

Thought Experiments, Epistemology & our Cognitive (In)Capacities

Kenneth R. WESTPHAL
Department of Philosophy
Boğaziçi Üniversitesi, İstanbul

Forthcoming in: J.R. Brown, Y. Fehige and M. Stuart, eds.,
The Blackwell Companion to Thought Experiments (2017), chapter 8.

ABSTRACT. Does epistemology collapse for lack of resources other than logic, conceptual analysis and descriptions of one's own apparent experiences, thoughts and beliefs? No, but understanding how and why not requires, Kant noted, a 'changed method of thinking' (*veränderte Methode der Denkungsart*; *KdrV* Bxvii, 704). Some of these methodological changes are summarised in §2 in order to identify a philosophical role for thought experiments to help identify logically contingent, though cognitively fundamental capacities and circumstances necessary to human thought, experience and knowledge. As Kant also noted, experiments are only informative in response to posing the right question, indeed: the right kind of question (*KdrV* Bxii–xiv). Accordingly, preparations for these epistemological thought experiments (§2) fill half of this chapter. The second half (§§3–5), examines three such thought experiments, variously developed by Kant, Hegel, C. I. Lewis, Austin, Wittgenstein and F. L. Will. (5.08.2016)

§1 INTRODUCTION.

Credible, informative epistemology has been difficult, even before Descartes's *Meditations* elevated it to first philosophy, not least because we must use most if not all of our cognitive capacities to consider and to specify the character, scope and limits of our cognitive capacities. Worse yet, the problem of global perceptual scepticism appears as easy to formulate as it is difficult to solve: simply as a matter of logic, all of our beliefs, thoughts and experiences could appear to us to be just as they are, even if none were veridical (Stroud 1994). Since Gettier, Quine and Davidson, it may well appear that philosophers can only reply to sceptics by telling them to get lost, Rorty (1986) suggested. Gettier's (1963) famous counter-examples to analysing the concept 'knowledge' exhaustively into the concepts of 'justification', 'truth' and 'belief', all turn on contextual factors of which the benighted protagonist of his examples, Smith, is unaware, and of which he could not become aware merely by reflecting upon his own attitudes, beliefs or experiences. Varieties of epistemological externalism flourished in response. Quine (1969, 75) belittled the 'make believe' involved in the empiricist attempt to reconstruct the world on the sole bases of logic and one's own (putative) sensory experiences, advising instead to naturalise epistemology by embracing cognitive psychology. Davidson (1987 [2001, 154]) conceded to Rorty's (1986) suggestion.

Does epistemology collapse for lack of resources other than logic, conceptual analysis and descriptions of one's own apparent experiences, thoughts and beliefs? No, but understanding how and why not requires, Kant noted, a 'changed method of thinking' (*veränderte Methode der Denkungsart*; *KdrV* Bxvii, 704). Some of these methodological changes are summarised in §2 in

order to identify a philosophical role for thought experiments to help identify logically contingent, though cognitively fundamental capacities and circumstances necessary to human thought, experience and knowledge. As Kant also noted, experiments are only informative in response to posing the right question, indeed: the right kind of question (*KdrV* Bxii–xiv). Accordingly, preparations for these epistemological thought experiments (§2) fill half of this chapter. The second half (§§3–5), examines three such thought experiments, variously developed by Kant, Hegel, C. I. Lewis, Austin, Wittgenstein and F. L. Will.

§2 SOME CRITICAL CAUTIONS & A ROLE FOR THOUGHT EXPERIMENTS.

To change one's 'method of thinking' is not merely to exchange one philosophical method or one set of assumptions for another. It involves changing one's basic ways, means and strategies of *thinking*, one's whole approach to philosophising, and thereby to change one's ways of using or assessing any philosophical method, or its scope, limits and results. Accordingly, the following remarks can only characterise some relevant changes and, I hope, make them plausible, though not defend them in detail.¹

§2.1 *Conceivability, Infallibilism & Philosophical Cogency*. Global perceptual scepticism is logically possible. Is this logical possibility, conceivable as it is, epistemologically relevant? Why or how, exactly? Deductive logic concerns avoiding various fallacies by which false conclusions would be drawn from true premises. Although knowledge involves avoiding or minimising error so far as possible, there is no good reason to think that, in addition to truth (or sufficient accuracy) and belief, the justification condition(s) for knowledge can be specified or satisfied by deductive logic alone – however one may analyse one's concepts, beliefs or apparent experiences. Why suppose that cognitive justification sufficient for knowledge must eliminate any and all logically possible, merely conceivable alternative states of affairs – whether regarding the content of the belief or claim, its origins, or whatever else may be thought to contribute to or to constitute its cognitive justification? If one could exclude or eliminate any and all logically possible alternatives, that would certainly suffice to guarantee the truth of the belief or claim in question, but why think failure to exclude or eliminate all logically possible alternatives is required for knowledge, specifically: for cognitive justification?

Infallibilism about cognitive justification is most familiar from Descartes' attempt to outwit the possibility of a malignant, deceptive genie. Descartes' attempt is vitiated, not by one, but five distinct vicious circularities.² The worst concerns the prospect that, not the Divinity, but rather the malignant genie imbued Descartes with exactly the same innate ideas of simple natures as he reports having, including his idea of the Divinity, but so arranges the rest of creation that none of Descartes' ideas (other than that of his own occurrent thinking being) are true – especially his idea that any being with one perfection must have all perfections, because one divine perfection is that, within the Divinity, *all* perfections are simply *one* and unitary.³ Descartes deliberately wrote meditations rather than disputations, but co-meditating epistemologists who do not receive the divine neo-Augustinian illumination to which Descartes purports to guide our atten-

¹For detailed examination, see Westphal (2004), (2016a), (2016b).

²The five circularities are detailed in Westphal (1987–88). Subsequent defences of Descartes against charges of circularity have neglected the complexities and difficulties confronting his epistemological project in the *Meditations*.

³Meditations 3, 5; Replies 1/AT 7:49–50, 137, 240, 241; 8.1:12.

tion, must instead develop a radically different approach to epistemology.

The classic empiricist alternative was to reduce all talk about physical objects and events to talk about elementary sensory episodes and various logical (re)constructions of them. Though often proposed, none came closer to achieving such a reduction or (re)construction than Carnap (1928). The most fundamental problem confronting any such (re)reconstruction is that either the (re)construction takes the temporality of the sequences we experience for granted, and so fails to complete the proposed reduction or (re)construction; or else appeal to unreconstructed temporal ordering is avoided, but then the reduction or (re)construction can only specify symmetrical relations amongst elementary sensory episodes which in principle fail to formulate the asymmetrical temporal relations involved in anyone's experiences, including those historical events investigated and explained by any empirical theory, including their procedures and processes of observation and data collection – all of which are temporally extended processes. Empiricist reductionism fails prior to posing issues about cognitive justification.

Infallibilist standards of cognitive justification would be wonderful, were they within our capacities. 'Infallibilism' requires not only that strict logical deduction suffices, but also that it is necessary for cognitive justification. Infallibilism equates cognitive justification with provability. Provability constitutes justification, however, only within strictly formal domains. The one strictly formal domain is a properly reconstructed Aristotelian square of opposition; only within that domain are sentences provable (demonstrable) on the basis of form alone (Wolff 2009). All other domains involve various existence postulates, including semantic postulates. The adequacy and the use of these postulates cannot be assessed by formal methods alone. We can of course formalise various domains or linguistic frameworks (Lewis 1929 [1956], 298; Carnap 1950a), but within such formalised logistic systems, strict deduction can at most be necessary, though never sufficient for the justification of specific claims within their domains. The justification of specific claims always involves the further semantic or existence postulates constitutive of their domain, and requires the assessment of the use of those postulates in connection with the specific claim in question. This is no objection to formalised logistic systems; it is a fact. Problems for epistemology lie in failure to recognise this fact and its implications. One implication of this fact is that infallibilist standards of justification are appropriate *only* to formal domains. Empirical knowledge concerns spatio-temporal objects, events, persons, structures or processes. Accordingly, empirical knowledge is a non-formal domain. Hence infallibilist standards are not 'too stringent', as has been frequently claimed: Infallibilist standards of justification are in principle *irrelevant* to empirical knowledge. As Kant noted, deductive logic is a canon for rational judgment, but (outside strictly formal domains) no organon for knowledge (*KdrV* A52–4, 60–1, 795–7/B76–8, 85–6, 823–5).

An important corollary to this interim finding is that the prime methodological problem confronting epistemology is to determine, within the domain of all logical possibilities, which possibilities pertain to human cognition. An important feature of this vast perplexity is highlighted by considering the philosophical fate of Aristotle's model of philosophical knowledge, *epistēmē* or *scientia*, which he modelled on Euclidean geometry, but which he expressly insisted must be matched to the precision possible within any domain of inquiry. How and why did this flexible model become the strict deductivist infallibilism associated with *scientia* in the Modern period? It was not Descartes' innovation. It was legislated in March 1277 by Étienne Tempier, Bishop of Paris, upon the authority of the Roman Pope, when he condemned as heretical 220 neo-Aristotelian theses in natural philosophy (Piché 1999). It is both explicit in Tempier's con-

demnation, and implied by many of his comments on those thesis, that the Divine Omnipotence can do anything which is not logically self-contradictory, including bringing about any effect without its typical causes. This holds, too, for those ‘effects’ we typically regard as our sensory experiences of our surroundings. Knowledge – *scientia* – requires eliminating all logically possible alternatives to any cognitive claim. All else is either divine revelation or fallible conjecture; natural philosophers can do no more, and no better, than to propose possible explanations of natural phenomena. That edict was later violated by Copernicus and Galileo, though honoured by Descartes (at least officially).⁴ Tempier’s edict made mere logical conceivability into a mainstay of philosophical analysis, argumentation and (dis-)proof (Boulter 2011), even if its implications for global perceptual scepticism were first explicitly generalised in Descartes’s *Meditations*.⁵

Infallibilism about cognitive justification limits epistemology to conceptual analysis, not only because it proscribes appeal to logically contingent empirical premises (other than those pertaining to first-person reports of appearances to oneself), but also because it requires reliable first-person awareness of *all* justificatory factors relevant to any claim at issue: the view now called ‘access internalism’. This includes full, competent reliable access to the factors constitutive of knowledge, so that one can determine whether these factors are, in any specific case, satisfied. This is the strong ‘K-K’ principle: The purported requirement that, to know that x , one must know that one knows that x . These considerations drove ‘traditional’ (pre-Gettier) epistemologists to seek a conceptual analysis of knowledge as consisting in justified true belief, as the conceptually necessary, jointly sufficient conditions for any and all empirical knowledge.

The chief methodological problem confronting epistemology as conceptual analysis is the Paradox of Analysis: How can any conceptual analysis be informative, and yet also be recognised to be complete and adequate? If we can recognise a conceptual analysis to be complete and adequate, we must already understand the concept(s) so analysed, in which case the analysis is uninformative. If instead a conceptual analysis is informative, how can we tell whether it is complete or adequate? This paradox of analysis greatly exercised philosophers from the 1940s into the 1990s, though neglected since. This neglect is reflected, if unwittingly, in how easily philosophers today offer or accept as serious challenges remarks of the form: ‘But couldn’t someone say _____?’, or: ‘But couldn’t it be, couldn’t it happen that _____?’ Such questions presume that any and all logically possible alternatives to any proposed account must be eliminated in order to justify that proposal. Such philosophers have inherited their methodological predilections from Bishop Tempier. Consider again Descartes’ statement that one perfection of the Divinity is that within the Divinity all perfections are simply one and unitary (AT 7:137). So saying does not suffice to *conceive* this purported truth; it is as much a contradiction as insisting that within the numerical unit, 1, all numbers are simply one and unitary: Any plurality of perfections is inconsistent with their simple numerical unity. Saying or claiming otherwise does not make it otherwise conceivable. Merely *thinking* that one is speaking or thinking cogently, however sincerely one may so suppose, does not suffice *actually* to think or to speak cogently. Neither our concepts, our meanings, nor the cogency of our own thinking or speaking are transparently self-

⁴*Prin.* 3.46, AT 8.1:100–1; *Disc. Meth.*, AT 6:45–6; *Le Monde*, AT 11:36.

⁵Widely known to Mediaevalists, the Paris Condemnation of 1277 remains just as widely neglected even by specialists in 17th Century philosophy, including those concerned with philosophical history; most recently, e.g., Lærke *et al* (2013). Papal infallibility was only made official dogma by the First Vatican Council (1870) in its ‘First dogmatic constitution on the Church of Christ’, chapt. 4, §9. It became the majority Catholic view during the Reformation, *i.e.* a century after the Paris Condemnation; see Tierney (1972).

evident in the ways philosophers still too often and habitually suppose (*cf.* Burge 2010).

The best solutions to the Paradox of Analysis all, implicitly or explicitly, replace conceptual analysis with conceptual explication (*cf.* esp. Hare 1960). It is striking and significant that both Kant (*KdrV* A727–31/B755–9) and Carnap (1950b, 1–18) distinguish between conceptual analysis and conceptual explication, in these very terms, and for very much the same reasons and to the same effect. Conceptual explication does not aspire to completeness; conceptual explication is selective and aspires to improve the clarity of the explicated concept(s) and to improve upon their use *in the context(s)* of original use of the concept(s) in question. No conceptual explication is known to be complete; all remain corrigible and partial; their assessment is always in part a function of their improved function within possible contexts of their *actual* use, *not* within merely imagined contexts of their (allegedly) possible use! Because they are context-bound in this way, conceptual explications involve – and invoke – important aspects of semantic externalism, the thesis that the content (intension) of a concept or term may be specified by factors unknown by a competent speaker, *S*, and which may concern circumstances of which *S*/he cannot become aware by simple reflection. Simply *calling* a philosophical account of a concept, term, phrase or principle an ‘analysis’ does not suffice for that account to *be* a conceptual analysis. If the content or adequacy of that account depends in part upon its context of actual use, it is an explication. The first methodological maxim is to make such context-dependence into a philosophical virtue. The questions are how to do so, and whether such virtues can aid epistemology.

Gettier’s (1963) counter-examples in effect echo Carnap’s distinction between conceptual analysis and conceptual explication, insofar as Gettier’s counter-examples invite us, his readers, to re-consider how we would use, understand and explicate the concepts ‘empirical knowledge’ and (cognitive) ‘justification’ in the kinds of circumstances of use in which Smith believes he knows something which, in view of contextual factors unknown to him, he cannot know.

§2.2 *Naturalised Epistemology & Causal Reliability ‘Theories’*. Another way of stating the exorbitant demands of infallibilism about cognitive justification is that it requires proving *a priori* that our cognitive capacities suffice for empirical knowledge in any possible environment, before trusting ourselves to know anything about our actual environment. These *a priori*, merely analytic aspirations of ‘traditional’ (pre-Gettier) epistemology were discarded by ‘naturalised’ epistemology, which appeals in various ways to various empirical findings in order to understand empirical knowledge. One popular genre of naturalised epistemology takes the form of ‘causal reliabilism’. The popularity of causal ‘theories’ of knowledge, of language or of human mindedness, unfortunately, exceeds their cogency.

Davidson (1980, 80; 2004, 98) noted that we lack knowledge of relevant causal laws and mechanisms in these domains. That is correct, significant, yet insufficient. Dretske’s information-theoretic epistemology established three important semantic points:

1. Causal relations are neither necessary nor sufficient for information relations. (Dretske 1981, 30–9)
2. Information relations are necessary for any specifically *semantic* content, and hence also for linguistic meaning or conceptual content. (Dretske 1981, 214–30)
3. Information relations are necessary though not sufficient for representations or for relations of

representation, whether sensory or conceptual. (Dretske 1981, 153–230; 1995⁶) These points stand, regardless of the (in)adequacy of Dretske’s account of the information decoding required for belief or knowledge (Dretske 1981, 57, 144, 219),⁷ and regardless of the shortcomings of his attempt to naturalise the mind. Dretske’s findings entail that bland appeals to ‘causality’ in matters of human mindedness are, as Pinker (1997, ix) remarked about earlier philosophical views of the mind, ‘too vapid to be wrong’.

If indeed we can know anything (such as how to see, recognise, read and understand these printed words), it is in part because our psycho-physio-neurology functions in ways which enable us to know something. The difficulty is to fill in this platitude with sufficient, informative specifics. This, I believe, must be a multi-disciplinary task. The proper task can be formulated and pursued only by heeding a major problem with its predecessor at the turn of the 20th Century (C.E.): ‘psychologism’. Reviewing that multi-disciplinary (also polyglot, robustly international and inter-continental) literature, as I recently did, underscores just how grave and pervasive were problems of psychologism, and why it so exercised not only Frege, but still at mid-Century also Carnap (1950b, §11). One chronic error of philosophers is simply to postulate whatever psychological or neurophysiological processes they think are required to fill in between the aspects of human mindedness they describe philosophically; so doing is evident not only, *e.g.*, in Brentano (1874), Lipps (1901, 1912, 1913), or Wundt (1907), but also in Quine (1995).⁸ More significantly: to pertain to knowledge or to epistemology, causal regularities or psycho-physiological processes must be, or must satisfy, *proper*, that is: properly *cognitive*, functions. They must be properly responsive to truth, accuracy and in many cases to evidence and analysis. These parameters are inherently normative, even though they are instantiated or effected by our socio-psychological neurophysiology. The recent rise of ‘virtue epistemology’ in effect addresses a gap in epistemology resulting from rejecting anything so psychological as judgment. Yet many beliefs don’t just happen to happen; many (if not most or all) beliefs are formed, and they are formed more or less responsibly – if often habitually so. Even Russell’s deliberately simple example, ‘The cat is on the mat’, requires not just sensory experience, but noticing the cat, the mat, and their respective locations. Seeing is not believing; believing is not simply seeing. Believing is propositionally structured in ways that sensory perception alone is not (Dretske 1969, chapt. 2). In many cases, beliefs result not merely from judgments, but as they should: from considered judgment (Elgin 1999).

§2.3 *Conceptual Content, Linguistic Meaning & Specifically Cognitive Reference.* A more fundamental problem confronting currently popular causal ‘theories’ highlights both the distinctiveness of epistemology and a long-standing methodological shortcoming of much analytic philosophy. Causal theories of human mindedness (language, thought, belief, knowledge, action) describe various intelligent capacities, actions or achievements in causal terms. Whether those causal terms refer, and if so how accurately, to any instantiations within our neurophysiology, are assumed by most so-called ‘causal’ theories; they are neither established nor investigated by

⁶This point is developed gradually in Dretske (1995); it concerns the relations between ‘natural’ and ‘functional’ meaning, and how representational systems must function in order to be capable of misrepresentation.

⁷For concise discussion, see Westphal (2003), §§26, 27.

⁸On Quine, see Murphey (2012), Westphal (2015). Ignorance if not contempt of our predecessors has reached such extremes that it is worth noting that Lipps’ translation of Hume’s *Treatise* is excellent, and that much current philosophical ‘naturalism’ is no more cogent than that at the turn of the 20th Century (C.E.); see Westphal (2016a), (2016b).

causally-minded philosophers. Responsible naturalistic epistemologists rightly appeal to results of relevant empirical sciences (*e.g.*, Kornblith 2002; Millikan 2004; Ryder *et al* 2012); this is as it should be. Cognitive reference to relevant, specific causal particulars and their kinds can be borrowed in this way – though only from *actual* scientific results.

Too often neglected by causal theorists of human mindedness is a basic distinction between (*e.g.*) uttering a sentence and making a claim. To be a *claim*, even a *candidate* cognitive claim, a sentence must be used to make a statement about some relevant particulars (of whatever kind or scale). The linguistic meaning or the conceptual content (intension) of any sentence or statement in principle does not suffice to determine whether there are any such particulars, or whether there are several, or only one such. However detailed or extensive a description may be (when used to explicate the linguistic meaning or conceptual content of any proposition, sentence, thought or statement), and regardless of whether it includes one or more putative definite referring expressions,⁹ intension cannot secure definite singular reference, because there may be no such particular as satisfies that intension, or there may be several such. Predication as a linguistic form does not suffice for predication as a proto-cognitive act of ascribing characteristics *to* any one (or more) particular(s). Conversely, an intension may in part be inaccurate, and yet be used successfully to designate some particular; this is part of Donnellan's (1966) point about successful referential use of inaccurate definite descriptions, such as 'The man in the corner holding a Martini', which can pick out one person within a group clustered in the indicated corner, where the others (let us suppose) evidently hold soft drinks, yet the designated individual in fact drinks from his Martini glass only water.

The epistemological significance of the distinction between predication as a grammatical (sentential) form and predication as a proto-cognitive achievement of ascribing a characteristic(s) to some particular individual(s) is augmented by Evans' (1975) account of predication. Evans argued (soundly, I submit) that mastery of predicates within some language requires being able to distinguish particulars or their specific aspects which are properly characterised by the predicate(s) in question, where such discrimination involves identifying by delimiting the relevant region occupied by the relevant particular(s) or their aspect(s). Evans showed that ascription of any characteristic and spatio-temporal localisation by delimitation of any particular exhibiting that characteristic are mutually interdependent proto-cognitive achievements.

Donnellan's and Evans' findings hold regardless of considerations about accuracy or precision; sufficient accuracy or precision to discriminate the relevant individual(s) and characteristic(s) from other individuals and characteristics suffices, even if they are approximate. Their points hold regardless of whether a single, particular individual or a plurality of particular individuals may be at issue; they hold regardless of the scale or duration of the relevant individual(s), and they hold regardless of issues about any cognitive or doxastic justification of the relevant attribution. Their findings are decisive for epistemology, for the following reasons.

To make even a candidate claim to know something empirically requires localising the relevant particular(s) within space and time, and ascribing some characteristic to it (or to them). Predication in the form of ascription of characteristic(s) to some particular individual(s) is necessary for Someone's claim to *have* any truth value, or any value as an approximation. Such attribution is also necessary to *evaluate* the truth or the accuracy of that attribution. Such attribution is also necessary for *S*'s claim to *have* any cognitive justification, of whatever form(s) and to whatever extent it may be cognitively justified. And – waiving for now issues about error, false belief

⁹Such as, *e.g.*: 'the', 'the one and only', 'the very one itself', 'those very ones there' or 'whoever just entered'.

and radical mis-representation – *S*'s claim having some kind and extent of cognitive justification is required to *assess* its cognitive justification, and whether it suffices for knowledge. (These conditions must be satisfied by any other claims required to determine whether *S*'s attribution errs or fails radically.)

Whatever may be the proper account of linguistic meaning or linguistic reference, and likewise whatever may be the proper account of conceptual content (intension), these do not suffice for epistemology, because they do not suffice for specifically *cognitive* reference – even putative, proto-cognitive reference – to localised, discriminated individuals. The ego-centric predicament posed by global perceptual scepticism voids not only the justificatory resources required for any empirical knowledge, it voids also the referential resources required to make even *candidate* cognitive claims (within the non-formal domain of putative empirical knowledge). This point holds regardless of theories of linguistic meaning or of conceptual content (intension); it concerns proto-cognitive *reference* to particulars. I stress 'proto-cognitive', because such reference is necessary for any empirical claim to know something; it is necessary for any claim even to be a *candidate* cognitive claim; accuracy and sufficient cognitive justification are distinct, further cognitive requirements. Consequently, philosophy of language and philosophy of mind may contribute to epistemology, but they do not suffice for epistemology: accuracy of ascription and specifically *cognitive* justification are not phenomena within the domains of philosophy of language or philosophy of mind (whether singly or combined). Ultimately, this is why philosophers of language such as Quine, Rorty or Davidson could only tell sceptics to get lost (above, §1).¹⁰ Thinking or supposing that one ascribes various characteristics to something does not suffice for any *actual* ascription. Actual ascription, even putative ascription, requires localising the relevant particular(s), sufficiently to discriminate them from their neighbours or relatives (*i.e.*, from similar, though relevantly different sorts of individuals).¹¹

§2.4 *Identifying & Exploiting our Cognitive Dependencies.* The ego-centric predicament of global perceptual scepticism purports to rob us of both our justificatory resources *and* of our referential resources, required for even candidate empirical claims to know anything. Despite his infallibilist aspirations, one feature of Descartes' strategy in the *Meditations* merits credit: In various regards Descartes seeks to characterise his manifold dependencies, including his cognitive dependencies, and to exploit these for epistemological insight. (Descartes himself did not advocate the disembodied mind invented by his successors; *cf.* Ferrini 2016.)

Here, at last, is a role for thought experiments in epistemology: Can thought experiments be devised to help us identify some of our fundamental cognitive capacities, and our consequent incapacities? Can thought experiments be devised to help us identify how some of our fundamental cognitive capacities are in principle and in practice dependent capacities, in ways which illuminate epistemological issues, without simply dismissing issues about scepticism, or simply replacing epistemology with empirical cognitive science? Can thought experiments contribute philosophically to the multi-disciplinary research required to understand human cognition?

¹⁰Though Quine (1969) appeared to advocate naturalising epistemology, he never did. His referential 'proxy functions' preserved no more than cardinality, but prescinded from any determinate ascription of characteristics to localised particulars. Quine said that physical objects are only a simplifying posit, but his own semantics precludes associating any specific or adequate concept(s) with his physical inscriptions or utterances. Talk is cheap; actually saying something significant is more demanding; see Westphal (2015).

¹¹I beg the reader's forbearance if I appear to belabour the obvious, but recent literature provides all too much evidence that these elementary points of epistemology and ascription (as distinct to mere description) are widely neglected; *e.g.*, the resurgence of 'analytic metaphysics' presupposes it.

Three such thought experiments are considered below (§§3–5). They are thought *experiments*, not merely examples, and they experiment with our human capacities for *thought*. They aim to contribute to our self-knowledge as cognisant beings, by helping us to identify some very basic features of our very finite form of human cognisance, and to appreciate their epistemological implications. In this regard, these examples are not merely conceptual, and concern not merely what is possible, but what is possible *for us* human beings.

Against Strawson's (1966) analytical reconstruction of Kant's 'Objectivity Argument', Rorty observed:

Arguments of the Strawsonian type rest on considerations of which words can be understood independently of which other words. The relevance of these considerations vanishes if we admit the possibility of a being who could experience something as an *X* but could not use the word '*X*' nor any equivalent expression. (Rorty 1970, 224; *cf.* 231)

Rorty's observation epitomises the characteristically 'analytical' misunderstanding of Kant's transcendental methods and proofs, a misunderstanding running through the whole discussion of 'analytic transcendental' arguments. Conceptual content or linguistic meaning as such cannot suffice for epistemology (*per* §2.3). Rorty's question, whether 'a being who could experience something as an *X* but could not use the word "*X*" nor any equivalent expression' is *possible*, itself belongs to the infallibilist tradition inaugurated by Bishop Tempier in 1277 (Boulter 2011), skewered by Carnap (1950b) and Gettier (1963), though superseded by Kant in 1781 (Westphal 2007). Unless *we* are that kind of being whose possibility Rorty supposes, that possibility is irrelevant to *our* human form of finite cognisance.

The prospects for epistemology are not significantly improved by seeking some form of 'broad' conceptual necessity; for that, too, we would need adequate criteria for adequate explication of 'broad' conceptual necessity, *and* adequate grounds for supposing that any such 'broad' conceptual necessity pertains to *us* as the finite cognisant beings we are. Not only metaphysics, but too much epistemology has 'merely groped around, and worst of all: amongst mere concepts' (*KdrV* Bxv)!¹² Like Kant, some exceptional ordinary language philosophers recognised that epistemological issues cannot be addressed merely in terms of linguistic meaning, conceptual or propositional content (intension) or other forms of conceptual analysis. Specifically epistemological issues are only engaged when we consider how *we* can form and use thoughts to make putative cognitive claims or judgments, whether in specific cases or wholesale.

Consider one point Kant claims to establish in this way. He grants that it is entirely conceivable that there be no space at all, and that we can conceive of space as being entirely empty, but he denies we can *represent* to ourselves the absence or lack of space (*KdrV* A24/B38–9). Kant's point concerns the fundamental role within human cognisance of representing individuals and events spatially, and how spatial representation is required for us to represent anything *as* distinct to ourselves. He makes comparable points about how we experience all appearances temporally, that is, within time (*KdrV* A31/B46). My present point is not to defend these claims, but to highlight Kant's concern with identifying *our* human forms of sensibility, which are (partly) constitutive of our human form of mindedness, namely, that we experience whatever we do spatially and

¹²The pervasive error here illustrated from Rorty (1970) was not due to lack of good information; see Watson (1881), Caird (1889), Bird (1966) and Dryer (1966). The error was made pervasive by philosophers' willingness to heed Russell's (1923; *CP* 9:39) battle-cry, 'back to the 18th Century', by which Russell had meant Hume, not Kant. Such default empiricism persists today in much 'analytic metaphysics'.

temporally. (Nothing here turns on whether our experiences are veridical.) The logical possibility of other forms of cognisance is altogether beside Kant's elementary epistemological point.

We cannot expect an entire epistemology from a few thought experiments, but we can expect some epistemologically significant results. In view of the manifold constraints on philosophical theory of knowledge reviewed above, that is far from nothing. Here I cannot develop or defend these results in detail; I hope however to make clear how to appreciate and assess these kinds of thought experiments. I shall consider them in systematic rather than chronological order, beginning with singular cognitive reference (above, §2.3).

§3 HEGEL ON THE SEMANTICS OF SINGULAR COGNITIVE REFERENCE.

Hegel's phenomenological method involves establishing some positive conclusions through strictly internal critique of the views and principles he opposes, considered in connection with their intended domains of use. About Hegel's method Robinson (1977, 2) observed that '... bad theory makes for bad practice, and the bad practice shows up the logical difficulties of the theory'. In *The Phenomenology of Spirit* (1807), and in his subsequent systematic philosophy, Hegel undertakes to revamp and augment Kant's Critical account of rational judgment and justification, whilst dispensing with Kant's Transcendental Idealism (and other such views). These aims, together with Hegel's methodological strictures – especially: to avoid *petitio principii* – require Hegel (*inter alia*) to argue against a conceptual 'knowledge by acquaintance'. This he does in the first chapter of the *Phenomenology*, by using thought experiments concerning commonsense cognitive claims, to elicit our recognition of fundamental and pervasive roles of various concepts and our competent use of them within even the apparently 'simplest' claims to know anything. The form of consciousness Hegel calls 'sense certainty' espouses naïve realism. Hegel's phenomenological presentation of this paradigmatic naïve realist highlights varieties of 'mediation' involved in what sense certainty purports is utterly immediate knowledge. Many of the 'meditations' revealed by Hegel's examples are conceptual and cognitive, involving the competent use of various concepts.¹³

Anticipating by a century Russell's early view that 'this' is a logically proper name, Hegel queries:

Thus *sense certainty* itself is to be asked: *What is the this?* If we take it in the doubled form of its being, as the *now* and as the *here*, the dialectic which it has within itself will receive just as comprehensible a form as the *this* itself is. To the question, *What is the now?* we thus answer for example: *The now is night*. A simple experiment suffices to test the truth of this sense certainty. We write this truth down; a truth can lose nothing through writing it down, just as little as by preserving it. If we look *now*, *this noon*, again at this written truth, we must say that it has become stale.

The *now*, which is *night*, is *preserved*, that is, it is treated as what it was given out to be, as a *being*; but it proves itself much more to be a non-being. Of course the *now* itself sustains itself, but as a something that is not *night*; and it sustains itself just as well against *day*, which it now is, as something that also is not *day*, This self-preserving *now* is thus not something immediate, but instead something mediated, for it is determined as something remaining and self-preserving

¹³A critical synopsis of Hegel's method and critique of naïve realism is provided by Westphal (2009); for a full-dress examination and assessment, see Westphal (2000), (2002–03); for the bearing of Hegel's critique on Russell, see Westphal (2010b). Translations are my own. Quotations are brief to curtail the scholarly digressions fuller quotation would require.

through the fact that another is not, namely the day and the night. Nevertheless it is still as simple as before, *now*, and in this simplicity it is indifferent to that which occurs in it (*PhdG* 9:64.29–65.11/¶¶95–6)

Hegel's example and discussion may appear either quaint or confused, but he is a master of taking views absolutely literally and identifying what follows from them, *and* what does *not*, and using these findings to identify further assumptions which allow that view to have appeared plausible or tenable. Yes, Hegel does not here distinguish between the 'is' of predication, the 'is' of being and the 'is' of identity – but he is arguing against a view which rejects any and all conceptual distinctions as unnecessary for simple, 'immediate' commonsense knowledge of anything. Yes, of course *we* know how to, and we do, sort out and sequence our experiences of various particulars, and our experiential episodes – but not simply by *sensing* whatever transpires around us! Seeing *that* it is now night, or day, or dusk or dawn is a conceptually mediated, propositionally structured cognitive achievement, however commonsensical, automatic or apparently 'immediate' it may appear.

Some philosophers have responded (in discussion) to such examples by reporting that they are unaware of using concepts in making any such claims or observations. Perhaps they are unaware of using concepts, but such lack of awareness proves nothing without the further premiss of strong Cartesian self-transparency. Descartes deceived himself about how self-transparent were his own clear and distinct ideas (Westphal 2014, §4.1); so too naïve realists. Here we begin to appreciate the point and character of Kant's transcendental inquiries, which Hegel further developed: to try to identify basic capacities we must exercise in order to be sufficiently self-aware as to wonder (*e.g.*) about the scope and character of human cognisance. Like Kant's, Hegel's cognitive psychology accords well with much recent cognitive science (Brook 1994; deVries 1988). As for distinguishing the 'is' of identity and the 'is' of predication, in 'Sense Certainty' Hegel *justifies* this distinction by *reductio ad absurdum* of a conceptual naïve realism, which disregards their distinction.

This point comes to a head when sense certainty retrenches to an alleged specious present awareness of any one particular (*PhdG* 9:67.23–32/¶105). Hegel continues his pursuit:

The *now* is pointed out, *this now*. *Now*; it has already ceased to be as it is pointed out. The *now* that *is*, is an other than the one pointed out, and we see, that the now is just this: insofar as it is, already no longer to be. The now, as it is pointed out to us, is something that *has been*, and this is its truth; it doesn't have the truth of being. It is therefore of course true that it has been. However what *has been*, is in fact *no being*; *it IS not*, and the concern was with being.

We thus see in this pointing out only a movement taking the following course: 1) I point out the now; it is maintained as the true. But I point it out as passing, or as something sublated. Thus I sublimate the first truth and 2) now I maintain as the second truth, that it *has been*, or is sublated. 3) But what has been is not. I sublimate the second truth, its having been or its being sublated. Thus I negate the negation of the now, and thus return to what was first maintained: that *now* is. The now and the pointing out of the now are thus so constituted, that neither the now, nor the pointing out of the now, is an immediate simple; instead, each is a movement which contains distinct moments within itself; But this first, which is reflected in itself, is not exactly the same as what it first was, namely, something *immediate*. Instead, it is just *something reflected within itself*, or a *simple* which remains what it is in other-being; a now that is absolutely many nows. And this is truthfully the now; the now as a simple day that has many nows within it, hours; such a now, an hour, is just so many minutes, and this now similarly is many nows and so on. – *Pointing out* is thus itself the movement which pronounces what the now is in truth, namely a result, or a plurality of nows

taken together; and pointing is the experience, that now is a *universal*. (*PhdG* 9:67.33–68.21)

If Hegel's points are now obvious to us demonstrative sophisticates, that does not make them insignificant. Hegel points out that any specific *use* of the concept 'time' involves specifying in context some relevant *period* of time; in adjoining paragraphs he makes the parallel points about using the concept 'space', 'region of space' and the personal pronouns (first-, second- or third-person), and how specifying (sufficiently, if approximately) the relevant scope of what is 'here' and 'now' – and *S/he* to whom it is so – is required in order to designate any specific individual as *this* particular here and now – or that one there and then, or witnessed by you or by her when- and wherever it was located and localised by Someone in particular. Our use of none of these concepts or terms is pointilistic, as it were; all of them are determinable concepts; their relevant scope and reference must – and can only be – be fixed *in situ*. Using these determinable concepts in such determinate ways, specifying their scope in context, is necessary for forming even the most ordinary commonsense knowledge, including any seeing *that* _____ such and so is the case.

In the final two paragraphs Hegel makes the further point, like Evans, that fixing *in situ* the relevant scope and reference of whatever in particular one claims to know about, requires not just descriptive intension, but *ascriptive* attribution *to* specific, localised individuals (or their aspects) which we (putatively) delimit within space and time. Hegel expressly notes – like Kant, and against Leibniz – that however extensive or detailed a description may be, it may equally well describe several individuals, none at all, or perhaps (by dumb contingent luck) only one: which case obtains is neither specified nor settled by that description (intension, classification), but instead by localising some putative individual(s) to which one ascribes some characteristics (*PhdG* 9:70.20–29/¶110).

In this way, Hegel argues by using these and related thought experiments to identify and facilitate our appreciation of logically contingent, though fundamental and pervasive features of *our* cognitive capacities, competences and achievements. Taken together, Hegel's examples constitute a *reductio ad absurdum* of naïve realism, which justifies the Thesis of Singular Cognitive Reference (above §2.3). This decisive, incisive thesis is Kant's, though he left to his readers to find in the joint implications of the Transcendental Aesthetic and the Amphiboly of the Concepts of Reflection.¹⁴

Hegel's initial characterisation of a 'universal' (concept) matches exactly that introduced by Hume in his account of distinctions of reason (*T* 1.1.7.17–18), which marks the downfall of concept empiricism: Hume's official 'copy theory' of sensory impressions and ideas, together with this three official 'laws' of psychological association, can at most account for classifications of sensed characteristics, as fine- or coarse-grained as one can perceptually discriminate. However, to account for merely determinable concepts, such as 'time', 'period of time', 'space', 'region of space', 'I', 'physical object' ('body') or 'word', Hume can only appeal to our 'imagination', but for these capacities of the imagination Hume can offer no *empiricist* account (Westphal 2013).

Finally, the Thesis of Singular Cognitive Reference (§2.3) can be seen to undergird O. K. Bouwsma's (1949) brilliant exposé and critique of Cartesian scepticism. The general corollary to that Thesis is this: Global sceptical 'hypotheses' are hypotheses in name only, because they lack any determinate, specifiable reference *to* any particulars alleged to be responsible for blocking the

¹⁴It was brought to my attention by Melnick (1989); I develop it in Westphal (2004), very much in accord with Bird (2006).

veridicality (or the justification) of any and all sensory experience. They must prescind from any such reference, in order to evade empirical investigation (and self-refutation). By evading reference in these ways, they fail to be even *candidate* cognitive claims; they are mere logical possibilities, with *no* assessable truth-value, accuracy or cognitive justification. In all three regards they lack cognitive standing, and so cannot serve to defeat or to undermine the cognitive justification of any claim with cognitive status, even as putative knowledge (ascriptive attribution to some localised individuals), however approximate or weakly justified it may be. Both Kant and Hegel recognised that fallibilism about cognitive justification is no sceptical capitulation.

§4 KANT ON THE “TRANSCENDENTAL AFFINITY” OF THE SENSORY MANIFOLD.

Taunting Leibniz, Hume (*En* 5.21) notes that his view of human concept- and belief-formation through customary habituation affords, as it were, a pre-established harmony between the order of nature and the order of thought. Hume is right about our cognitive dependence upon perceptible natural regularities, though his empiricism precludes its full appreciation. Kant noted that, although all human knowledge begins with experience, it does not for that reason all result from experience (*KdrV* B1). For all the sophistication of Kant’s account of the *a priori* concepts, principles, structures and functions of the human mind, he insisted that our cognitive capacities only become active in response to sensory stimulation from without the mind. Though necessary, sensory stimulation as such is insufficient: it must be such that we can process it, by bringing it under concepts in judgments whereby we classify and identify (at least putatively) various particular objects, events or persons surrounding us. This basic point holds, *mutatis mutandis*, Kant argues, regarding the contents of sensations, of empirical intuitions, of experiences and of the objects we experience.

Kant’s thesis is that unless the contents of one’s sensations have a minimum, humanly recognisable degree of regularity and variety they would not admit of perceptual synthesis, and so would provide no basis for even putative cognitive judgments using either *a priori* or empirical concepts. This ‘affinity’ (associability) of the sensory manifold is transcendental because *a priori* it is a necessary condition of possible self-conscious human experience. It is formal because it concerns the orderliness of the contents of sensations. However, ultimately it is satisfied neither by the *a priori* intuitive conditions of experience (spatiality and temporality as forms of our sensory receptivity) nor by the *a priori* conceptual conditions of cognitive judgment. Its satisfaction is due to the ‘content’ or the ‘object’ of experience (*KdrV*, A112–3, A653–4/B681–2).

Appearances must be associable in order for us to make cognitive judgments at all. This associability, Kant argues, must have an objective, necessary ground in order for experience to be at all possible for us. This ground Kant calls the ‘affinity’ of the sensory manifold; he argues for it using a wildly counterfactual thought experiment:

Now if this unity of association did not also have an objective ground, ... it would be entirely accidental that appearances should fit into a connection in human knowledge. For even though we should have the capacity to associate perceptions, it would remain entirely undetermined and accidental *whether they themselves were associable*; and in case they were not associable, then a multitude of perceptions, and indeed an entire sensibility would be possible, in which much empirical [sensation] would occur within my mind, but separated, and without belonging to *one* consciousness of myself, which, however, is impossible. For only because I ascribe all perceptions to one consciousness (original apperception) can I say of all perceptions that *I* am conscious of them. There must,

therefore, be an objective ground ... upon which rests the possibility, indeed, the necessity, of a law that extends to all appearances – a ground, namely, for regarding all appearances as data of the senses that must be associable in themselves and subject to universal rules of a thoroughgoing connection in their reproduction. *This objective ground of all association of appearances I entitle their affinity.* ... According to this principle all appearances, without exception, must so enter the mind or be apprehended, that they conform to the unity of apperception. Without synthetic unity in their connection, which is thus objectively necessary, this would be impossible (*KdrV*, A121–3; emphases added)

In this passage Kant points out that an intact and complete human sensibility and understanding, capable of associating perceptions, does not of itself determine whether any appearances or perceptions it has are in fact associable. If they weren't, there may be fleeting, random sensations, but there could be no unified, and hence no self-conscious, experience. The necessity of the associability of the sensory manifold is *conditional*; it holds between that manifold and any self-conscious human being. Necessarily, if a human being is self-consciously aware of anything via any sensory manifold (any plurality of sensations), then the content of that manifold is associable. The associability of this content *is* its 'affinity'. The fact that affinity is necessary for possible self-conscious human experience entails that this affinity is transcendental.

Kant stresses the transcendental status of this issue in the following passage, though here he speaks of a 'logical law of genera' instead of the 'transcendental affinity' of the sensory manifold:

If among the appearances offering themselves to us there were such a great a variety ... of content [*sic*], *i.e.*, regarding the manifoldness of existing beings – that even the most acute human understanding, through comparison of one with another, could not detect the least similarity (a case which can at least be thought), then the logical law of genera would not obtain at all, no concept of a genus, nor any other universal concept, *indeed no understanding at all would obtain*, since the understanding has to do with such concepts. The logical principle of genera therefore presupposes a transcendental [principle of genera] if it is to be applied to nature (by which I here understand only objects that are given to us). According to that [latter] principle, sameness of kind is necessarily presupposed in the manifold of a possible experience (even though we cannot determine its degree *a priori*), because *without it no empirical concepts and hence no experience would be possible.* (*KdrV*, A653–4/B681–2; emphases added.)

Despite Kant's shift in terminology, the minimum condition which satisfies the 'logical law of genera' likewise satisfies the 'transcendental affinity' of the sensory manifold: Below a certain (*a priori* indeterminable) degree of regularity and variety amongst the contents of sensations, our understanding cannot make judgments; consequently under that condition we cannot be self-conscious (because we cannot identify ourselves *as* being self-consciously aware *of* anything else). Consequently, this condition is a necessary, transcendental condition for the possibility of self-conscious experience. Above this minimal level of regularity and variety, there is then a reflective issue about the extent to which we can systematise (integrate) our experience of the world. Insofar as we must use concepts to see *that* anything is or is not the case, we can only do so within a world exhibiting humanly identifiable kinds of variety and repeatability amongst the particulars we experience.¹⁵

Kant's example of what we may call 'transcendental chaos': sensory contents so irregular we could not detect any regularities or varieties amongst them – provides a thought experiment

¹⁵I discuss Kant's examples and also Wittgenstein's (in §5) in greater detail in Westphal (2005).

which strongly supports the view now called mental content externalism. Kant expressly grants that transcendental chaos is logically possible; his transcendental point is that such chaos cannot hold of any world (of any environment) of which we human beings can be aware, nor within which we can be aware of ourselves *as* being aware of some appearances occurring before, during or after others. (Kant's link between these forms of awareness cannot be examined here; see Westphal 2016b.) If Kant's thought experiment about transcendental chaos is correct, it provides sufficient ground to block the sceptical generalisation from occasional possibility of perceptual error or misjudgment to the alleged possibility of universally nonveridical sensory 'experience'. The point of Kant's thought experiment lies neither in the question whether a world of sensory chaos is logically possible, nor in the question whether an unfortunate human being might possibly be flooded with incomprehensibly chaotic sensations. The reflexive, transcendental character of Kant's thought experiment lies in the question, whether *you*, dear reader, could be self-aware within a world in which your sensibility were flooded only by incomprehensibly chaotic sensations?

Kant's thought experiment may not be decisive, but it is bolstered by his analysis of the kinds of conceptual, judgmental achievements required to integrate sensations into percepts, and percepts into perceptual episodes, and those required to use the first-person pronoun. Those analyses do not rely on thought experiments, but rather upon considerations of what is necessary for us to process and integrate sensory information over time.¹⁶ It is worth noting here, however, that Hegel's thought experiments *contra* naïve realism (§4) and Kant's thought experiment regarding transcendental chaos nicely complement each other. This holds too of the third thought experiment, from Wittgenstein (§5).

Kant himself did not work out the full implications of his transcendental thought experiment about sensory chaos, for a reason later noticed and exploited by C. I. Lewis (1929). Fully developed, Kant's thought experiment can replace much of the 'Transcendental Deduction of the Pure Categories of the Understanding', and it refutes Kant's Transcendental Idealism – supporting instead Lewis's robust pragmatic realism, including his pragmatic conception of the relativised *a priori* (Westphal 2010, §2).

§5 WITTGENSTEIN ON THOUGHT & PERVASIVE REGULARITIES OF NATURE.

The thought experiments considered in this chapter comport with this aim of Wittgenstein's:

Not empiricism and yet realism in philosophy, that is the hardest thing. (Wittgenstein, *RFM* VI, §23; p. 325)

In a note to the *Investigations*, Wittgenstein observes:

What we have to mention in order to explain [*zur Erklärung*] the significance, I mean the importance, of a concept, are often extremely general facts of nature. Such facts as are hardly ever mentioned because of their great generality. (*PI* §142 Note)

Wittgenstein sternly advised caution whenever a philosopher starts talking about how things

¹⁶See Guyer (1989), Strawson (1989); on Kant's identification of our basic logical forms of judgment see Wolff (2016), (forthcoming).

must be.¹⁷ Yet caution about how things ‘must’ be is consistent with pointing out how things must be, under specified conditions. For example, Wittgenstein showed forcefully that we can use language and can follow rules only within and due to our relatively stable and identifiable social and worldly context (Savigny 1991; Schroeder 2001; Travis 2006; Wright 1986).

To highlight the character and significance of ‘extremely general facts of nature’ Wittgenstein develops and suggests some very radical, probing thought experiments. One such experiment begins with a chair which disappears, or at least seems to occasionally, though at other times we can touch it (*PI* §80). Occasions such as these are perplexing, but Wittgenstein underscores their significance by radicalising the suggested instabilities of our surroundings:

Only in normal cases is the use of a word clearly prescribed to us; we know, have no doubt, what to say in this or that case. The more abnormal the case, the more doubtful it becomes what we now are to say here. And if things behaved quite differently from how they actually behave – if there were for instance no characteristic expression of pain, of fear, of joy; if rule became exception and exception rule; or if both became phenomena of roughly equal frequency – this would make our normal language games lose their point [*Witz*]. – The procedure of putting a lump of cheese on a balance and fixing the price by the turn of the scale would lose its point if it frequently happened that such lumps grew or shrank for no obvious reason. (*PI* §142)

Wittgenstein draws attention to how our language is governed in ways that suit the nature we know and live in. His considerations highlight a crucial *conditional* necessity, that to have any point or any use at all, the structure of our language must broadly comport with the structure of the world we inhabit (*PI* II §*xix*).

Wittgenstein invites us to imagine these wildly counterfactual circumstances:

If a ruler expanded to an extraordinary extent when slightly heated, we would say – in normal circumstances – that that made it *unusable*. But we could think of a situation in which this was just what was wanted. I am imagining that we perceive the expansion with the naked eye; and that we ascribe the same numerical measure of length to bodies in rooms of different temperatures, if they measure the same by the ruler which to the eye is now longer, now shorter.

It can thus be said: What is here called ‘measuring’ and ‘length’ and ‘equal length’, is something different from what we call those things. The use of these words is different from ours; it is *akin* to it; and we too use these words in a variety of ways. (*RFM* I §5; *cf.* §140)

Wittgenstein’s example is expressly enthymematic. The situation in which the rapidly expanding ruler is ‘just what was wanted’ is one in which there are, not just rooms of various temperatures, but also many other objects which expand readily (and very nearly at the same rate) with changes in temperatures, just like the ruler. Such a regularity would give sense to the imagined, non-standard practice of measuring. This imagined non-standard measuring practice underscores ways in which our standard measuring practices are rooted not only in arithmetic but also in very general regularities of nature: most particulars we ordinarily deal with do not expand dramatically with small changes in temperature. Wittgenstein’s examples also underscore the importance of the scientific practice of specifying critical quantities like density by reference to standard temperature and pressure.

Wittgenstein’s thought experiments invite us to reflect on cases where ‘things behave quite

¹⁷ *Cf.* *PI* §§81, 101, 131; *RFM* II §41, III §§30 ¶2, 31 ¶1, VI §§7, 8, 24, 46, VII §67.

differently from how they actually behave, ... if rule became exception and exception rule' (*PI I* §142). This suggests a massive inversion of typical regularities, by which the common rule would become the isolated instance whilst normally bizarre cases would become ubiquitous. Consider a world in which things in our environment did not conserve their quantities, either of volume, or weight or number; imagine that they melded together like drops of liquid or bits of soft dough, but without preserving mass, volume or shape in any noticeable way. If such non-conserving goo congealed or parted relatively slowly, perhaps we might be able to track some portions of it. If instead their behaviour were quite rapid, we could not track them. If this were our environment, we could not identify these items (even if there were 'items'), we could not count them, and we could not develop or use arithmetical concepts.

The transcendental character of Wittgenstein's examples are plainest in *On Certainty*.¹⁸ Wittgenstein again stresses the role of identifiable, stable natural regularities for the very point of our language games (*OC* §513, *cf.* §505); without such regularities truth and falsehood would be impossible (*OC* §514). This is one of Wittgenstein's 'fundamental' statements, statements that are neither logical truths nor results of empirical investigation (*OC* §§110, 138, 402, 494, 512); *i.e.*, they defy Hume's fork. Nevertheless, they form the stable basis, rooted in practice (*OC* §§7, 29, 110, 139, 402), without which we simply could not think (*OC* §§403, 506), hence not even about ourselves. Wittgenstein's reflections are genuinely transcendental because that they concern the contingent, conditional necessities which must be satisfied if self-conscious human thought or experience is to be at all possible for us.

Inspired by Wittgenstein, Waismann (1945) detailed the 'porosity' or 'open texture' of all empirical concepts, which precludes any conclusive (empiricist) verification of any empirical claim. Likewise our empirical classifications of individuals, their features and their kinds remain in principle and in practice corrigible. Waismann's points are important scores against infallibilist presumptions about cognitive justification. Similarly inspired, and likewise critical of infallibilist presumptions about cognitive justification, Austin (1946) suggested we consider this radical thought experiment:

"Being sure it's real" is no more proof against miracles or outrages of nature than anything else is or, *sub specie humanitatis*, can be. If we have made sure it's a goldfinch, and a real goldfinch, and then in the future it does something outrageous (explodes, quotes Mrs. Woolf, or what not), we don't say we were wrong to say it was a goldfinch, we don't know what to say. Words literally fail us (Austin 1946, 160; 1979, 86)

Austin is right that infallibility is humanly impossible, certainly within the domain of empirical knowledge. That is important, yet insufficient. Reflecting on these examples and on Wittgenstein's, Frederick Will (1968) observed that not merely words fails us in such bizarre cases: thought itself fails us. We very finite, semi-rational human beings can only think insofar as we inhabit a tolerably comprehensible, negotiable, sufficiently describable, identifiable world.

§6 CONCLUSIONS.

Global perceptual scepticism presumes we have far greater capacities for intelligent thought, speech and 'experience' than we do. That can be shown by transcendental use of these sorts of

¹⁸ My remarks on *On Certainty* are indebted to notes on this topic kindly shared with me by Graham Bird.

thought experiments, provided philosophers recognise that the tasks of epistemology too – as Kant recognised (*KdrV* A805/B833) – are comprehended within Thales’ commandment, inscribed at Delphi: ‘Know thyself!’ Rescinding infallibilism and mere conceptual analysis, and recognising our manifold if indirect and often implicit dependence upon our environs, both natural and social, are the beginnings of epistemological insight, which can be fostered and informed by transcendental use of epistemological thought experiments, though only if we change fundamentally our philosophical ‘method of thinking’.

REFERENCES

- Austin, J. L., 1946. ‘Other Minds’. *Proceedings of the Aristotelian Society*, sup. vol. 20:148–187; rpt. in: *idem.* (1979), 76–110.
- , 1979. J.O. Urmson and G.J. Warnock, eds., *Philosophical Papers*, 3^d ed. Oxford, The Clarendon Press.
- Bird, Graham, 1996. *Kant’s Theory of Knowledge*. London, Routledge & Kegan Paul
- , 2006. *The Revolutionary Kant*. Chicago, Open Court.
- Boulter, Stephen, 2011. ‘The Origin of Conceivability Arguments’. *Metaphilosophy* 42.5:617–641.
- Bouwsman, O.K., 1949. ‘Descartes’ Evil Genius’. *The Philosophical Review* 58.2:141–151.
- Brentano, Franz, 1874. *Psychologie vom empirischen Standpunkt*, 2 vols. Leipzig, Duncker und Humblot.
- Burge, Tyler, 2010. *Origins of Objectivity*. Oxford, The Clarendon Press.
- Caird, Edward, 1889. *The Critical Philosophy of Immanuel Kant*, 2 vols. Glasgow, Maclehose.
- Carnap, Rudolf, 1928. *Der logische Aufbau der Welt*. Berlin, Weltkreis.
- , 1950a. ‘Empiricism, Semantics, and Ontology’. *Revue Internationale de Philosophie* 4:20–40; 2nd rev. ed. in: Carnap (1956), 205–221.
- , 1950b. *Logical Foundations of Probability*. Chicago, University of Chicago Press.
- , 1956. *Meaning and Necessity*, 2nd rev. ed. Chicago, University of Chicago Press.
- Davidson, Donald, 1980. *Essays on Actions and Events*. Oxford, The Clarendon Press.
- , 2004. *Problems of Rationality*. Oxford, The Clarendon Press.
- Descartes, René, 1964–76. C. Adam and P. Tannery, eds., *Oevres de Descartes*, rev. ed. Paris, Vrin; cited as ‘AT’ by vol.:page numbers.
- Donnellan, Keith, 1966. ‘Reference and Definite Descriptions’. *The Philosophical Review* 75.3:281–304.
- Dretske, Frederick I., 1969. *Seeing and Knowing*. London, Routledge & Kegan Paul.
- , 1981. *Knowledge and the Flow of Information*. Cambridge, Mass., MIT/Bradford Books.
- , 1995. *Naturalizing the Mind*. Cambridge, Mass., MIT Press.
- Dryer, Douglas, 1966. *Kant’s Solution for Verification in Metaphysics*. London, George Allen & Unwin.
- Elgin, Katherine Z., 1999. *Considered Judgment*. Princeton, Princeton University Press.
- Evans, Gareth, 1975. ‘Identity and Predication’. *Journal of Philosophy*; rpt. in: *idem.* (1985), 25–48.
- , 1985. *Collected Papers*. Oxford, The Clarendon Press.
- Ferrini, Cinzia, 2016. *L’invenzione di Cartesio. La disembodied mind negli studi contemporanei: eredità o mito?* Trieste, Edizioni dell’Università di Trieste.
- Gettier, Edmund, 1963. ‘Is Justified True Belief Knowledge?’ *Analysis* 23.6:121–23.
- Guyer, Paul, 1989. ‘Psychology and the Transcendental Deduction’. In: E. Förster, ed., *Kant’s Transcendental Deductions* (Stanford, Stanford University Press), 47–68.
- Hare, R. M., 1960. ‘Philosophical Discoveries’. *Mind* 69.274:145–162.
- Hegel, G.W.F. 1807. *Phänomenologie des Geistes*. Bamberg & Würzburg, Goephard; critical ed. By W. Bonsiepen & R. Heede, in: *GW* 9.
- , 1986–2016. *Gesammelte Werke*, 31 vols. Deutsche Forschungsgemeinschaft, with the Hegel-Kommission der Rheinisch-Westfälischen Akademie der Wissenschaften and the Hegel-Archiv der Ruhr-Universität Bochum. Hamburg, Meiner; cited as ‘*GW*’ by volume:page.line numbers.

- , forthcoming. *The Phenomenology of Spirit*, T. Pinkard, tr.; cited by paragraph (§) numbers correctly provided by the translator corresponding to Hegel (1807)/*GW* 9.
- Hume, David., 1739–40. *A Treatise of Human Nature*. Critical edition by D. F. Norton and M. J. Norton (Oxford: Oxford University Press: 2000); cited as ‘T’ by Part.Book,§.Paragraph numbers.
- , 1748. *An Enquiry Concerning Human Understanding*. Critical edition by Tom Beauchamp (Oxford: The Clarendon Press: 2007); cited as ‘En’ by §.paragraph numbers.
- Kant, Immanuel, 1781. *Critik der reinen Vernunft*, 1st ed. Riga, Hartknoch; cited as ‘KdrV’, ‘A’; rpt. in: *idem.* (1998a) and (2009).
- , 1787. *Critik der reinen Vernunft*, 2nd rev. ed. Riga, Hartknoch; cited as ‘B’; rpt. in: *idem.* (1998a) and (2009).
- , 1998a. J. Timmermann, ed., *Kritik der reinen Vernunft*. Hamburg, Meiner; philosophische Bibliothek 505.
- , 1998b. P. Guyer and A. Wood, trs., *Critique of Pure Reason*. Cambridge, Cambridge University Press.
- , 2009. K. Worm and S. Boeck, eds., *Kant im Kontext III – Komplettausgabe*, 2nd ed.; release (XP/Visita) 6/2009. Berlin, InfoSoftWare.
- Kornblith, Hilary, 2002. *Knowledge and its Place in Nature*. Oxford, The Clarendon Press.
- Lærke, Mogens, Justin E.H. Smith and Eric Schliesser, eds., 2013. *Philosophy and its History: Aims and Methods in the Study of Early Modern Philosophy*. Oxford, Oxford University Press.
- Lewis, Clarence Irving, 1929. *Mind and the World Order*. New York, Charles Scribner’s Sons; rpt. with revisions, New York: Dover, 1956.
- Lipps, Theodore, 1901. *Das Selbstbewusstsein: Empfindung und Gefühl*. Wiesbaden, Bergmann.
- , 1912. *Grundzüge der Logik*. Leipzig, Voss.
- , 1913. *Psychologische Untersuchungen*, 2 vols. Leipzig, Engelmann.
- Melnick, Arthur, 1989. *Space, Time, and Thought in Kant*. Dordrecht, Kluwer.
- Millikan, Ruth Garrett. 2004. *Varieties of Meaning: The 2002 Jean Nicod Lectures*. Cambridge, Mass., MIT Press.
- Murphey, Murray G., 2012. *The Development of Quine’s Philosophy*. Berlin, Springer.
- Piché, David, 1999. *La Condamnation parisienne de 1277*. Paris, Vrin.
- Pinker, Stephen, 1997. *How the Mind Works*. New York, Norton.
- Quine, W.V.O., 1969. ‘Epistemology Naturalized’. In: *idem.*, *Ontological Relativity and Other Essays* (New York, Columbia University Press), 69–90.
- , 1995. *From Stimulus to Science*. Cambridge, Mass., Harvard University Press.
- Robinson, Johnathan, 1977. *Duty and Hypocrisy in Hegel’s Phenomenology of Mind*. Toronto, University of Toronto Press.
- Rorty, Richard, 1970. ‘Strawson’s Objectivity Argument’. *Review of Metaphysics* 24:207–44.
- , 1986. ‘Pragmatism, Davidson and Truth’. In: E. Lepore, ed., *Truth and Interpretation* (Oxford, Blackwell), 333–355.
- Russell, Bertrand, 1911. ‘Knowledge by Acquaintance and Knowledge by Description’. *CP* 6:147–82.
- , 1913. ‘Theory of Knowledge: The 1913 Manuscript’. In: *idem.* (1994), vol. 7. (Part I: ‘On the Nature of Acquaintance’.)
- , 1994. J. Passmore, gen. ed., *The Collected Papers of Bertrand Russell*. London, Routledge.
- Ryder, Daniel, Justine Kingsbury, Kenneth Williford, eds., 2012. *Millikan and Her Critics*. New York, John Wiley & Sons.
- Savigny, Ike von, 1991. ‘Self-conscious Individual versus Social Self: The Rationale of Wittgenstein’s Discussion of Rule Following’. *Philosophy and Phenomenological Research* 51:67–84.
- Schroeder, Severin, 2001. ‘Private Language and Private Experience’. In: H.-J. Glock, ed., *Wittgenstein: A Critical Reader* (Oxford, Blackwell), 174–98.
- Strawson, Peter F., 1966. *The Bounds of Sense*. London, Methuen.
- , 1989. ‘Sensibility, Understanding, and the Doctrine of Synthesis: Comments on Henrich and

- Guyer'. In: E. Förster, ed., *Kant's Transcendental Deductions* (Stanford, Stanford University Press), 69–77.
- Tierney, Brian, 1972. *Origins of Papal Infallibility, 1150–1350*. Leiden, Brill.
- Travis, Charles, 2006. *Thought's Footing. A Theme in Wittgenstein's Investigations*. Oxford, The Clarendon Press.
- Waismann, Frederick, 1945. 'Verifiability'. *Proceedings of the Aristotelian Society*, sup. vol. 19:119–150.
- Watson, John, 1881. *Kant and his English Critics. A Comparison of Critical and Empirical Philosophy*. Glasgow, Maclehose; London and New York, Macmillan.
- Westphal, Kenneth R., 1987–88. 'Sextus Empiricus *Contra* René Descartes'. *Philosophy Research Archives* 13:91–128.
- , 1997. 'Frederick L. Will's Pragmatic Realism: An Introduction'. In: Frederick L. Will, *Pragmatism and Realism* (Lanham, Md., Rowman & Littlefield), *xiii–lxi*.
- , 2002–03. „Analytischer Gehalt und zeitgenössische Bedeutung von Hegels Kritik des unmittelbaren Wissens“. *Jahrbuch für Hegel-Forschungen* 8/9:129–43.
- , 2003. *Hegel's Epistemology: A Philosophical Introduction to the Phenomenology of Spirit*. Cambridge, Mass., Hackett Publishing Co.
- , 2004. *Kant's Transcendental Proof of Realism*. Cambridge, Cambridge University Press.
- , 2005. 'Kant, Wittgenstein, and Transcendental Chaos'. *Philosophical Investigations* 28.4:303–23.
- , 2007. 'Consciousness and its Transcendental Conditions: Kant's Anti-Cartesian Revolt'. In: S. Heinämaa, V. Lähteenmäki, & P. Remes, eds., *Consciousness: From Perception to Reflection in the History of Philosophy* (Dordrecht, Springer), 223–243.
- , 2009. 'Hegel's Phenomenological Method and Analysis of Consciousness'. In: *idem.*, ed., *The Blackwell Guide to Hegel's Phenomenology of Spirit* (Oxford: Wiley-Blackwell), 1–36.
- , 2010a. 'Kant's *Critique of Pure Reason* and Analytic Philosophy'. In: P. Guyer, ed., *Cambridge Companion to Kant's Critique of Pure Reason* (Cambridge, Cambridge University Press), 401–430.
- , 2010b. 'Hegel, Russell and the Foundations of Philosophy'. In: A. Nuzzo, ed., *Hegel and the Analytical Tradition* (New York, Continuum), 174–194.
- , 2013. 'Hume, Empiricism and the Generality of Thought'. *Dialogue: Canadian Journal of Philosophy/ Revue canadienne de philosophie* 52.2:233–270.
- , 2014. 'Autonomy, Freedom and Embodiment: Hegel's Critique of Contemporary Biologism'. *The Hegel Bulletin* (Cambridge University Press) 35.1:56–83.
- , 2015. 'Conventionalism & the Impoverishment of the Space of Reasons: Carnap, Quine & Sellars'. *Journal for the History of Analytic Philosophy* 3.8:1–66.
- , 2016a. 'Mind, Language & Behaviour: Kant's Critical Cautions *contra* Contemporary Internalism & Causal Naturalism?'. In: S. Babür, ed., *Felsefede Yöntem/Method in Philosophy*, special issue of *Yeditepe'de Felsefe/Philosophy at Yeditepe* 10 (İstanbul, Yeditepe Üniversitesi Press), 102–149.
- , 2016b. 'Kant's Dynamical Principles: The Analogies of Experience'. In: J. O'Shea, ed., *Kant's Critique of Pure Reason: A Critical Guide* (Cambridge, Cambridge University Press), 000–000.
- Will, Frederick L., 1968. 'Thoughts and Things'. Presidential Address to the Western (now Central) Division of the American Philosophical Association; rpt. in: *idem.*, (1997), 1–20.
- , 1997. K. R. Westphal, ed., *Pragmatism and Realism*, Foreword by Alasdair MacIntyre. Lanham, Md, Rowman & Littlefield.
- Wimsatt, William C., 2007. *Re-engineering Philosophy for Limited Beings: Piecewise Approximations to Reality*. Cambridge, Mass., Harvard University Press.
- Wittgenstein, Ludwig, 1958. G.E.M. Anscombe, tr., *Philosophical Investigations*, 2nd ed. London, Macmillan; cited as 'PP', by Part, § numbers.
- , 1969. G.E.M. Anscombe and G.H. vonWright, eds.; D. Paul and G.E.M. Anscombe, trs., *On Certainty*. Oxford, Basil Blackwell; cited as 'OC'.
- , 1978. G.H. vonWright, R. Rhees and G.E.M. Anscombe, eds.; G.E.M. Anscombe, tr., *Remarks on the Foundations of Mathematics*, 2nd rev. ed. Cambridge, Mass.: M.I.T. Press; cited as 'RFM'.
- Wolff, Michael, 2009. *Abhandlungen über die Prinzipien der Logik*, 2nd rev. ed. Frankfurt am Main, Kloster-

mann.

- , 2016. ‘How Precise is Kant’s Table of Judgments?’ In: J. O’Shea, ed., *Kant’s Critique of Pure Reason: A Critical Guide* (Cambridge, Cambridge University Press), 000–000.
- , forthcoming. ‘Kant’s Table of Judgments: Frege’s Critique and Kant’s Counterargument’.
- Wright, Crispin, 1986. ‘Does *Philosophical Investigations* I.258–60 Suggest a Cogent Argument against Private Language?’ In: P. Pettit & J. McDowell, eds., *Subject, Thought, and Context* (Oxford, The Clarendon Press), 209–266.
- Wundt, Wilhelm, 1907. *System der Philosophie*, 3 vols., 3^d rev. ed. Leipzig, Engelmann.