philosophising capable of functioning as a professionalised research discipline in a modern sense, there are questions to be asked about the appropriateness of such a model for philosophy.

The development of these modes of thinking can be traced back to the developments that give rise to this question of the separation between philosophy and science in the first place, specifically, what distinctive contribution to our lives is philosophy supposed to make that would justify its continued existence as an activity distinct from the sciences? Is there a good reason for the *de facto* separation of philosophy and science as academic disciplines, in terms of the distinctiveness of philosophy as an intellectual activity? This, as I have discussed in chapter 1, is the sort of worry that motivates a great deal of metaphilosophical debate in France from the second half of the nineteenth century onwards, and it lies at the heart of questions about the nature and position of the borders between philosophy and the sciences that permeate the intellectual atmosphere in France at the time of the composition of Deleuze's early work. One reaction to such an atmosphere is the sort of scientific philosophy in question here, which seeks to justify philosophy's legitimacy (without necessarily clarifying its specificity) by conforming to a scientific research culture. Deleuze belongs to a different school of thought, however, according to which there is something valuable and distinctive in philosophical thinking precisely insofar as it

is not the sort of thinking that can readily be subjected to the strictures of such a culture.

Why should the application of quasi-scientific norms and ideals of academic practice in philosophy worry us? It should worry us if, like Deleuze, we take an important part of the value of philosophy to be the creative thinking that occurs when such parameters break down – or even the creative thinking that causes them to break down. Deleuze presents with an image of philosophy inherently hostile to an identification of philosophy with a policing of academic norms of the kind that remains all too prominent a feature of the structure of academic philosophy, both at a metaphilosophical and at an institutional level.

As sociologists of knowledge have frequently noted, it is a feature of any intellectual field that a key struggle is that regarding how the limits of the field are defined, what counts as included or excluded. Philosophy is no exception, and throughout its history philosophical thought has been populated by rival approaches each asserting their right to decide the correct methodology for legitimate philosophy. This sort of metaphilosophical wrangling has often been intellectually productive, but this is a consequence of the survival of a plurality of approaches in conflict with one another. The ideal of normal science seeks explicitly to eliminate this sort of plurality of conflicting methodological approaches and arrive at a consensus regarding norms of good practice that can allow for the formation of a coherent research discipline. But if philosophy's value lies in the conceptual creativity that emerges out of the collapse of this kind of consensus, then the ideal of normal science is potentially a threat to philosophy.

Deleuze's significance for contemporary philosophy, then, is not, contrary to the motivations of the scientific reading of Deleuze, as an early proponent of a

continental turn to scientific naturalism, but as a source of alternative ways of thinking about what philosophy can be than those offered by an overly narrow modelling of philosophical practice on the research practices of the empirical sciences. For Deleuze, philosophy is creative, iconoclastic, consensus-breaking, producing new meaning rather than condemning ‘nonsense’. This is an altogether more anarchic, artistic vision of philosophy, and one that does not lend itself to maintenance of a coherent academic community, with shared terminology and public criteria for success and failure. Ultimately, the philosopher ends up looking a lot more like an artist than a scientist in Deleuze’s early work, and it might be asked to what extent *academic* philosophy is even capable of embracing this image of philosophy. Alternatively, perhaps Deleuze’s is a vision of the philosopher that cannot be contained by academia, at least not in its contemporary, ‘professionalised’ form. Perhaps Deleuze’s early conception of philosophy can only ever be an element of the whole picture, a necessary ‘Dionysian’ moment, but one that must be tempered by more ‘Apollonian’ impulses if it is to be philosophically productive.

Bibliography

Abbreviations

- DI* Deleuze, G. (2002). *L'Île déserte. Textes et entretiens 1953-1974*;
- Deleuze, G. (2004). *Desert islands and other texts 1953-1974*. Trans. by M. Taormina. New York: Semiotext(e).
- DR* Deleuze, G. (1968). *Différence et répétition*. Paris: Presses Universitaires de France;
- Deleuze, G. (1994). *Difference and repetition*. Trans. by P. Patton. New York: Columbia University Press.
- FAD* Deleuze, G. (1956). *Descartes, l'homme et l'œuvre*, by F. Alquié. Reviewed in: *Cahiers du sud*, 43, pp. 473-475.
- NP* Deleuze, G. (1962). *Nietzsche et la philosophie*. Paris: Presses Universitaires de France;
- Deleuze, G. (1986). *Nietzsche and philosophy*. Trans. by H. Tomlinson. London: Continuum.
- SPE* Deleuze, G. (1968). *Spinoza et le problème de l'expression*. Paris: Minuit;
- Deleuze, G. (1990). *Expressionism in philosophy: Spinoza*. Trans. by M. Joughin. New York: Zone Books.

Other works cited

- Alliez, É. (2011). Rhizome (with no return). *Radical Philosophy*, 167, pp. 36-42.
- (2013). Ontology of the diagram and biopolitics of philosophy: a research programme on transdisciplinarity. *Deleuze Studies*, 7(2), pp. 217-230.
- Alquié, F. (1950). *La nostalgie de l'être*. Paris: Presses Universitaires de France.

- (1957). *L'expérience*. Paris: Presses Universitaires de France.
- Ansell Pearson, K. (1997a). Deleuze outside/outside Deleuze: on the difference engineer. In: K. Ansell Pearson (Ed.). *Deleuze and philosophy: the difference engineer*. London: Routledge. pp. 1-22.
- (1997b). Viroid life: on machines, technics and evolution. In: K. Ansell Pearson (Ed.). *Deleuze and philosophy: the difference engineer*. London: Routledge. pp. 180-210.
- (1999). *Germinal life: the difference and repetition of Deleuze*. Oxford: Routledge.
- (2002). *Philosophy and the adventure of the virtual: Bergson and the time of life*. London: Routledge.
- Ansell Pearson, K. *et al.* (2010). Responses to evolution: Spencer's evolutionism, Bergsonism, and contemporary biology. In: K. Ansell Pearson and A.D. Schrift (Eds.). *The history of continental philosophy, vol. 3: the new century: Bergsonism, phenomenology, and responses to modern science*. Chicago: University of Chicago Press. pp. 347-379.
- Anstey, P.R. and Vanzo, A. (2012). The origins of early modern experimental philosophy. *Intellectual History Review*, 22(4), pp. 499-518.
- Aristotle (1984a). *Metaphysics*. Trans. by W.D. Ross. In: Aristotle. *Aristotle: complete works, vol. 2*. Ed. by J. Barnes. Princeton: Princeton University Press.
- (1984b). *Nicomachean ethics*. Trans. by W.D. Ross. In: Aristotle. *Aristotle: complete works, vol. 2*. Ed. by J. Barnes. Princeton: Princeton University Press.
- Bachelard, G. (1966). *Le rationalisme appliqué*. Paris: Presses Universitaires de France.
- (2012). Corrrationalism and the problematic. Trans. by M. Tiles. *Radical Philosophy*, 173, pp. 27-32.
- Badiou, A. (2000). *Deleuze: the clamor of being*. Trans. by L. Burchill. London: University of Minnesota Press.
- (2004). One, multiple, multiplicities. In: A. Badiou. *Theoretical writings*. Ed. and trans. by R. Brassier and A. Toscano. London: Continuum. pp. 67-80.
- (2009). *Logics of worlds: being and event, vol. 2*. Trans. by A. Toscano. London: Continuum.

- Baggini (2003). 2 philosophies, separated by a common language. *The Chronicle of Higher Education* [Online]. Available at <<http://chronicle.com/article/2-Philosophies-Separated-by-a/18015>> [Accessed 31 August 2015].
- Balibar, É. (2003). Structuralism: a destitution of the subject? Trans. by J. Swenson. *differences: A Journal of Feminist Cultural Studies*, 14(1), pp. 1-13.
- Baugh, B. (1992). Transcendental empiricism: Deleuze's response to Hegel. *Man and World*, 25(2), pp. 133-148.
- de Beauvoir, S. (1949) *Les structures élémentaires de la parenté*, by C. Lévi-Strauss. Reviewed in: *Les Temps Modernes*, 49, pp. 943-949.
- Beiser, F. (1987). *The fate of reason: German philosophy from Kant to Fichte*. London: Harvard University Press.
- (2002). *German idealism: the struggle against subjectivism 1781-1801*. London: Harvard University Press.
- de Beistegui, M. (2004). *Truth and genesis: philosophy as differential ontology*. Bloomington: Indiana University Press.
- (2010). *Immanence: Deleuze and philosophy*. Edinburgh: Edinburgh University Press.
- Bell, J.A. (2009). *Deleuze's Hume: philosophy, culture and the Scottish Enlightenment*. Edinburgh: Edinburgh University Press.
- (2011). Between realism and anti-realism: Deleuze and the Spinozist tradition in philosophy. *Deleuze Studies*, 5(1), pp. 1-17.
- Bergson, H. (1946). *The creative mind*. Trans. by M.L. Andison. New York: Philosophical Library.
- (2001). *Time and free will: an essay on the immediate data of consciousness*. Trans. by F.L. Pogson. Mineola, NY: Dover Publications.
- Bianco, G. (2005). Jean Hyppolite et Ferdinand Alquié. In: S. Leclercq (Ed.). *Aux sources de la pensée de Gilles Deleuze*. Mons: Sils Maria. pp. 91-101.
- (2011). Experience vs. concept? The role of Bergson in twentieth-century French philosophy. *The European Legacy*, 16(7), pp. 855-872.

- (2013). Jean Hyppolite, intellectuel-constellation. In: G. Bianco (Ed.). *Jean Hyppolite. Entre structure et existence*. Paris: Presses de l'École normale supérieure. pp. 9-29.
- (forthcoming). Philosophie et histoire de la philosophie pendant les années 1950. Le case du jeune Gilles Deleuze [Online]. In: G. Bianco and F. Fruteau de Lacos (Eds.). *L'angle mort des années 1950. Philosophie et sciences humaines dans la France d'après-guerre*. Paris: Publications de la Sorbonne. Available at <https://www.academia.edu/9425062/Philosophie_et_histoire_de_la_philos-ophie_pendant_les_ann%C3%A9es_50> [Accessed 29 May 2015].
- Boundas, C.V. (1996). Deleuze-Bergson: an ontology of the virtual. In: P. Patton (Ed.). *Deleuze: a critical reader*. Oxford: Blackwell. pp. 81-106.
- Bourdieu, P. (1988). *Homo academicus*. Trans. by P. Collier. Oxford: Polity Press.
- (1990). *In other words: essays towards a reflexive sociology*. Trans. by M. Adamson. Stanford, CA: Stanford University Press.
- (2001). *Science de la science et réflexivité. Cours du Collège de France 2000-2001*. Paris: Raisons d'Agir.
- Bourdieu, P. and Passeron, J.-C. (1967). Sociology and philosophy in France since 1945: death and resurrection of a philosophy without subject. *Social Research*, 34(1), pp. 162-212.
- Bourget, D. and Chalmers, D.J. (2013). What do philosophers believe? *Philosophical Studies*, 166(3), pp. 1-36.
- Bowden, S. (2010). Deleuze's neo-Leibnizianism, events and *The logic of sense's* 'static ontological genesis'. *Deleuze Studies*, 4(3), pp. 301-328.
- (2011). *The priority of events: Deleuze's Logic of sense*. Edinburgh: Edinburgh University Press.
- (2012). Gilles Deleuze, a reader of Gilbert Simondon. In: A. de Boever *et al.* (Eds.). *Gilbert Simondon: being and technology*. Edinburgh: Edinburgh University Press. pp. 135-153.
- Brassier, R. (2007). *Nihil unbound: enlightenment and extinction*. Basingstoke: Palgrave Macmillan.
- (2008). The expression of meaning in Deleuze's ontological proposition. *Pli: The Warwick Journal of Philosophy*, 19, pp. 1-29.

- Braver, L. (2007). *A thing of this world: a history of continental anti-realism*. Evanston, IL: Northwestern University Press.
- Bryant, L.R. (2008). *Difference and givenness: Deleuze's transcendental empiricism and the ontology of immanence*. Evanston, IL: Northwestern University Press.
- Bryant, L.R. et al. (Eds.) (2011). *The speculative turn: continental materialism and realism*. Melbourne: re.press.
- Calamari, M. (2015). Riemann-Weyl in Deleuze's *Bergsonism* and the constitution of the contemporary physico-mathematical space. *Deleuze Studies*, 9(1), pp. 59-87.
- Canguilhem, G. (2005). The death of man, or the exhaustion of the cogito? Trans. by C. Porter. In: G. Gutting (Ed.). *The Cambridge companion to Foucault*. Cambridge: Cambridge University Press. pp. 74-94.
- Cassou-Noguès, P. (2010). The philosophy of the concept. In: L. Lawlor (Ed.). *The history of continental philosophy, vol. 4: phenomenology: responses and developments*. Chicago: University of Chicago Press. pp. 217-234.
- Cavaillès, J. (1970). On logic and the theory of science. Trans. by T.J. Kisiel. In: J.J. Kockelmans and T.J. Kisiel (Eds.). *Phenomenology and the natural sciences*. Evanston, IL: Northwestern University Press. pp. 353-412.
- Chalmers, D.J. (1996). *The conscious mind: in search of a fundamental theory*. Oxford: Oxford University Press.
- Colebrook, C. (2010). *Deleuze and the meaning of life*. London: Continuum.
- Cross, R. (2014). Medieval theories of haecceity. *Stanford Encyclopedia of Philosophy*, Summer 2014 Edition [Online]. Ed. by E.N. Zalta. Available at <<http://plato.stanford.edu/entries/medieval-haecceity>> [Accessed 31 July 2015].
- Cusset, F. (2008). *French theory: how Foucault, Derrida, Deleuze, & co. transformed the intellectual life of the United States*. Trans. by J. Fort et al. London: University of Minnesota Press.
- Dawid, R. (2013). *String theory and the scientific method*. Cambridge: Cambridge University Press.
- De Caro, M. (2010). Varieties of naturalism. In: R.C. Koons and G. Bealer (Eds.). *The waning of materialism*. Oxford: Oxford University Press. pp. 365-374.

- DeLanda, M. (1997). Immanence and transcendence in the genesis of form. *The South Atlantic Quarterly*, 96(3), pp. 499-514.
- (2002). *Intensive science and virtual philosophy*. London: Continuum.
- (2004). Philosophy as intensive science. In: H. Carel and D. Gamez (Eds.). *What philosophy is*. London: Continuum. pp. 51-72.
- DeLanda M. and Gaffney, P. (2010). The metaphysics of science: an interview with Manuel DeLanda. In: P. Gaffney (Ed.). *The force of the virtual: Deleuze, science, and philosophy*. London: University of Minnesota Press. pp. 325-332.
- DeLanda, M. *et al.* (2005). Deleuzian interrogations: a conversation with Manuel DeLanda and John Protevi. *Tamara: Journal of Critical Postmodern Organization Studies*, 3(4), pp. 65-88.
- Della Rocca, M. (2012). Rationalism, idealism, monism, and beyond. In: E. Förster and Y.Y. Melamed (Eds.). *Spinoza and German idealism*. Cambridge: Cambridge University Press. pp. 7-26.
- Deleuze, G. (1956). *Philosophie du surréalisme*, by F. Alquié. Reviewed in: *Les Études philosophiques*, 11(2), pp. 314-316.
- (1961). Lucrèce et le naturalisme. *Les Études philosophiques*, 16(1) [new series], pp. 19-29.
- (1974). Cours Vincennes – 14/01/74 (English version). [No translator]. [Online]. Available at <<http://www.webdeleuze.com/php/texte.php?cle=176&groupe=Anti%20Oedipe%20et%20Mille%20Plateaux&langue=2>> [Accessed 28 October 2014].
- (1988). *Bergsonism*. Trans. by H. Tomlinson and B. Habberjam. New York: Zone Books.
- (1991). *Empiricism and subjectivity: an essay on Hume's theory of human nature*. Trans. by C.V. Boundas. New York: Columbia University Press.
- (1995). *Negotiations 1972-1990*. Trans. by M. Joughin. New York: Columbia University Press.
- (2006a). *Two regimes of madness: texts and interviews 1975-1995*. Ed. by D. Lapoujade. Trans. by A. Hodges and M. Taormina. New York: Semiotext(e).

- (2008a). *Proust and signs: the complete text*. Trans. by R. Howard. London: Continuum.
- (2008b). *Kant's critical philosophy: the doctrine of the faculties*. London: Continuum.
- Deleuze, G. and Guattari, F. (1994). *What is philosophy?* Trans. by H. Tomlinson and G. Burchell. New York: Columbia University Press.
- (2004). *A thousand plateaus: capitalism and schizophrenia*. Trans. by B. Massumi. London: Continuum.
- Deleuze, G. and Parnet, C. (2004). *L'abécédaire de Gilles Deleuze*. [DVD]. P.-A. Boutang (dir.). Paris: Editions Montparnasse.
- (2006). *Dialogues II*. Trans. by H. Tomlinson and B. Habberjam. London: Continuum
- Deleuze, G. and Villani, A. (2007). Responses to a series of questions. [No translator]. *Collapse: Journal of Philosophical Research and Development*, 3, pp. 39-43.
- Dennett, D.C. (1995). *Darwin's dangerous idea: evolution and the meanings of life*. London: Penguin.
- Derrida, J. (1997). *Of grammatology*. Trans. by G.C. Spivak. Baltimore, MD: John Hopkins University Press.
- Dillet, B. (2013). What is called thinking?: when Deleuze walks along Heideggerian paths. *Deleuze Studies*, 7(2), pp. 250-274.
- Dosse, F. (1997a). *History of structuralism, vol. 1: the rising sign, 1945-1966*. Trans. by D. Glassman. London: University of Minnesota Press.
- (1997b). *History of structuralism, vol. 2: the sign sets, 1967-present*. Trans. by D. Glassman. London: University of Minnesota Press.
- (2010). *Gilles Deleuze and Félix Guattari: intersecting lives*. Trans. by D. Glassman. New York: Columbia University Press.
- Duffy, S.B. (2013). *Deleuze and the history of mathematics: in defense of the 'new'*. London: Bloomsbury.

- Durie, R. (2006). Problems in the relation between maths and philosophy. In: S.B. Duffy (Ed.). *Virtual mathematics: the logic of difference*. Manchester: Clinamen Press. pp. 169-186.
- During, E. (2004). 'A history of problems': Bergson and the French epistemological tradition. *Journal of the British Society for Phenomenology*, 35(1), pp. 4-23.
- Eklund, M. (2013). Trends and progress in philosophy. *Metaphilosophy*, 44(3), pp. 276-292.
- Engel, P. (1988). Continental insularity: contemporary French analytical philosophy. In: A.P. Griffiths (Ed.). *Contemporary French philosophy*. Cambridge: Cambridge University Press. pp. 1-19.
- Fabiani, J.-L. (1988). *Les philosophes de la république*. Paris: Minuit.
- (2010). *Qu'est-ce qu'un philosophe français?* Paris: Éditions de l'École des hautes études en sciences sociales.
- Faulkner, K.W. (2002). Deleuze in utero: Deleuze-Sartre and the essence of woman. *Angelaki: Journal of the Theoretical Humanities*, 7(3), pp. 25-43.
- Fink, H. (2006). Three sorts of naturalism. *European Journal of Philosophy*, 14(2), pp. 202-221.
- Flaxman, G. (2012). *Gilles Deleuze and the fabulation of philosophy: powers of the false, vol. 1*. London: University of Minnesota Press.
- Floyd, J. (2009). Recent themes in the history of early analytic philosophy. *Journal of the History of Philosophy*, 47(2), pp. 157-200.
- Foucault, M. (1998). Life: experience and science. Trans. by R. Hurley. In: M. Foucault. *Essential works of Foucault 1954-1984, vol. 2: aesthetics, method, and epistemology*. Ed. by J.D. Faubion. New York: New Press. pp. 465-478.
- (2002). *The order of things: an archaeology of the human sciences*. [No translator]. London: Routledge.
- Freud, S. (2001). *Beyond the pleasure principle*. In: S. Freud. *The standard edition of the complete psychological works of Sigmund Freud, vol. XVIII (1920-1922): beyond the pleasure principle, group psychology and other works*. Trans. and ed. by J. Strachey et al. London: Vintage. pp. 7-64.
- Friedman, M. (2000). *A parting of the ways: Carnap, Cassirer, and Heidegger*. Peru, IL: Open Court.

- (2012). Scientific philosophy from Helmholtz to Carnap and Quine. In: R. Creath (Ed.). *Rudolf Carnap and the legacy of logical empiricism*. Dordrecht: Springer. pp. 1-11.
- Gaffney, P. (2010). Science in the gap. In: P. Gaffney (Ed.). *The force of the virtual: Deleuze, science, and philosophy*. London: University of Minnesota Press. pp. 1-66.
- Gangle, R. (2014). Mathematics, structure, metaphysics: Deleuze and category theory. In: A. Beaulieu *et al.* (Eds.). *Gilles Deleuze and metaphysics*. Lanham, MD: Lexington Books). pp. 45-62.
- Glendinning, S. (2006). *The idea of continental philosophy: a philosophical chronicle*. Edinburgh: Edinburgh University Press.
- Gutting, G. (1989). *Michel Foucault's archaeology of scientific reason*. Cambridge: Cambridge University Press.
- Guyer, P. (2000). Absolute idealism and the rejection of Kantian dualism. In: K. Ameriks (Ed.). *The Cambridge companion to German idealism*. Cambridge: Cambridge University Press. pp. 37-56.
- Hallward, P. (2006). *Out of this world: Deleuze and the philosophy of creation*. London: Verso.
- Hallward, P. and Peden, K. (Eds.) (2012). *Concept and form, vol. 1: selections from the Cahiers pour l'analyse*. London: Verso.
- Hegel, G.W.F. (2008). *Outlines of the philosophy of right*. Trans. by T.M. Knox and S. Houlgate. Ed. by S. Houlgate. Oxford: Oxford University Press.
- Heidegger, M. (1996). *Being and time*. Trans. by J. Stambaugh. Albany, NY: State University of New York Press.
- Holdsworth, D. (2006). Becoming interdisciplinary: making sense of DeLanda's reading of Deleuze. *Paragraph*, 29(2), pp. 139-156.
- Houle, K. and Vernon, J. (Eds.) (2013). *Hegel and Deleuze: together again for the first time*. Evanston, IL: Northwestern University Press.
- Hylton, P. (1990). *Russell, idealism and the emergence of analytic philosophy*. Oxford: Clarendon Press.
- Hyppolite, J. (1971). *Figures de la pensée philosophique*. Paris: Presses Universitaires de France.

- (1974). *Genesis and structure of Hegel's Phenomenology of spirit*. Trans. by S. Cherniak and J. Heckman. Evanston, IL: Northwestern University Press.
- (1997). *Logic and existence*. Trans. by L. Lawlor and A. Sen. Albany, NY: State University of New York Press.
- Janicaud, D. (1997). *Ravaisson et la métaphysique. Une généalogie du spiritualisme français*. Paris: Vrin.
- (2001). *Heidegger en France, t. 2. Entretiens*. Paris: Albin Michel.
- Johnston, A. (2008). What matter(s) in ontology: Alain Badiou, the Hebb-event, and materialism split from within. *Angelaki: Journal of the Theoretical Humanities*, 13(1), pp. 27-49.
- Jones, G. (2009). Solomon Maimon. In: G. Jones and J. Roffe (Eds.). *Deleuze's philosophical lineage*. Edinburgh: Edinburgh University Press. pp. 104-129.
- Kant, I. (1998). *Critique of pure reason*. Trans. and ed. by P. Guyer and A.W. Wood. Cambridge: Cambridge University Press.
- (2004). *Prolegomena to any future metaphysics*. Trans. and ed. by G. Hatfield. Cambridge: Cambridge University Press.
- Kerslake, C. (2002). The vertigo of philosophy: Deleuze and the problem of immanence. *Radical Philosophy*, 113, pp. 10-23.
- (2004). Deleuze, Kant, and the question of metacritique. *The Southern Journal of Philosophy*, 42(4), pp. 481-508.
- (2009). *Immanence and the vertigo of philosophy: from Kant to Deleuze*. Edinburgh: Edinburgh University Press.
- Lærke, M. (2015). *L'art du portrait conceptuel. Deleuze et l'histoire de la philosophie*, ed. by A. Cherniavsky and C. Jaquet. Reviewed in: *British Journal of the History of Philosophy*, 23(2), pp. 393-396.
- Lærke, M. et al. (Eds.) (2013). *Philosophy and its history: aims and methods in the study of early modern philosophy*. Oxford: Oxford University Press. pp. 1-6.
- Land, N. (2011). *Fanged noumena: collected writings 1987-2007*. Ed. by R. Brassier and R. Mackay. Falmouth: Urbanomic.
- Lautman, A. (2011). *Mathematics, ideas and the physical real*. Trans. by S.B. Duffy. London: Continuum.

- Lawlor, L. (2003). *Thinking through French philosophy: the being of the question*. Bloomington: Indiana University Press.
- Lecourt, D. (1975). *Marxism and epistemology: Bachelard, Canguilhem and Foucault*. Trans. by B. Brewster. London: New Left Books.
- Lévi-Strauss, C. (1963). Reponses à quelques questions. *Esprit*, November 1963 Edition, pp. 628-664.
- (1966). *The savage mind*. Trans. by G. Weidenfeld. Letchworth: Garden City Press.
- Livengood, J. and Macherey, E. (2007). The folk probably don't think what you think they think: experiments on causation by absence. *Midwest Studies in Philosophy*, 31, pp. 107-127.
- Lord, B. (2009). Introduction. In: J. Mullarkey and B. Lord (Eds.). *The continuum companion to continental philosophy*. London: Continuum. pp. 1-8.
- (2011). *Kant and Spinozism: transcendental idealism and immanence from Jacobi to Deleuze*. Basingstoke: Palgrave Macmillan.
- Macherey, P. (1998). *In a materialist way: selected essays by Pierre Macherey*. Ed. by W. Montag. Trans. by T. Stolze. London: Verso.
- Mader, M.B. (2014). Whence intensity? Deleuze and the revival of a concept. In: A. Beaulieu *et al.* (Eds.). *Gilles Deleuze and metaphysics*. Lanham, MD: Lexington. pp. 225-247.
- Massumi, B. (1992). *A user's guide to Capitalism and schizophrenia: deviations from Deleuze and Guattari*. London: MIT Press.
- May, T. (2005). Gilles Deleuze, difference, and science. In: G. Gutting (Ed.). *Continental philosophy of science*. Oxford: Blackwell. pp. 239-257.
- McDaniel, K. (2009). Ways of being. In: D. Chalmers *et al.* (Eds.). *Metametaphysics: new essays on the foundations of ontology*. Oxford: Oxford University Press. pp. 290-319.
- (2010). A return to the analogy of being. *Philosophy and Phenomenological Research*, 51(3), pp. 688-717.
- McDowell, J. (1996). *Mind and world*. London: Harvard University Press.

- (2009). Avoiding the myth of the given. In: J. McDowell. *Having the world in view: essays on Kant, Hegel, and Sellars*. London: Harvard University Press.
- Melamed, Y.Y. (2013). Charitable interpretations and the political domestication of Spinoza, or, Benedict in the land of the secular imagination. In: M. Lærke *et al.* (Eds.). *Philosophy and its history: aims and methods in the study of early modern philosophy*. Oxford: Oxford University Press. pp.258-277.
- Merleau-Ponty, M. (2002). *Phenomenology of perception*. Trans. by C. Smith. London: Routledge.
- Milner, J.-C. (2008) *Le périple structural. Figures et paradigms*. Lagrasse: Verdier.
- Miquel, P.-A. (2010). Qu'y a-t-il de vital dans un organisme vivant? *Bulletin d'analyse phénoménologique*, 6(2), pp. 313-337.
- Moore, A.W. (2015). Being, univocity, and logical syntax. *Proceedings of the Aristotelian Society*, 115(1), pp. 1-23.
- Mullarkey, J. (1997). Deleuze and materialism: one or several matters? *The South Atlantic Quarterly*, 96(3), pp. 439-463.
- (2006). *Post-continental philosophy: an outline*. London: Continuum.
- Neil, D. (1998). The uses of anachronism: Deleuze's history of the subject. *Philosophy Today*, 42(4), pp. 418-431.
- Nietzsche, F. (1968). *The will to power*. Trans. by W. Kaufmann and R.J. Hollingdale. Ed. by W. Kaufmann. New York: Vintage.
- (2001). *The gay science, with a prelude in German rhymes and an appendix of songs*. Ed. by B. Williams. Trans. by J. Nauckhoff and A. Del Caro. Cambridge: Cambridge University Press.
- (2002). *Beyond good and evil: prelude to a philosophy of the future*. Ed. by R.-P. Horstmann and J. Norman. Trans. by J. Norman. Cambridge: Cambridge University Press.
- Norris, C. (2013). *Philosophy outside-in: a critique of academic reason*. Edinburgh: Edinburgh University Press.
- Olkowski, D.E. (2007). *The universal (in the realm of the sensible): beyond continental philosophy*. Edinburgh: Edinburgh University Press.

- (2012). *Postmodern philosophy and the scientific turn*. Bloomington: Indiana University Press.
- Papineau, D. (2009). Naturalism. *Stanford Encyclopedia of Philosophy*, Spring 2009 Edition [Online]. Ed. by E.N. Zalta. Available at <<http://plato.stanford.edu/entries/naturalism>> [Accessed 20 October 2013].
- Peden, K. (2011). Descartes, Spinoza, and the impasse of French philosophy: Ferdinand Alquié versus Martial Gueroult. *Modern Intellectual History*, 8(2), pp. 361-390.
- (2014). *Spinoza contra phenomenology: French rationalism from Cavailles to Deleuze*. Stanford, CA: Stanford University Press.
- Pettit, P. (2009). Naturalism. In: J. Dancy and E. Sosa (Eds.). *A companion to epistemology*, 2nd ed. Oxford: Blackwell. pp. 542-543.
- Pinto, L. (1987). *Les philosophes entre le lycée et l'avant-garde. Les métamorphoses de la philosophie dans la France d'aujourd'hui*. Paris: L'Harmattan.
- (2009). *La théorie souveraine. Les philosophes français et la sociologie au XX^e siècle*. Paris: Cerf.
- Prigogine, I. (1997). *The end of certainty: time, chaos, and the new laws of nature*. London: The Free Press.
- Prigogine, I. and Stengers, I. (1986). *La nouvelle alliance. Métamorphose de la science*. 2nd ed. Paris: Gallimard.
- Protevi, J. (2012). Deleuze and life. In: D.W. Smith and H. Somers-Hall (Eds.). *The Cambridge companion to Deleuze*. Cambridge: Cambridge University Press. pp. 239-264.
- (2013). *Life, war, earth: Deleuze and the sciences*. London: University of Minnesota Press.
- Protevi, J. and Bonta, M. (2004). *Deleuze and geophilosophy: a guide and glossary*. Edinburgh: Edinburgh University Press.
- Rae, G. (2014). *Ontology in Heidegger and Deleuze: a comparative analysis*. Basingstoke: Palgrave Macmillan.
- Rancière, J. (2003). *The philosopher and his poor*. Ed. by A. Parker. Trans. by J. Dury et al. Durham: Duke University Press.

- Redding, P. (2007). *Analytic philosophy and the return of Hegelian thought*. Cambridge: Cambridge University Press.
- (2009). *Continental idealism: Leibniz to Nietzsche*. London: Routledge.
- Rehbock, P.F. (1990). Transcendental anatomy. In: A. Cunningham and N. Jardine (Eds.). *Romanticism and the sciences*. Cambridge: Cambridge University Press. pp. 144-160.
- Richardson, A. (1997). Towards a history of scientific philosophy. *Perspectives on Science*, 5(3), pp. 418-451.
- Ricœur, P. (1963). Structure et herméneutique. *Esprit*, November 1963 Edition, pp. 596-627.
- Röllli, M. (2003). *Gilles Deleuze: Philosophie des transcendentalen Empirismus*. Vienna: Turia & Kant.
- Sauvagnargues, A. (2009). *Deleuze. L'empirisme transcendantal*. Paris: Presses Universitaires de France.
- Schliesser, E. (2011). Newton's challenge to philosophy: a programmatic essay. *Hopos: The Journal of the International Society for the History of Philosophy of Science*, 1(1), pp. 101-128.
- (2012). Newton and Spinoza: on motion and matter (and God, of course). *The Southern Journal of Philosophy*, 50(3), pp. 436-458.
- (2013a). Philosophic prophecy. In: M. Lærke *et al.* (Eds.). *Philosophy and its history: aims and methods in the study of early modern philosophy*. Oxford: Oxford University Press. pp. 209-235.
- (2013b). On the contrast between mythical and mistaken history... (yes, it's Thomas Nagel again). *New APPS: art, politics, philosophy, science*, 28 August [Blog]. Available at <<http://www.newappsblog.com/2013/08/on-the-contrast-between-mythical-and-mistaken-historyyes-its-thomas-nagel-again.html>> [Accessed 23 October 2014].
- Schrift, A.D. (2006). *Twentieth-century French philosophy: key themes and thinkers*. Oxford: Blackwell.
- Searle, J. (2007). Biological naturalism. In: M. Velmans and S. Schneider (Eds.). *The Blackwell companion to consciousness*. Oxford: Blackwell. pp. 325-334.

- Sellars, J. (2007). Gilles Deleuze and the history of philosophy. *British Journal of the History of Philosophy*, 15(3), pp. 551-560.
- Sellars, W. (1963). *Science, perception and reality*. Atascadero, CA: Ridgeview.
- Smith, D.W. (2012a). Deleuze and the history of philosophy. In: D.W. Smith and H. Somers-Hall (Eds.). *The Cambridge companion to Deleuze*. Cambridge: Cambridge University Press. pp. 13-32.
- (2012b). *Essays on Deleuze*. Edinburgh: Edinburgh University Press.
- Sokal, A.D. and Bricmont, J. (1997). *Impostures intellectuelles*. Paris: Odile Jacob.
- (1998). *Fashionable nonsense: postmodern intellectuals' abuse of science*. New York: Picador.
- Somers-Hall, H. (2010). Hegel and Deleuze on the metaphysical interpretation of the calculus. *Continental Philosophy Review*, 42(4), pp. 555-572.
- (2012a). *Hegel, Deleuze, and the critique of representation: dialectics of negation and difference*. Albany, NY: State University of New York Press.
- (2012b). Deleuze's philosophical heritage: unity, difference, and onto-theology. In: D.W. Smith and H. Somers-Hall (Eds.). *The Cambridge companion to Deleuze*. Cambridge: Cambridge University Press. pp. 337-356.
- (2013). Deleuze's use of Kant's argument from incongruent counterparts. *The Southern Journal of Philosophy*, 51(3), pp. 345-366.
- (2015). Feuerbach and the image of thought. In: C. Lundy and D. Voss (Eds.). *At the edges of thought: Deleuze and post-Kantian philosophy*. Edinburgh: Edinburgh University Press. pp. 253-271.
- Sorell, T. and Rogers, G.A.J. (Eds.) (2005). *Analytic philosophy and history of philosophy*. Oxford: Oxford University Press.
- Soulié, C. (1998). Le destin d'une institution d'avant-garde: histoire du département de philosophie de Paris VIII. *Histoire de l'éducation*, 77(1), pp. 47-69.
- Stengers, I. (2010). Experimenting with *What is philosophy?* In: C. Bruun Jensen and K. Rødje (Eds.). *Deleuzian intersections: science, technology, anthropology*. Oxford: Berghahn Books. pp. 40-56.
- Strawson, G. (2008). Real materialism. In: G. Strawson. *Real materialism and other essays*. Oxford: Oxford University Press. pp. 19-52.

- Tally, R.T., Jr. (2010). Nomadography: the 'early' Deleuze and the history of philosophy. *Journal of Philosophy: A Cross-Disciplinary Inquiry*, 5(11), pp. 15-24.
- Taylor, C. (2007). *A secular age*. London: Harvard University Press.
- Thomson, I.D. (2005). *Heidegger on ontotheology: technology and the politics of education*. Cambridge: Cambridge University Press.
- Tiles, M. (1984). *Bachelard: science and objectivity*. Cambridge: Cambridge University Press.
- Tissandier, A. (2013). *Affirming divergence: Deleuze's reading of Leibniz*. Ph.D. thesis, University of Warwick.
- Toscano, A. (2010). Everybody thinks: Deleuze, Descartes and rationalism. *Radical Philosophy*, 162, pp. 8-17.
- Turetzky, P. (1998). *Time*. London: Routledge.
- Turner, J. (2010). Ontological pluralism. *The Journal of Philosophy*, 107(1), pp. 5-34.
- Voss, D. (2011). Maimon and Deleuze: the viewpoint of internal genesis and the concept of differentials. *Parrhesia: A Journal of Critical Philosophy*, 11, pp. 62-74.
- (2013). *Conditions of thought: Deleuze and transcendental ideas*. Edinburgh: Edinburgh University Press.
- Vrahimis, A. (2013). *Encounters between analytic and continental philosophy*. Basingstoke: Palgrave Macmillan.
- Vuillemin, J. (1962). *La philosophie de l'algèbre*. Paris: Presses Universitaires de France.
- Wahl, J. (1932). *Vers le concret. Études d'histoire de la philosophie contemporaine*. Paris: Vrin.
- (1944). *Existence humaine et transcendance*. Neuchâtel: La Baconnière.
- Welchman, A. (1997). Machinic thinking. In: K. Ansell Pearson (Ed.). *Deleuze and philosophy: the difference engineer*. London: Routledge. pp. 211-229.

- Widder, N. (2003). Thought after dialectics: Deleuze's ontology of sense. *The Southern Journal of Philosophy*, 41(3), pp. 451-476.
- Wiel, R. van de (2008). Deleuze and Sartre: from praxis to production [Online]. Available at <<http://www.raymondvandewiel.org/deleuze-sartre.html>> [Accessed 11 May 2015].
- Williams, J. (2006). Science and dialectics in the philosophies of Deleuze, Bachelard and DeLanda. *Paragraph*, 29(2), pp. 98-114.
- Williamson, T. (2007). *The philosophy of philosophy*. Oxford: Blackwell.
- Worms, F. (2005). Between critique and metaphysics: science in Bergson and Brunschvicg. Trans. by R. Mackay. *Angelaki: Journal of the Theoretical Humanities*, 10(2), pp. 39-57.
- Zach, R. (2015). Hilbert's program. *Stanford Encyclopedia of Philosophy*, Summer 2015 Edition [Online]. Ed. by E.N. Zalta. Available at <<http://plato.stanford.edu/entries/hilbert-program>> [Accessed 28 August 2015].
- Zalamea, F. (2011). Albert Lautman and the creative dialectic of modern mathematics. In: A. Lautman. *Mathematics, ideas and the physical real*. Trans. by S.B. Duffy. London: Continuum. pp. xxiii-xxxvii.