# Conceptual Fragmentation and the Rise of Eliminativism

J. H. Taylor and Peter Vickers

*University of Durham, UK* *j.h.taylor@durham.ac.uk* *peter.vickers@durham.ac.uk*

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Pluralist and eliminativist positions in philosophy – and other disciplines – have proliferated in recent decades. This paper emphasises the sheer scale of this movement: we start by summarising twenty debates which have been affected, thus illustrating how often debates have been transformed by the introduction of pluralist and/or eliminativist thinking. We then provide an explanation of why this shift of philosophical terrain has occurred, an explanation which in turn predicts that its reach will extend to other debates currently unaffected, and for good reasons. We go on to detail the landscape of various different pluralist and eliminativist positions one may favour. We ultimately argue for pluralism at the meta-level: whether one should implement (some stripe of) pluralism or eliminativism depends on the context of discussion and the details of the debate at hand. We use this analysis to dissolve debates between 'pluralists' and 'eliminativists' in various domains.

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**1. Introduction**

We are all involved in disputes where the content of certain concepts is paramount. Think of the concepts in question, the ones that matter most to your personal projects (JUSTICE, TRUTH, SCIENTIFIC METHOD, VALIDITY, whatever).[1] Are you a pluralist about those concepts? Do you believe each concept has several distinct meanings, no one of which is the privileged or correct meaning? If not, this is something worth thinking very carefully about. It is only a slight exaggeration to say that some sort of pluralism – or perhaps eliminativism – is taking over debates in philosophy (and not just in philosophy). That is to say, important concepts, thought for decades (sometimes centuries) to have a single underlying meaning are now widely thought to have multiple distinct

[1] We follow convention in using capitals to denote concepts.

meanings, no one of which is 'correct' or 'best'. Let us make this claim concrete right away with twenty prominent examples:

1. *Species*. The concept SPECIES has been understood in importantly different ways throughout the history of biology. Contrary definitions have competed in the literature, and this competition continues to this day to some extent (cf. Ghiselin 1987, Mayr 1987, Lee 2003). But in the last thirty years or so pluralism has prevailed as the dominant opinion: there are various different species concepts which are all important, and no one of which is privileged. The most prominent examples are BIOSPECIES, ECOSPECIES, and PHYLOSPECIES (see e.g. Kitcher 1984, Ereshefsky 1992a and 1992b, Dupré 1993, Brigandt 2003), but recently the way that 'species' is defined in *microbiology* has also become an important consideration in this debate (Ereshefsky 2010, Ereshefsky and Reydon forthcoming).
2. *Acid*. For a very long time it was assumed as a given that there would be a single answer to the question 'What makes something an acid?', and different theories competed in the literature (see Thagard 1990 for a brief history). Gradually it came to be universally accepted that there are significantly different acid concepts – including the Arrhenius, Brönsted-Lowry, and Lewis conceptions of 'acid' – no one of which is 'best' or 'correct' (see Stanford and Kitcher 2000, Hendry 2005).
3. *Scientific method*. Attempts to articulate 'the scientific method' are as old as philosophy of science itself. For decades (at least) nobody seriously considered the idea that 'scientific method' could be different in different cases. Throughout the 20$^{th}$ century there was fierce debate concerning the nature of the scientific method, with all the big names taking part. Today a pluralist approach is "current orthodoxy" (Sankey 2010, p.255): there is no single scientific method which is 'best' or 'correct'.

4. *Intelligence*. INTELLIGENCE is a classic case of a concept which once had – or was thought to have – a single meaning: intelligence tests were common and taken very seriously. Today 'intelligence' is usefully described as an umbrella term for many (importantly) different respects in which a human being might cognitively perform in a favourable way: emotional intelligence, social intelligence, IQ, analytical intelligence, general knowledge, etc. Many of these individual concepts are also thought to further fragment. Although pluralism about INTELLIGENCE is quite widely accepted, the *extent* of the plurality is much debated. Further, some have suggested that 'intelligence' really is *only* an umbrella term, such that 'general intelligence' doesn't exist in any significant sense (e.g. Howe 1990, Schlinger 2003).

5. *Race*. Whether we are eliminativists or realists about the race concept, it is widely accepted that there are many different conceptions in the literature.[2] A few of the more prominent conceptions are: (i) cladistic race (which focusses on ancestry), (ii) biological race (with a focus on one or another feature of human biology – there are several options here), (iii) one or another 'purely social' conception of race, and (iv) a 'folk' conception of race. In academic circles, it is increasingly rare to see somebody argue that just one of these conceptions is 'correct' or 'best' in all contexts.

6. *Consciousness*. Ned Block (1995) describes CONSCIOUSNESS as a 'mongrel' concept. Block's main claim is that there are at least two importantly different concepts of 'consciousness' (to use Block's terminology, 'P-consciousness' and 'A-consciousness') and that various theories in cognitive science purport to explain the former, but they only really explain the latter.[3] However, it has also been argued that there are at least nine different concepts of consciousness (Hill 2009, Ch.1). Increasingly, the claim that CONSCIOUSNESS is a single unified concept that refers to only one kind of thing is

[2] For an entry to this vast literature see, e.g., Appiah 1992, 1996, Du Bois 1996, Taylor 2000, Andreasen 2000, and Glasgow 2003.

[3] The literature on this argument is truly vast. See Dennett (1995), Baars (1995), Chalmers (1997) and Clark (2000) for some different views on Block's argument.

rejected. In a similar vein, Irvine (2012, Ch.6) argues that the concept CONSCIOUSNESS refers to several importantly distinct kinds of entity, and fails to pick out a natural kind (see also Rey 2010).

7. *Attention*. In the debates within psychology over the nature of attention (and its relationship to related faculties of the mind such as consciousness) we find some thinkers (Styles 1997, Duncan 2006) suggesting that the concept be understood as a Wittgensteinian cluster concept which can be defined in several ways, no one definition being privileged. The same basic point has recently been made in the philosophical literature by Taylor (2014). We also find pluralism about attention based not merely upon the fact that there are several different attention *concepts*, but also based upon the claim that 'attention' refers to several importantly distinct processes in the brain (Allport, 1993). This line of thinking brings some to claim that attention does not exist (Anderson, 2011).

8. *Health*. What is it to be healthy? Over many decades – even centuries – various different definitions of 'health' have competed, put forward by various healthcare professionals, politicians, philosophers, sociologists, and many others. Blaxter (2004, ch.1) mentions (among many other options) health as absence of illness, health as deviance from normality, and health as some kind of functional or 'homeostatic' property of an organism. Indeed, even *within* each of these general approaches to the question 'what is health?' we find a plethora of different available definitions of 'health'. It is increasingly common in the literature to see writers advocate pluralism, often on the grounds that some of these definitions of health will fulfil certain theoretical roles, and others will fulfil others. DISEASE and ILLNESS are also strong candidates for pluralism (see e.g. Hesslow 1993).

9. *Memory*. Psychologists today typically make distinctions between a great many different subvarieties of 'memory' such as working memory, short term memory, iconic memory,

and long term memory (see e.g. Baddeley et al. 2009). These 'kinds of memory' operate in importantly different ways, making use of different systems in the brain. And within these categories further subdivisions are routinely made (e.g. between 'declarative' and 'non-declarative' long term memory). This taxonomy of memory is an ongoing project: recently the concept of 'iconic memory' has bifurcated into 'pure' iconic memory and 'fragile visual short term memory' (e.g. Sligte et al. 2008 and 2009). Perhaps 'working memory' will be next – as Ned Block writes: '[O]ne of the first things that strikes a reader of the "working memory" literature is that the term *working memory* is defined differently by different theorists' (2007, p.539).

10. *Logical consequence*. For decades it was assumed that there would be one single system of logic that would be 'best' or 'correct'. An alternative to this view is to embrace classical logic, intuitionistic logic, relevant logic, fuzzy logic, and various paraconsistent logics (to name just a few of the options) as equally legitimate and worthy of acceptance for different reasons. Increasingly it has come to be widely accepted that no one logic is privileged (e.g. Beall and Restall, 2000 and 2006). This leads to pluralism about *systems of logic*, but more fundamentally one can see this pluralism as supervening on a deeper pluralism concerning the way *logical consequence* is handled by these different logics.

These are ten of the more prominent examples, where pluralism is a live and popular option (if not the orthodoxy). It is easy to mention another ten examples where pluralism seems to us to be either (i) implicitly accepted by those in the relevant community, or else (ii) the 'up and coming' position of choice:

11. *Concept*. Machery (2005, 2009) argues that 'concepts' do not form a natural kind: instead we have (at least) prototypes, exemplars, and theories, and these are significantly different kinds of entity. Machery himself goes on to urge that we should *eliminate* concept-talk from debates in philosophy, psychology, and cognitive science.

Those who argue against this move generally at least agree with Machery that 'concept' refers to several significantly different kinds of thing (e.g. Weiskopf 2009, Prinz 2010).

12. *Life*. Machery (2012) notes the very different definitions of 'life' put forward by evolutionary biologists, molecular biologists, synthetic biologists, astrobiologists, ethicists, cosmologists, and computer scientists. The vast majority of the relevant debates have been carried out on the assumption that only *one* definition of 'life' could be correct. Machery argues that we no longer have good reason to make this assumption: significantly different definitions of 'life' can be more or less appropriate for different theoretical roles one wishes them to play in the context of a specific debate.

13. *Innate*. Griffiths (2002) distinguishes many of the important, distinct ways in which the term 'innate' has been used, and recommends we 'do without innateness' (p.81ff.) on the grounds that we don't need it, and that the way it is currently used encourages miscommunication, and hinders progress. Even if we disagree with Griffiths that we can 'do without' the concept INNATE, we can still agree that the word 'innate' is used in a variety of significantly different ways in the literature, no one of which is privileged.

14. *Scientific theory* (general). We have had several decades of dispute over the question 'What is a scientific theory?' Magnus (2012) and Vickers (2014) note the wide range of possible answers to this question available in the literature. Both authors argue that any one of the proposed answers can give us a good tool for analysing scientific practice, and that we should reject the further question of which is *really* the theory concept, or which is 'best'. Vickers however goes a step further and recommends an eliminativist approach (which he puts to work in Vickers 2013).

15. *Scientific theory* (specific). If we are pluralists about the general 'theory' concept, that will affect our view of the identity of any specific scientific theory. But even if we are not, we might think that there are different ways to delineate some specific scientific theory, useful for different purposes. This has even been suggested for theories which are as

'rigorously defined' as classical mechanics. Fletcher (2012) argues the case here (partly drawing on Malament 2008, Wilson 2009, and others).

16. *Natural kind*. The philosophical challenge to develop a good account of what natural kinds are has been seen by many thinkers as a request for one unified account of natural kinds, privileged above any others. Even today, some philosophers claim that their own account of natural kinds is privileged, and hence incompatible with other accounts (e.g. Boyd, 1989 and 1991, Ellis 2001).[4] Others have argued that there are several different kinds of natural kinds, each of which is suited to certain theoretical purposes in particular domains, and no one of which has privileged status as *the* correct account of natural kinds (e.g. Ereshefsky, 2001). A particularly interesting version of this view is that of Dupré (1993) who argues not only that different natural sciences operate using different natural kinds, but that 'folk' kinds such as the kinds of gastronomy, gardening, and folkbiology are as valid as those of natural science, such as biology or physics.

17. *Art*. The question 'What is art?' has a long and varied history. Given the plethora of different accounts on the table, it is unsurprising that a version of art concept pluralism has been developed. Uidhir and Magnus (2011) suggest that there are at least four different concepts of 'art', each of which will be suitable to serve different purposes. Thus it is argued that we don't have grounds for supposing that any one concept of art will be 'correct' or 'best'.

18. *Physicalism*. Among the most vexed questions in the literature on the mind-body problem is how we should understand 'the physical', and correlatively how we should understand views that specifically make claims about 'the physical' world. Over several decades a great many different definitions of 'physicalism' have been put forward. Some ally their account with the ontology of current physics (e.g. Ney, 2008; cf. Melnyk, 1997). Thinkers such as Ney accept that physicalism (so formulated) is probably false, but see it

[4] Though Boyd himself sometimes says some things that imply he takes a pluralistic attitude towards different kinds of natural kind (1991, pp.128-129).

as the best available option we have now, or as a methodology or attitude to take, rather than a thesis that is true or false. There are also formulations of physicalism in terms of a *completed* physics (Dowell, 2006), and many other formulations besides (e.g. Strawson 2003, Papineau 2002, Petit 1993). Chalmers (2011, pp.533-534) suggests that we should understand these different concepts of 'physicalism' as simply different doctrines, no one of which deserves the name 'physicalism' any more than the others.

19. *Person*. PERSON is a concept upon which much weight has been placed in a number of disputes, and in a number of different disciplines. Numerous contrary suggestions have been made by thinkers as far back as you care to consider, and somewhat independently in various different fields such as law, theology, zoology, and of course philosophy. Considering all this, Teichman (1985) argues that 'person' is not the name of a 'broad natural kind', and has several senses. Gordijn (1999) goes further and argues that we should eliminate person-talk, as least in bioethical debates, since in any specific context we can say what we mean more clearly using other terms.

20. *Imagination*. Kind (2013) argues that no one faculty can account for all of the explanatory work that has been traditionally assigned to 'the imagination'. She concludes that 'imagination' is a term that refers to a heterogenous collection of different entities, some of which can account for things such as modal knowledge, others of which can account for our engagement with fiction, and so on.

The list could really be extended *ad nauseum*.[5] The reader may think at this stage 'this is all trivial, of course people have had different views about how to define different concepts!' Now if this was all our claim amounted to then indeed it *would* be trivial. Descartes, Spinoza, Locke, Leibniz, and Hume

[5] Other obvious candidates include JUSTICE, VALUE, SCIENCE (see e.g. Newton-Smith 2001, p.2), HARD (see e.g. Wilson 2006, p.350), BELIEF (see e.g. Needham 1972, p.131), JUSTIFICATION (see e.g. Alston 2005), PERSONAL IDENTITY (see e.g. Shoemaker 2007), CHEMICAL BOND (see e.g. Hendry 2008), and COLOUR (see e.g. Chalmers 2011).

had – between them – many different conceptions of 'personal identity', for example. But note what never happened: none of these individuals ever seriously considered that there might be several different ways to think about 'personal identity', without any one way being 'correct' or 'best'. This is the distinctive development we find in each of the twenty examples given above, and it is *this* phenomenon that we wish to examine. For each concept one can form that staple question of philosophy 'What is X?', where X stands for 'innateness', 'memory', 'a concept', and so on, and in each case the (short) answer is 'X is many things'.

We will use the term 'conceptual fragmentation' to refer to any case where a certain term has been found to have multiple distinct meanings, no one of which is privileged, and several of which are retained for certain theoretical uses. This is intended to cover cases where the term is ambiguous, as well as cases where the term refers to a variety of different kinds of entity (the distinctions between these two views will be analysed later in the paper). With this preliminary characterisation in place, we will refine it further as and when refinement is required. As we shall see at length, when conceptual fragmentation does occur there are a variety of different reactions one might have. One might, for example, accept that a certain term has multiple different possible meanings, no one of which is privileged, but insist that we should *still use the original term* in our investigations. Alternatively, as seen within the list of examples given above, sometimes thinkers take conceptual fragmentation as justification for retaining the different individual meanings whilst *eliminating* the original term that has been subject to fragmentation. We introduce the term 'conceptual fragmentation' to capture what is common to all of these positions: they all agree that the original term has multiple distinct meanings, no one of which is privileged, and several of which are useful for various purposes.

The given list of twenty examples can form the basis of a crude inductive argument for the claim that we should expect cases of fragmentation to proliferate in the future. Given the wide range of very different debates on the list, the question naturally arises for a crucial concept in any other debate 'Why *wouldn't* this other concept also be susceptible to the same kind of pluralistic

treatment?' We think that this inductive argument is reasonable support for the claim that we can expect conceptual fragmentation to proliferate in the coming years in a great many more debates. However, we also believe that we can do better than this. Perhaps things changed (are changing) in these twenty debates for some underlying reason which can be identified. Perhaps what gave rise to these changes was a particular *way* that the debates in question were carried out. And perhaps this 'way' is widespread throughout philosophy.

We turn to these issues in section 2. We explain *how* conceptual fragmentation occurs, and this leads to an argument for the claim that conceptual fragmentation will occur (or ought to occur) with great frequency in many debates, both inside and outside of philosophy. Important ingredients in this argument are: (i) the death of the classical theory of concepts (and related facts concerning the development of language, concepts, and meanings), (ii) the relentless increase in the phenomena to be explained within any given field over time, and, closely related to this, (iii) the multiplication of human aims, interests, and pursuits over time.

Section 2 will bring into focus certain important distinctions, and in Section 3 we will outline several different pluralist and eliminativist positions which are available. This further leads us to ask the question which of these positions should be adopted in a given context, and we offer a means for resolving (or perhaps better: dissolving) many of the debates in the literature between 'pluralists' and 'eliminativists'. In Section 4 we turn to a number of objections and replies; Section 5 is the conclusion.

**2. The road to conceptual fragmentation**

In this section we will offer an explanation as to why cases of conceptual fragmentation are on the rise. We outline a three-step process which is sufficient for conceptual fragmentation. Given the nature of the explanation, we argue that there is good reason to think that conceptual

fragmentation will continue to occur for a great many more concepts both inside and outside philosophy.

We can start by noting that archetypally, within philosophy, questions often take the form 'What is x?', where 'x' is a particular term we are interested in. This is obvious to anyone with a passing interest in philosophy: 'What is knowledge?', 'What is truth?', 'What is science?', 'What is the mind?' and so on are paradigmatic philosophical questions, and are typically used to introduce students to the subject. Of course, many answers have been given to these proposed questions. When such answers are given, their worth obviously has to be judged. What criteria do we judge such an answer by? One particularly prominent criterion (which is more often than not unstated) is what we shall call the 'extensional adequacy criterion' (EAC):

> Any answer to the question 'What is x?' should not *exclude* any cases which certainly *are* x, and not *include* any cases which certainly are *not* x.

The basic idea behind the EAC is that if one aims to say *what x is*, then one's view should not be subject to counterexamples. Concrete examples help to illustrate the kind of effect this criterion has in the debates in question. It is well known that there is a vast literature surrounding the question 'what is knowledge?' and answers to this question have repeatedly been judged by the EAC. Most famously, the analysis of knowledge as 'justified true belief' was attacked by Gettier (1963), on the grounds that it *included too much*. That is to say, it counted certain things as instances of knowledge which are certainly not knowledge. This is probably the most obvious example of the EAC at work, and what followed in epistemology was (largely) an extended attempt to meet it. Plantinga (1993) attempted to give his own analysis of knowledge, to which Zagzebski offered counterexamples (1994), and we find a similar dialectic between the account of knowledge offered by Nozick (1981) and the counterexamples levelled by Kripke (2011, ch.7). The debates over the question 'what is knowledge?' have had a characteristic structure: a view is put forward, and then it is pointed out

that the view counts certain things that are not knowledge as knowledge, and certain things that are knowledge as not knowledge. This is the EAC clearly at work.[6]

The EAC almost always lurks in the background of debates that have the kind of account-counterexample structure that we see obviously in the debates over 'what is knowledge?' We similarly see it in debates over the question 'what is science?' (Kuhn, Popper, Laudan, etc) as well as 'what is art?' (e.g. Zangwill 1995, and Dickie 2001) and 'what is life?' (see Machery 2012). In all of these debates we find the EAC operating to constrain proposed definitions of the concept in question. We believe there is good reason to think that these debates often give rise – sooner or later – to conceptual fragmentation and also to the kind of pluralist and eliminativist positions we have encountered. Our reasons for thinking this are linked to the death of a particularly prominent theory of concepts within cognitive science and the philosophy of concepts: the definitional view.

It was at one point a popular view that the content of our concepts derived from definitions: we understand the concept BACHELOR from associating with it a certain set of necessary and sufficient conditions, something like UNMARRIED MAN. On this view, being an unmarried man is necessary and sufficient to be a bachelor, and this is how we understand what the concept BACHELOR means. For this view, concepts get their content from having *definitions.*[7]

It is safe to say that this definitional view is now largely dead within both cognitive psychology and the philosophy of concepts.[8] It will be helpful to quote Fodor on the matter:

> [T]hese days almost nobody thinks that concepts are definitions… There are practically no defensible examples of definitions; for all the examples we've got, practically all words (/concepts) are undefinable. (1998, pp.44-45)

[6] Recently, many thinkers have given up on trying to offer an analysis of KNOWLEDGE (e.g. Williamson 2000).
[7] Typically, definitionists claimed that *most* concepts derive their content from definitions, whilst a few are primitive. This will not matter for present purposes.
[8] Though we certainly do not want to claim that literally *no one* holds the definitional view any more. Jackendoff (1992) holds something like the view.

Since 1998 the view that concepts cannot be defined has only gained wider acceptance (cf. Machery 2009, p.80ff). Several factors contributed to the death of definitionism, one of the most prominent being (as Fodor notes) that there seem to be no uncontroversial examples of definitions of any concept whatsoever. Any proposed definition was either circular, or subject to counterexamples. For example, it was often said that BACHELOR cannot have the content UNMARRIED MAN, as that would count the Pope as a bachelor. It would also count somebody who has lived with his partner *as if* married for 30 years as a bachelor. Attempts to revise the definition of the concept BACHELOR have met with similar criticism. Indeed, as Fodor (1981) has argued, even supposedly simple concepts such as 'paint' (taken as a transitive verb) resist definitions.[9]

In the wake of the death of definitionism, many new theories of concepts have gained prominence.[10] Whilst each of these theories remains controversial in its own ways, all are unanimous in the rejection of the claim that concepts in general can be defined. Now, if we take seriously the death of definitionism, then it gives us a way to explain why there are so many different proposed definitions of the relevant terms *no one of which is privileged above the others.* To see this, suppose we have some term and three different proposed definitions, call them $D_1$, $D_2$ and $D_3$. If (almost) no concepts can be given definitions, then we would expect $D_1$, $D_2$ and $D_3$ all to fail by the EAC. Typically the debate will then progress to considering other proposed definitions, and when such definitions are judged by the EAC all of them will fail too. Furthermore, we would expect that we *could never* produce a definition that succeeds by the EAC. The reason is that this is simply not how our concepts work: they are structured in such a way that it is inappropriate to attempt to

[9] Definitions intended as providing synonyms, and stipulative definitions, don't present such a problem, of course.

[10] We are thinking of nativism (Fodor, 2008), prototype theory (Rosch, 1978), theory theory (Carey, 2009), exemplar theory (Medin and Schaffer, 1978), neo-empiricism (Prinz, 2002) or some mixture of these theories (Machery, 2009).

define them. So long as debates over 'What is x?' are conducted in the light of the EAC, then what will result is a collection of different proposed definitions which all fail to be 'perfect'.[11]

When a debate reaches a point where there are several proposed definitions of a certain term available, all of which fail by the EAC, this is the first step on the road to conceptual fragmentation, but it is not sufficient. If the community are all definitionists, then although there are various definitions in the literature, nobody will care about the ones which face counterexamples; these definitions will be forgotten about since they are 'wrong'. And even if somebody accepts that no definition will *ever* be 'perfect' in its extensional adequacy, we don't necessarily reach fragmentation. In that case one might still retain a monistic outlook, insisting that we should forget about all the definitions put forward and develop a (single, correct) 'family resemblance' account of the concept in question. By contrast, for conceptual fragmentation as described in the previous section to occur, it is not sufficient that a plethora of different definitions are on the table. To take us to conceptual fragmentation, the community needs to come to believe that some (several) of the definitions put forward for a given concept are *worth keeping*, for whatever reason.[12]

This step can be separated into two smaller steps: (i) coming to judge definitions not by the EAC, but instead by whether they are theoretically useful, and (ii) finding that *more than one* definition of a given term/concept is theoretically useful.[13] Thinking about (i) to start with, one might

[11] Given the near total abandonment of definitionism in the philosophy and psychology of concepts, we do not think that it is inaccurate to say that the view is now dead. However, notice that we need not commit to the claim that *all* concepts are undefinable in order to support our view. It could be that our concepts are 'definable' in some attenuated sense, but human beings lack the cognitive capacity to access these definitions. We find such a view deeply unattractive, and we do not know what reason one might have for holding it, but it is compatible with what we have said. It could also be that there are some (rare) cases of definable concepts – e.g. CIRCLE and GRANDMOTHER (cf. Laurence and Margolis, 1999) – but that *almost* all of our concepts are undefinable. Or, at least, almost all *philosophically interesting* concepts are undefinable. We embrace the death of definitions, but these slightly weaker claims are also compatible with our view, and sufficient for our arguments.

[12] Of course, there is *some* sense in which we might say that 'conceptual fragmentation' has occurred when we merely have a variety of different proposed definitions on the table. However, we reserve the term 'conceptual fragmentation' for the more interesting situation where there are a variety of proposed definitions *several of which are taken to be important by the community in question*.

[13] Alternatively, perhaps it could be agreed that the different definitions correspond to different more-or-less 'natural' kinds in the world: what we originally thought was a single type of thing is actually a multitude of different kinds of thing. We will return to issues concerning 'natural kinds' in Section 4, below.

ask the question why we should expect any of the definitions put forward in the spirit of definitionism to be theoretically useful. One of the main reasons, we submit, is that when a definition is put forward it is usually put forward *along with a use*.

For example, consider the question: 'what is it for something to count as a scientific explanation?' The 'deductive-nomological' (DN) account tells us that an explanation consists in a deduction which involves at least one law of nature. The flagpole-shadow case is a famous counterexample: the length of a flagpole's shadow does *not* feature in an explanation of the length of the flagpole, as this account suggests. So, when the *causal* account of scientific explanation was put forward it was stressed that this new account makes perfect sense of this example: the length of the pole causally affects the length of the shadow, but the length of the shadow *doesn't* causally affect the length of the pole. Now, some people wonder whether the causal account itself has serious problems and/or counterexamples.[14] But most would agree that, even if it does, it still does a good job of explaining what is going on in the flagpole-shadow case, and also in many other cases. Definitions of 'health', 'illness', and 'disease' are other obvious examples. Within 'disfunction' theories of disease, Wright (1973) provides a definition to avoid counterexamples aimed at Boorse (see Cooper 2002). This new definition can remain useful for understanding the cases it was designed to explain, even if it can't work as a global theory of disease.[15] Similarly, phenomenological accounts of disease can be useful for understanding (certain aspects of) certain cases where naturalistic accounts have trouble, even if phenomenological accounts also fall short in certain contexts (e.g. anorexia nervosa – see Carel 2008, Ch.1).

Finally, consider theories of the 'scientific method'.[16] Three of the major theories put forward in the 20th century are the hypothetico-deductive (HD) method, Popperian falsificationism,

[14] For an entry to the (burgeoning) literature on *non*-causal explanation see e.g. Skow (2014).
[15] Disfunction doesn't appear to be sufficient for disease, if we consider people taking contraceptive pills, to give one example. And it doesn't appear to be necessary for disease, if we consider people with HIV, for example.
[16] Possible differences between a *theory* of X and a *definition* of X will not matter here.

and a Kuhnian method largely based on 'normal science' problem solving. As each one of these was put forward and defended, concrete scientific episodes from the history of science were put forward as evidence of the applicability and usefulness of the theory. Critics would then put forward other concrete examples which posed problems. In the end all agreed that, actually, all of the theories can be 'good' in the sense that science works in many different ways, and we shouldn't expect a single theory of the scientific method which can accommodate all possible cases. The concrete cases put forward to support each account *remain* cases helpfully explicated within the terms of that account, even after it becomes accepted that it can't possibly stand as a general theory of the 'one, true scientific method'. Of course, some accounts/definitions will (intuitively) have fewer counterexamples (or more applications) than others. But a definition with many counterexamples (and few applications) might nevertheless be incredibly useful and important for a certain cluster of cases.

One might worry that merely being able to *accommodate* a case is not enough to show that some theory or definition is *useful*. Consider again the DN account of scientific explanation and the flagpole-shadow case: everyone agrees the account fails to explain the length of the flagpole, but what about explaining the length of the shadow? The latter doesn't present a *counterexample* to the DN account, but is the DN account *useful* for describing this case? One might insist that only the *causal* theory of explanation gets to the heart of what is going on, even when we consider the explanation of the length of the shadow, such that we would be better off forgetting about the DN account entirely. However, this is to forget the crucial fact that *no* theory of scientific explanation can ever be perfectly extensionally adequate. And that includes (whatever version of) the causal account. If we assume that a theory that fails even once can't be useful and illuminating even for cases where it seems to fit, then we will find ourselves in the absurd position of throwing out all our theories.

In summary, this is what we believe contributes to conceptual fragmentation in a great many cases: we start with attempts to give necessary and sufficient conditions for the concept in question. This leads to a collection of different proposed definitions. None of the definitions can give a perfect account of the content of the original concept (because concepts in general cannot be defined) but several of the proposed definitions will be useful in a variety of different contexts, and this is what justifies their preservation. Crucially, the 'death of definitionism' is *not* the death of definitions: it is instead the death of a certain assumption concerning the content of concepts. No (non-logical) concept can be defined, but attempted definitions of the concept in question can be contextually useful for shedding light on certain questions.

A counter-response is possible here. If a person doesn't actually *believe* in the death of definitionism, then she may well keep on searching for the one true definition/theory of X. Such a person would *not* be motivated to keep proposed definitions which face insurmountable counterexamples, because she won't accept our premise that *any* definition will always face counterexamples. If everyone in the community thinks in this way, then an interesting fragmentation of the sort sketched above will not get a foothold. It might be *true* that no definition can ever be 'right', and also true that various definitions already in the literature can be useful in different contexts, but we don't yet have conceptual fragmentation (in the sense intended) if every individual is still searching for the one, true definition or theory.

One reason that conceptual fragmentation is taking hold is simply that the death of definitionism is becoming more widely known and appreciated, and philosophers are increasingly acting accordingly.[17] This entails accepting that every definition will face counterexamples; however, many philosophers still like to *work with* definitions, albeit emphasising the *usefulness* of a given definition as a reason to introduce it, even if it isn't extensionally adequate. That is, definitions are increasingly put forward in the spirit of pragmatism ("This definition will be useful in the following

[17] Magnus (2012) and Uidhir and Magnus (2011) are very clear examples of this phenomenon.

ways…") as opposed to in the spirit of definitionism ("The necessary and sufficient conditions for *X* are…"). Of course, not everyone in a given debate will make the transition to pragmatism, and sometimes we find rather blurred lines between those in a debate searching for 'correct' definitions and those in a debate searching for merely *useful* definitions. But the increasing emphasis on pragmatist thinking when it comes to definitions is (i) to be expected given the (relatively recent) death of definitionism, and (ii) evident in the literature.

This evidence is everywhere, and it wouldn't do to document too much of it here given space constraints. But we can give a few examples just to give a sense of how things are shifting. Consider Wayne Wu as he attempts to motivate his definition of 'attention':

> My goal is to identify a theoretical conception that is psychologically and philosophically useful. (2011a, p.97)

Consider also Percival when discussing the concept 'probability':

> [I]n my view one should not require the results of a conceptual investigation into the nature of probability to coincide exactly with what agents mean by "the probability of such and such." The really important issue is what agents might *profitably* mean by it. (2000, p.360)

Similarly, when discussing 'scientific theory', Vickers (2013) says this: '[W]hat it [THEORY] should be taken to mean depends much more on how it can be analytically useful than on what it corresponds to in the world.' (p.109). Belot (2007) makes a similar point about THEORY: '[I]n choosing a sense for the term 'theory' in philosophy of science, we have a trade off between fidelity to common use and fecundity of the explicans.' In other words, for any suggested definition of 'theory', we ought to be considering the ways in which that definition can do philosophical work for us, not just whether the definition matches people's intuitions.

Notice that in these examples we have an emphasis on *use*, but we don't yet have a *plurality* of uses. That is to say, we still need the final step in the process: it needs to be the case that *several* definitions are theoretically useful, not merely one. A philosopher might be pragmatically minded, but simply want to find the one, best definition which is most useful, or which covers all possible uses one might be interested in. However, once one has taken the step to judge definitions on whether they can be useful (as opposed to extensionally adequate), fragmentation is quick to follow. The fact is that, in practice, one just does find that more than one definition of a given term will be useful, depending on the context, the debate in which it appears, the interests, values, and goals of the enquirers, and so on. Often, this stems from the fact that the participants in the debate have different interests, and are engaged in different projects.

For example, consider the recent debate concerning whether 'classical mechanics' is a deterministic theory. Fletcher (2012) writes as follows: "there are many different conceptions of classical mechanics appropriate and useful for different purposes" (p.275). He continues: "In practice, the choice of a particular formulation of classical mechanics will depend largely on pragmatic factors like what one is trying to *do* with the theory" (p.277). Thus he argues that there is no fact of the matter as to whether classical mechanics is a deterministic theory – it depends on how one formulates the theory, and there is no one 'correct' or 'best' formulation of the theory. Another helpful example concerns the definition of 'species'. Here it is clear that different available definitions are suited to different theoretical purposes (see e.g. Ereshefsky 2010). One particularly striking example is the difference between the phylogenetic species concept (that taxonomises organisms into species in virtue of them sharing common descent – e.g. Hennig 1966) and the interbreeding one (which taxonomises organisms based upon their being interbreeding groups that produce fertile offspring – e.g. Mayr 1970). Each of these two prominent understandings of 'species' is suited to different theoretical purposes. For example, certain species of organisms that do not interbreed at all (i.e. they reproduce asexually) are obviously unsuited to being investigated in terms of the interbreeding understanding of 'species'. However, in spite of this, interbreeding has been an

important motivating force behind the evolution of a great many organisms on the planet and has produced stable taxonomic units of interbreeding organisms. So, our evolutionary biology would be impoverished if we neglected the importance of the interbreeding species concept in relation to these organisms.[18]

It is not difficult to find further concepts that have been burdened with a wide plethora of theoretical uses. 'Life' is a good example. As Machery (2012) notes, the term 'life' has been put to work in evolutionary biology, molecular biology, the study of the origins of life, synthetic biology, artificial intelligence research, research into the possibility of finding life on other planets as well as research in ethics, relating to questions such as the ethics of abortion and environmental philosophy. As Machery goes on to note, each of these disciplines has its own interests and methodologies. To quote just one of his examples:

> The evolutionary definition of life… may be attractive in synthetic biology, since, in a lab, scientists can observe whether artificial products are capable of evolving. It is much less attractive in astrobiology, for *in situ* search for life spans over periods of time that are too short for finding evidence of evolution. (2012, p.158)

Of course, within ethical philosophy one would expect the appropriate definition of 'life' to be once again different: what we're interested in when we talk about 'life' in the abortion debate is a concept which is relevant to the question of whether a particular entity has certain rights.

As another example consider the amount of work the word 'theory' has been put to in philosophy of science. Just to give a flavour, there are (i) debates concerning inter-theory relations, (ii) debates concerning the interpretations of theories, including their metaphysical commitments, (iii) debates concerning the properties of theories, including whether they are consistent, deterministic, time-reversal-invariant, and so on, (iv) debates concerning theoretical virtues in

[18] See Ereshefsky 1992 and 1998 for arguments along these lines.

theory choice, (v) debates concerning the relationship between theories and 'models' (for various interpretations of 'model'), and (vi) debates concerning whether theories are true, approximately true, mere instruments, or otherwise. We also have a vast number of different 'theories of theory' in the philosophical literature (see Vickers 2014, Section 1, for a list). No surprise that some of these accounts are suited to some of the uses to which the term 'theory' has been put, and other accounts are suited to other uses. For example, Muller's (2011) preferred account of a theory as a 'set of structures in the domain of discourse of axiomatic set-theory, characterised by a set-theoretical predicate' might be extremely useful for revealing whether or not there is an isomorphism relation between Schrodinger's wave mechanics and Heisenberg's matrix mechanics (Muller 1997a, b). But a highly abstract, formal account such as this is hardly suited to understanding the sense in which Darwin had a theory concerning the evolution of species, or the sense in which Bohr had a theory of the atom.

Where does this leave us? This section has described a process leading from monism to fragmentation. The first link in the chain is the death of definitionism, which has the result that no one proposed definition of a concept is correct (because all fail to meet the EAC). The second link in the chain is the fact that proposed definitions become judged by their theoretical usefulness, not the EAC. The final link is that *several* of the definitions prove to be theoretically useful, applicable in different contexts. These three steps are sufficient for conceptual fragmentation. The upshot is this: if one wishes to remain a monist about a given concept, one needs to have a story to tell concerning where this chain is broken for that particular concept. Perhaps monists will insist that, for their concept, one definition *will* be extensionally adequate, but this flies in the face of the death of definitionism (which we take for granted here without apology). Alternatively they may challenge the idea that, for a given concept, there will typically be a large number of theoretical uses the concept is expected to fulfil. Perhaps the monist will insist that all we have given is a long list of cherry-picked examples where this *does* hold true, but one should not make the inductive leap to

the conclusion that this *will* (probably) hold true for *any* given concept *X*. Indeed (so says the monist) there are many concepts that *do not* have many different theoretical uses, including BOILED EGG.

The BOILED EGG example raises an important point: that we should not expect *all* terms to have various different possible definitions which are useful for different purposes. But we submit that there is a specific class of terms for which we should expect fragmentation in the vast majority of cases. Here is Chalmers' (2011, p.540) view on the matter: 'I am inclined to think that pluralism should be the default view for most philosophical expressions.' Though we agree with Chalmers in spirit, we feel that 'philosophical expressions' is overly narrow. As we have already seen, there are many examples outside philosophy.[19] So, given that examples extend beyond philosophy, what marks out the ones that are susceptible to conceptual fragmentation?

We can get a better handle on the class of terms/expressions where fragmentation should be expected by thinking more deeply about the third link in the chain: the fact that there should be *several* definitions that are useful for different purposes. In each case different definitions are useful for different purposes, but why? Why shouldn't one definition do all of the work? The reason is that expressions get introduced into a field, or into a debate, at a time when only a small fraction of the interesting phenomena have been identified. As any field develops the phenomena to be explained multiply. The new phenomena demand explanation, and the terms which have already been involved in successful explanations are invoked again for the new, related phenomena. Thus one and the same term becomes involved in numerous different explanations. In this way we have the multiplicity of purposes, and a multiplicity of concepts follows closely behind.[20]

These considerations add weight to the inductive argument that we gave at the start of this paper for the claim that we should expect this kind of conceptual fragmentation to proliferate over the coming years by explaining why such fragmentation can be expected to increase over a period of

[19] Magnus (2012) favours pluralism about SPECIES and THEORY, but writes, "There would be something suspicious about a wholesale argument claiming to show that pluralism is appropriate in every domain." He gives no argument, however.

[20] This sort of phenomenon is well known in the linguistics literature. See below for further discussion.

time. For a given expression *X*, so long as that expression is being used in a technical capacity to explain phenomena within a field of investigation, we should expect fragmentation. This is because on inspection we will notice the different phenomena to be explained, and the different ways in which the expression is being used in the different explanations. This shows why we *shouldn't* expect any fragmentation of BOILED EGG: this expression is not being used in a technical capacity to explain phenomena within a field of investigation. But all the other expressions noted above are, at least sometimes.[21]

In opposition to the monist, we should ask the following question: what would be the *point* in trying to make do with a single definition of a concept? What is the motivation for that? This question is especially pressing given the death of definitionism; the motivation can't be that one definition is extensionally adequate. In these circumstances, with many different definitions, what would persuade us that a single definition is the best *for all purposes*, and *in all contexts*? What is lost if, in a given context, one simply tailors the definition of *X* to ensure it is the most appropriate definition for the purposes at hand (regardless of whether or not this happens to be the same definition that has been given elsewhere)? We feel that the burden of proof is well and truly shifted here.

Suppose we accept that fragmentation *is* to be expected for most terms that have been expected to fulfil a variety of theoretical roles, in philosophy and elsewhere. One might well ask what this fragmentation entails. In what ways (if any) will relevant debates be transformed? Does fragmentation lead simply to pluralism, or does it lead us to some kind of eliminativism? Many of the examples on our list look quite different – for some, 'eliminativism' seems to be favoured, for others 'pluralism', and for others something that doesn't fit neatly into either of these categories. In fact we believe there are at least four different possible positions which all need to be taken seriously, and

[21] There is nothing intrinsic to the concept BOILED EGG that prevents it from fragmenting. If there were some theoretical structure or set of debates which put theoretical weight on the concept BOILED EGG, and expected the concept to explain various different phenomena, then we would indeed expect the concept to fragment.

which are very commonly conflated behind the headline terms ‘pluralism’ and ‘eliminativism’. It is to these complexities we now turn.

**3. Pluralism, eliminativism, and the best of both worlds**

So far we have mainly referred to ‘fragmentation’ as opposed to ‘pluralism’ or ‘eliminativism’ specifically. Our idea here was to stay neutral – insofar as this is possible – between different positions which have been called ‘pluralism’ and ‘eliminativism’. ‘Fragmentation’, as we have used it, refers to any situation where a term enjoys multiple different definitions, no one of which is privileged and several of which are deemed valuable. Pluralists and eliminativists can agree to this development, but then eliminativists want to go one step further and ‘get rid of’ or ‘do without’ the original term. Or they might prefer to say that the original *concept* naturally falls by the wayside, replaced by a number of other, more refined concepts.[22]

When conceptual fragmentation occurs, as theorists we must choose between several options regarding the possible use of the term that has fragmented. A brief survey of the literature reveals at least four different reactions which have emerged as a result of conceptual fragmentation:

(1) Retain the original term, and deploy it in theoretical contexts, whilst acknowledging that it fragments further. Weiskopf (2009) holds a variety of this view in relation to ‘concept’ (cf. Prinz, 2010).

(2) Retain the original term, but only as a useful shorthand. Do not put the term to any theoretical work. This seems to be suggested by Ereshefsky in relation to ‘species’ in his later work (2010b).

[22] Our focus is on pluralism and eliminativism *which is motivated by conceptual fragmentation.* Eliminativism of the kind proposed by Churchland (1981) is not the focus of this paper.

(3) Modify the original term and use it only in one of its modified forms. For example, Ereshefsky (1998) in his early work recommends replacing 'species' with 'biospecies', 'ecospecies', and so on.

(4) Eliminate the term in question and state claims entirely without mention of it, even when modified. Machery (2009) holds this view in relation to 'concept'.

We take a pluralist stance towards the very stance one should take towards a given term/expression. That is to say, which of the suggestions (1)-(4) one embraces will depend upon the specifics of the term/concept under consideration, and also the debate under consideration. But this is rather empty without an account of *what it is* about the context of a particular debate that might lead us to embrace one particular option as opposed to the others. At the least we need some indication of when a term should be eliminated (as demanded by (3) and (4)) and when we can preserve use of it, albeit with increased caution (as in (1) and (2)).

No *exact* answer should be expected here, but one can nevertheless identify some very useful heuristics (to which we will add later):

(a) Other things being equal, the greater the number of theoretical roles that a certain term is put to, the greater the warrant for eliminating that term. The reason being that the term is very likely to be assigned different meanings by thinkers who have different roles in mind – some very subtle and thus easy to overlook – and this increases the chance of people talking past one another when deploying that term.

(b) Other things being equal, the more pivotal the role a concept plays in the arguments put forward to reach one's conclusions, the greater the warrant for eliminativism. If your argument hangs on what you mean by 'x', then it is much safer to *tell* people how you are using 'x', instead of assuming that people will understand what you mean. Obviously this does happen quite often in the literature – philosophers are used to cashing out

their terms – but subtle differences in the use of terms which *appear* to have 'only one meaning' mean that it needs to be done much more carefully, and much more often.

(c) As Chalmers (2011, pp.531-2) indicates, a term 'x' is particularly liable to cause the kind of trouble that we have been examining when the question being asked is 'What is x?' Of course, it is also likely to cause trouble if the question being asked directly depends on the question 'What is x?', such as when one asks whether y 'counts as' an x – questions such as 'is a whale a fish?', 'is Pluto a planet', and the old classic 'is Robinson Crusoe a bachelor?'[23] In such circumstances one does better to eliminate the term in question, which in turn means that these questions simply cannot be asked. But that is for the best, because (given the death of definitionism) these are bad questions.

Of course, it will be an empirical question to what extent a particular term fulfils (a-c), and relatedly an empirical question how much warrant there is to eliminate that term in the debate in question. Many readers at this point might be sceptical that eliminativism will be required in very many contexts. Such readers may simply have confidence that professional philosophers know how to handle concepts, and can use them appropriately, such that (i) the context of discussion will tell the reader how a term is being used, or (ii) if the context is not sufficient, the author will know that, and will provide a definition. Such a reader will then conclude that, given these facts about professional philosophers, eliminativism will be appropriate only in very rare circumstances.

We feel this is overly optimistic: one must take note of the fact that there simply *are* many examples of philosophers talking past one another, miscommunicating, and having verbal disputes when they *think* they are having disputes of substance (we have already seen several examples). However, this raises a question: if philosophers are professional concept-handlers, then *why* do these difficulties arise with such frequency in philosophical debate? We believe that one of the main

[23] Cf. Sidelle (2007), who introduces the first two of these questions as potentially underlying 'purely verbal' disputes.

contributing factors to this frequency has to do with situations where two participants are using the same word in ways that are only *very slightly* different, such that it is very difficult to detect the difference in meaning, but *the consequences* of this difference for the debate in question are very great.

Such situations crop up in language absolutely everywhere. Indeed, a large part of linguistics is devoted to understanding just this sort of phenomenon, understood under headings such as 'concept broadening', 'concept narrowing', 'category extension', 'polysemy', and 'contextual meaning'.[24] Naturally linguists disagree on matters of theory, but all agree (more or less) on the phenomena to be explained. The fact is, we use the same terms in a very wide variety of different ways, and meanings are being 'bent' all the time. And, what counts as a significant bending of the meaning of a term for one person is, for another, squarely in the middle of 'standard usage'.

It is quite common for the same term to be used in *significantly* different ways within a community, and the linguistics literature is crammed with concrete examples. But it is even more common for the same term to be used in very *subtly* different ways. Naturally if the differences are small enough it will be common for people to not even notice they are using the term in slightly different ways. But why should that matter? Why would very small differences in meaning have very significant consequences? If the reader is a philosopher, we shouldn't really have to answer this question! Philosophy is all about subtle differences making *all* the difference. But it will be helpful for us to bring this to life with a concrete example.

Consider the debate as to whether the theory of classical electrodynamics is inconsistent. Frisch (2005) argues that it *is* inconsistent, but Belot (2007) and others disagree. As Vickers (2014) shows, Frisch and Belot have conceptions of 'classical electrodynamics' which overlap a great deal,

[24] For an entry to this vast literature – highly relevant to philosophy but often overlooked – see for example Clark and Gerrig (1983), Murphy (1997), Lasersohn (1999), Carston (2002), Fauconnier and Turner (2002), and Wilson and Carston (2007). Wilson and Carston (2007) go as far as to claim that "there is no principled limit on the possible interpretations of words in use (i.e. given that there are indefinitely many possible contexts, there are indefinitely many possible adjustments of the encoded sense(s))."

so that in practice what they both take the *content* of the theory to be is almost exactly the same. However, the small differences mean that for Belot the theory is consistent, but for Frisch the theory is *in*consistent. Thus we get a very significant difference arising from a very small difference in the meaning of 'classical electrodynamics'. As Vickers (2014) argues, eliminativism is worth taking seriously here: one can debate everything one wants without using the term 'classical electrodynamics'. Especially since there is no way to settle the question which meaning of 'classical electrodynamics' is *correct*, or *best*. Confidence that professional philosophers can handle such situations without bothering to eliminate is further undermined when we notice that miscommunication can happen *even* when the author provides a definition to tell the reader how a key term is being used. Frisch explains how he is using the word 'theory': "Throughout my discussion I will refer to the scheme used to model classical particle-field phenomena as a 'theory'." (Frisch 2005, p.26). But his work still leads to an unfortunate verbal dispute with other philosophers of physics who claim that Frisch is wrong to think that 'classical electrodynamics' is inconsistent. The problem here is that philosophers sometimes have very fixed views on what a word can be taken to mean, such that either (i) they misinterpret the definition that is given, or (ii) they simply think the definition is wrong, so that any discussion based on that definition is at best misleading.

This is just one example, to illustrate the basic idea. The debate would have been much more effective if 'classical electrodynamics' had been eliminated, and claims stated in alternative ways.[25] And this is a situation where the philosopher making the claim actually *was* quite careful, stating explicitly how the term in question was to be understood. In general terms, the thing about this debate is that an abstract term plays a pivotal role in the arguments put forward: a very small difference in the meaning of that term leads to a very significant difference in conclusion. One might have expected the term 'classical electrodynamics' to be precisely defined. But even established scientific theories have issues concerning the interpretation of key terms and equations (we have

[25] As Frisch himself reflected in 2008: 'I am inclined to agree with my critics that this inconsistency in itself is less telling than my previous discussions may have suggested.' (Frisch 2008, p.94).

already mentioned similar issues concerning classical *mechanics*). Cases such as this show that however confident one is that one can just 'be careful', without bothering to eliminate, one is always taking a risk if one does not eliminate. The thing about 'care' is that it is (very!) fallible. Eliminativism, by contrast, is fool-proof: it is impossible to talk past one another regarding term 'x', or to have a verbal dispute about 'x', if 'x' has been eliminated. The smaller the difference between two different concepts, the less likely the interlocutors in the community are to notice the differences between them, and thus the greater the risk of miscommunication and talking past each other. Eliminativism remedies these problems.

Given these considerations, we can add a fourth heuristic to our list:

(d) If two thinkers are using the same term in different ways such that (i) it may be difficult to initially tell that the two interlocutors are using the word in different ways, and (ii) the *theoretical consequences* arising out of confusion between the two uses are very great, then there is good reason to eliminate that term.

Note too how important it is to eliminate a term even if all parties involved accept conceptual fragmentation. For a given concept, all parties might have ruled out sub-concepts 1, 2, and 3 as irrelevant. But they might *not* have realised that sub-concept 4 splits further into 4a and 4b in some subtle but important way. Thus miscommunication is quite possible for philosophers who have embraced fragmentation, and where the context *does* do a lot of work to narrow down the intended meaning.

Our conclusion is that the status quo is not desirable at all. It is already clear that 'taking care' is not enough, given that the history of philosophy is littered with examples of the sort of miscommunication we are worried about. But in addition the above considerations tell us just *why* we waste our time with verbal disputes so often. The key ingredients which cause verbal disputes (and which we have indicated in heuristics (a)-(d)) come together so often. It comes down to a

simple choice in the end: take a risk, or don't take a risk. Because if one eliminates a term which (perhaps) didn't really *need* eliminating, that doesn't do any harm. It just means one has been overly cautious. It *does* mean that certain questions can no longer be asked. But if these questions depend on using a word which has several different meanings, then they are questions we can usefully replace with new questions which bring out the different senses of the term.[26]

These considerations convince us that eliminativism should be embraced far more widely. However, we *don't* advocate an all-out eliminativism – we think that eliminativism should be *selective* in its application. Heuristics (a)-(d), above, tell us why. Sometimes a term might play a pivotal role in the arguments being put forward, but that term quite obviously does not have a number of different theoretical uses (we have already discussed 'boiled egg'). Alternatively, a term might have several importantly different theoretical uses, but, in a particular debate, it might *not* play a pivotal role in the arguments being put forward. An important example here is our own use of 'concept' in this paper. Despite our firm belief that this term has fragmented in the way Machery (2009) and others have indicated, we use it freely in this paper. In this paper, we just don't put weight on 'concept' – that is to say, differences in the way 'concept' is used in *some* literature don't matter to the arguments put forward here. It is perfectly consistent, on pragmatic grounds, to advocate eliminativism about 'concept' in some contexts but not in others, since the term might be causing trouble in some contexts but not in others. This is what *selective* eliminativism is all about.[27]

As another example consider the term 'hard'. In a 1942 work entitled *Hardness and Hardness Measurements* S. R. Williams asks the question: "Would it clarify our thinking if we eliminated the word "hardness" from our scientific vocabulary?" (cited in Wilson 2006, p.350). The question arises because in materials science the word 'hard' can mean a number of importantly

[26] Vickers (2014, Section 4) argues at length that anything that is important to say can still be said if one eliminates 'theory' from philosophy of science: "[T]he questions which really matter can still be asked and answered." (p.111). Taylor (2015; see e.g. Chapter 7, Section 7.3) argues similarly in the context of eliminativism vis-à-vis the term 'attention' in debates concerning consciousness.

[27] This is not the first paper to introduce such selectivity. For example, Vickers (2014, p.120) writes: 'I am not arguing that theory eliminativism should be applied to every debate of the relevant type.' However, we believe that this is the first paper to argue for selective eliminativism as a general thesis.

different things, including scratchability, dentability, breakability, malleability, and machinability. Williams' answer is 'no', and Wilson (2006, p.350) agrees: "[T]he term will never vanish utterly from the colloquial vocabulary of anyone who works with materials." It is even more obvious that the term ought not to be eliminated from *general* colloquial vocabulary! But in a context in materials science where the differences between the sub-concepts really matter, there is just no point to using the word 'hard' – it doesn't communicate *enough* to help inform the debate. And there is a danger that different interlocutors will interpret 'hard' in different ways and miscommunicate. Further, one just doesn't *need* the word 'hard' to communicate about materials – quite clearly, one can say everything one wants to say about materials using other terms such as those noted above.

So often when eliminativism is discussed the question asked is whether the term in question should be *completely eliminated from all discourse* (or perhaps all *professional* discourse). This is clear in the work of Marc Ereshefsky. In earlier work (1992 and 1998), Ereshefsky was an advocate of the view that 'species' should be eliminated from biology, but in later work (2010b) he has changed his mind, and now argues against elimination. His argument against eliminativism revolves around the fact that the term 'species' is 'entrenched':

> 'Students are taught the term from their earliest encounters in biology. Field guides and taxonomic monographs use the word 'species'. And the term is even found in our governments' laws. From a practical standpoint, it would be hard to eliminate the word 'species'… Removing the term 'species' from biology would be an arduous task, and that speaks in favour of keeping it' (2010b, pp.420-421).

Furthermore, Ereshefsky says that:

> [T]here is no pressing need to eliminate 'species' from biology, as long as we are careful in how we use the term. (2010b, p.421)

For us, there are two issues here. Most obviously, if we are selective eliminativists we can agree that there is no pressing need to *completely eliminate 'species' from biology*. That is surely too radical, and not even possible. But the second clause of the quote indicates that Ereshefsky thinks the status quo is basically fine, and we can proceed business-as-usual so long as we are 'careful'. But we have already discussed at length why 'being careful' just will not do. As in so much of this literature, Ereshefsky's quote assumes a dichotomy between total eliminativism and the status quo. But instead one can use our four heuristics to separate the contexts where we should be eliminativists, and those where we should not.

We claim that *selective* eliminativism allows us to accomodate all the considerations that originally drew Ereshefsky to eliminativism, *and* these new considerations which bring him to prefer the label 'pluralism'. In other words, the later Ereshefsky may be correct that there are *some contexts* where it would be pointless to eliminate a term given how entrenched it is, and how little trouble the term is causing within the context/debate in question. But in other contexts it may be that the advantages of eliminating the term far outweigh the inconvenience of managing without it.[28]

Of course, this line of reasoning not only helps resolve conflicting considerations within a single person (Ereshefsky). It also helps to dissolve disputes between different philosophers in a great number of different debates. For example, in the 'concept' debate between Machery and his critics, Machery gives numerous good reasons to eliminate 'concept', and Weiskopf (2009) gives good reasons to retain it. However, Machery himself agrees that it shouldn't be eliminated from *all* discourse (although he perhaps thinks it should be eliminated from all *psychology* – see Machery 2009, p.246), and Weiskopf doesn't provide an argument that it should *never* be eliminated. From

[28] Similar considerations apply to the view of Brigandt (e.g. 2003) who also argues against eliminativism about species. Brigandt's main argument is to claim that there are *some contexts* where the species concept is useful. But again, of course, this is perfectly compatible with selective eliminativism. Brigandt (2003) argues that one thing that justifies preservation of the SPECIES concept is that it helps set the standards for what counts as a good subconcept of SPECIES. We don't see the force of Brigandt's argument, but we needn't disagree with him here since his argument can be accommodated by the selectivity of the eliminativism we advocate.

the perspective of *selective* eliminativism this debate thus dissolves into a mere difference of emphasis, with Machery arguing for ways in which the term 'concept' can cause trouble, and Weiskopf arguing for ways in which it can be useful/important. The same goes for Prinz's criticisms of Machery (e.g. Prinz 2010): much of the disagreement disappears if the claim is only that 'concept' should *sometimes* (often) be eliminated. And Machery (2009) gives some good examples of such contexts, even if, in the end, there are fewer such contexts than Machery suggests. This same line of thinking can be applied to debates between eliminativists and anti-eliminativists in any of the twenty examples listed in Section 1.

To sum up, we advocate selective eliminativism, and we think that terms should be eliminated from debates far more often than they currently are. Which terms? Which debates? There is no simple recipe, but we refer the reader back to the heuristics (a)-(d). The motivation for widespread eliminativism is the past record of the history of philosophy, combined with the fact that subtle variations in the meaning of a term (i) arise a lot, and (ii) can have very significant consequences for our debates. Importantly, because we do *not* advocate eliminating a term from *all* (professional) discourse, we sidestep the vast majority of arguments against eliminativism currently found in the literature.

**4. Objections and replies.**

*(i) A role for 'natural kinds'?*

Some readers may wonder why we haven't framed the whole discussion in terms of 'natural kinds'. After all, one can find in the literature arguments for pluralism and eliminativism which put great weight on 'natural kinds' (see e.g. Griffiths 1997, Machery 2009, Irvine 2013). The arguments typically start with the claim that a certain term refers to a collection of entities that do *not* form a natural kind. Instead the term is an 'umbrella term', referring to a heterogenous collection of

different entities. Then it is claimed that there exist several (sub)concepts each of which refers to a subclass of the collection of entities, and each of these subclasses forms a natural kind. Then the eliminativist takes another step and argues that the original umbrella term should be eliminated (because it does not refer to a natural kind), to be replaced with the terms for the subconcepts which *do* refer to natural kinds.

We think that motivating eliminativism by appeal to natural kinds, rather than theoretical pragmatics, is a mistake. Machery may think he needs to argue that 'concept' doesn't refer to a natural kind in order to fully justify eliminating use of that term. But actually, on close inspection, even Machery[29] invokes pragmatic arguments to supplement his ontological ones. To start with, he accepts that not referring to a natural kind is *not sufficient* for eliminating a term – the term might nevertheless play 'a useful role'. We would add that, given the lessons of the previous section, it also isn't *necessary* to argue that a term doesn't refer to a natural kind to have sufficient grounds for eliminating it. Again, what really matters is how *useful* eliminativism would be with regard to a given set of debates. Machery himself argues that using the term 'concept' causes confusion and miscommunication, encourages verbal disputes, and hinders useful classification. We just don't need any *ontological* claims to justify eliminativism, and under these circumstances one would do better to simply stay silent on the complex and controversial issues involving 'natural kinds'. One can add to this the difficulties that arise given the conceptual fragmentation of NATURAL KIND summarised in Section 1, above.

A related issue concerns *reference*: why haven't we talked about the advantages which come with eliminating terms which do not refer, and replacing them with new terms, which *do* refer? This issue is related because many theories of reference put weight on the concept NATURAL KIND (e.g. to refer is to refer to a natural kind). Other theories of reference do not. But then, if we were to

[29] See e.g. Machery 2005, p.465: "A theoretical term that has been found to fail to pick out a natural kind should be kept if it plays a useful role."

put weight on *reference* to motivate eliminativism, which theory of reference should we appeal to? We rather feel that one does better to side-step some very thorny literature here by avoiding any discussion of 'reference', relying instead on theoretical pragmatics.

*(ii) Definitions for subconcepts?*

A different line of objection concerns the question whether the 'fragments', the subconcepts, can themselves be defined. Suppose a concept fragments naturally within a field of investigation, and we end up with different subconcepts. According to what we have already said about the 'death of definitionism' it won't be possible to provide definitions for these subconcepts (just as it wasn't possible for the original superordinate concept). That is, any definition we could put forward would not precisely capture the content of a given subconcept. We can of course provide stipulative definitions, but these will never line up exactly with the subconcepts. We may even find ourselves with more than one definition of a single *sub*concept (see Figure 1). How can one make progress in these circumstances? And in particular, how can one eliminate a concept the content of which cannot be captured even by a range of different definitions?

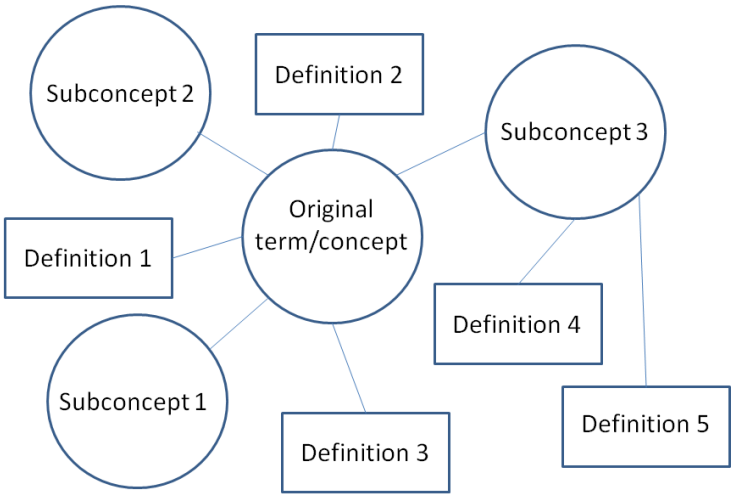


**Fig.1.** One example of how the complex web of concepts, subconcepts, and definitions might look.

In our view this is not so much an objection as a way of revealing just how complex things can get when we consider the relationship between language and concepts. We accept that an original 'superordinate' term will sometimes fragment into subterms, and a superordinate concept will sometimes fragment into subconcepts, and in addition one can introduce a range of definitions for the terms, and none of these things will match up perfectly.[30] However, within the context of a specific debate a term (or subterm) will be doing work of some kind, and this work will only depend on *some* aspect of the content of the corresponding concept. As an example consider the concept SPORT: if two people are debating whether chess is a sport, then what really matters to their disagreement is whether a sport must necessarily be physically demanding. We can choose to interpret one of the interlocutors as employing a concept of $\text{SPORT}_1$ where a sport *is* necessarily physically demanding. In that case chess is *not* a sport, and the aspect of the concept $\text{SPORT}_1$ which matters in this context is the aspect which tells us that a sport must be physically demanding. And, crucially, this feature *can* be captured in *a* definition of 'sport', even if there can be no 'perfect' definition of either SPORT or its subconcepts.

This is only one example, of course, but it illustrates our general claim. Stipulative definitions can fulfil *certain particular* theoretical roles, and bring to the surface the aspect of a concept which was actually being used within a certain debate. They needn't perfectly capture the content of any concept (or subconcept) in order to do this, and they need not be able to fulfil *all* of the theoretical roles that the concept has been expected to fulfil (because as we have argued at length, there will often be a great many such roles).

*(iii) Comparison with Chalmers*

[30] Except, perhaps, the concepts that people form when first introduced to a stipulative definition. But even this is not clear cut.

In recent literature we have seen several articles on 'verbal disputes'.[31] David Chalmers (2011) has offered a detailed philosophical analysis of verbal disputes, including also a 'method of elimination' (pp.526-534) as a strategy for "either dissolving disagreements or boiling them down to the fundamental disagreements on which they turn." (p.517). This 'method of elimination' bears more than a passing resemblance to the eliminativist strategies we have been discussing here. In addition, Chalmers' general approach places great emphasis on theoretical pragmatics: he frequently recommends that issues over what words we use to describe certain entities are of secondary importance (or no importance at all) and that instead we should concentrate on what concepts are *pragmatically useful,* and tailor our discussion to that end (esp. pp.535-538). In this respect we are wholly in agreement with Chalmers.

But verbal disputes are just one of our concerns in this paper, and our project is more explanatory than Chalmers': we offer an explanation of *how* conceptual fragmentation occurs, and *why* it occurs with such frequency. And this also leads to an explanation of the prevalence of verbal disputes (something not found in Chalmers). On the other hand our project is also normative: we recommend that in many circumstances pluralist and eliminativist positions *should* be embraced, and we have explained what contexts these are. Here we do make contact with Chalmers, since his 'method of elimination' is put forward in a normative capacity. In addition his 'elimination' *is* selective, in our sense; one should eliminate a key term from a given dispute if that dispute turns out to be a verbal dispute, but this does *not* entail eliminating the offending term from *all* discourse.

We agree that the 'method of elimination' can be extremely helpful, both as a way to identify verbal disputes, and also to 'deal with' them (Chalmers, p.526). But our main focus here has been conceptual fragmentation, not verbal disputes. And clearly enough not every case of conceptual fragmentation leads to a verbal dispute, especially where the community is well aware of the fragmentation, or where the subconcepts are easily distinguished (e.g. because they do not

[31] See for example Sidelle (2007), Chalmers (2011), Graham (2013), Jenkins (2014), and Jackson (2014).

significantly overlap, as already discussed). In addition, even in some cases of verbal disputes it may be more appropriate to *modify* a term instead of completely eliminating it (and we have already seen various examples).[32]

**5. Conclusion**

It is common to hear philosophers bemoaning how much contemporary philosophy is infested by miscommunication and verbal disputes. It is much rarer to hear a philosopher proposing to *do something* about this problem. This paper represents a step in this direction. Philosophers have often spent much energy attempting to answer questions of the form 'What is X?' for some X or another. In this paper we have argued that a great many such debates are based on the false assumption that there is one, single thing that X is. A great many more debates ask different questions, but are still premised on the idea that some X is a single thing (e.g. 'Is a Y an X?'). If we are right that, in general, we should expect most concepts of interest to fragment, then it is hard to escape the conclusion that a deplorable amount of energy has been spent by philosophers asking bad questions.

One can start to put a positive spin on this, however, if one accepts that many of the definitions/theories of X that have been put forward remain useful for certain purposes, in certain contexts. For the pluralist, such a definition – originally put forward in the spirit of monism – can be embraced as just one of the plurality of different definitions of X. For the eliminativist, such a definition might remain useful not as a definition of X, but as a stipulative definition put forward to do a specific dialectical job within a specific context. And we have seen several examples of just this sort of phenomenon in this paper.

[32] In fact there is much in Chalmers' approach that we do not share. Chalmers uses his analysis of verbal disputes to defend the view that there are a privileged set of 'bedrock' concepts, from which all other concepts inherit their content (pp.549-557). And he develops this further to defend a certain account of analyticity (pp.557-564). We are sceptical about the idea of a 'bedrock concept' and Chalmers' account of analyticity, but this does not matter for the main points we wish to make in this paper.

Nevertheless, despite the usefulness of many definitions/theories put forward in the spirit of monism, it is high time we all left monism behind us. Or, better, the *default* assumption should be that any given concept fragments. If philosophical debates proceed in this spirit we will take a significant step towards:

(i) avoiding many bad questions and misguided projects,

(ii) avoiding placing too much weight on certain key concepts/definitions in the projects which are *not* misguided.

We will take another significant step forward if we eliminate terms from our debates much more often, especially in accordance with the three heuristics noted in Section three, above. This entails leaving behind some questions, and asking new questions. And it entails making claims in new ways. Perhaps the most obvious example we have seen is Frisch's claim (Frisch 2005) that 'classical electrodynamics is inconsistent', especially since Frisch later came to regret stating his claim in this way (Frisch 2008). The temptation here, as elsewhere in philosophy, is to make bold and dramatic, remarkable claims. Frisch's claim as stated is eye-catching, and demanded a response from the community. By contrast, it is much harder to convince one's audience that a statement of the form 'Y (on one interpretation) is X (on one interpretation)' is interesting and important. It is still harder if 'Y' and 'X' don't feature in the statement at all. But herein real progress lies.

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