13 Edmund Husserl's methodology of concept clarification

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> [I]t is precisely behind the 'self-evident' (*Selbstverständlichkeiten*) that the hardest problems lie hidden ... so much so that philosophy may be paradoxically but not unprofoundly called the science of trivialities (*die Wissenschaft von der Trivialitäten*).
>
> (Husserl, *Logical Investigations*)[1]

1 Philosophy as a priori essential analysis

That Edmund Husserl (1859–1938), with his *phenomenology*, revolutionized the way philosophy was practised in the twentieth century is well known. It is less well known that his overall approach to the analysis of philosophical problems had much in common with practices associated with the then emerging 'analytic' philosophy. Both advocate rigorous method, abandoning speculation, solving *problems* rather than tracking themes through the history of philosophy, pursuing analyses through carefully drawn distinctions, and so on.[2] Husserl drew his own concept of analysis from several sources including: Weierstrass's conception of arithmetical analysis; Brentano's descriptive psychology; and the typical analyses of the classical empiricist tradition that involved cashing out concepts in terms of some basic sensory intuitions ('impressions'). However, he continued to develop original and unique forms of analysis, specifically those involving identifying the a priori subjective (but not empirical psychological) acts involved in the constitution of objectivities of every form. For Husserl, the practice of philosophy involves the exploration of the a priori. As he wrote in the *Logical Investigations*:

> The a priori ... is, at least in its primitive forms, obvious, even trivial, but its systematic demonstration, theoretical pursuit and phenomenological clarification remains of supreme scientific and philosophical interest, and is by no means easy.
>
> (LU IV §14, II, p. 73; Hua XIX/1 345)

In carrying out his project, Husserl offers many penetrating and innovative a priori conceptual analyses of scientific and epistemic concepts, e.g. his analysis of the concept of logic as a pure a priori formal science, his differentiation of the formal and the material a priori, his accounts of intentionality, signification, object, content, whole and part, universals, the meaning of identity (against Frege), inference (*Schluss*), consequence (*Folge*), direct reference, and so on. In addition, Husserl offers rich and original characterizations of perception, fantasy, memory, pictorial-awareness, judgement and other modalities of consciousness as part of an overall reflective a priori analysis of the essence of consciousness as such. Obviously, in this paper, we cannot rehearse all these various conceptual analyses; rather, we shall attempt to specify more precisely what Husserl's conception of phenomenological analysis is, especially as he employed it in the period from 1891 to 1907, when he was formulating his very particular understanding of 'descriptive phenomenology' as it evolved from Brentanian *descriptive psychology*.

In the period between 1891 and 1901, Husserl primarily understood phenomenology as the fundamental 'clarification' (*Klärung*) and 'epistemic critique' (*Erkenntniskritik*) of what he termed the 'Idea of knowledge', setting out the a priori structures of the concepts and acts involved essentially in cognition and knowledge per se. In particular, Husserl is seeking a specific kind of analysis that involves the identification of certain subjective conditions necessary for objective cognition, and trying to distinguish these 'phenomenological' conditions from the empirical, factual or 'psychological' conditions also involved in human cognition. After 1907, he came to recognize the affinity between his approach and that of Kant, and reformulated phenomenology as a new and radical kind of transcendental philosophy.[3] This latter development, which included embracing the concept of the transcendental ego which he had earlier resisted, lies outside the scope of this paper, but it is worth emphasizing that Husserl's later investigations continue to deepen his interest in the a priori correlation between forms of objectivity and the subjective achievements that constitute them.

2 Philosophy as clarification of fundamental scientific concepts

Husserl originally trained as a mathematician, was briefly an assistant to Karl Weierstrass, the founder of arithmetical analysis, enjoyed close personal and professional relations with Cantor and Hilbert, and corresponded with leading mathematicians and logicians including Gottlob Frege. Due to his contact with one of the pioneers of descriptive psychology – Franz Brentano – Husserl changed career from mathematics to philosophy. His first publication, *Philosophy of Arithmetic* (1891, hereafter PA),[4] offers a descriptive psychological analysis of basic mathematical concepts and operations. He speaks of finding the 'origin' (*Ursprung*, PA Hua XII 17; 64), 'genesis' (*Entstehung*, PA XII 17) or 'source' (*Quelle*, PA XII 179) of basic

arithmetical 'concepts' (*Begriffe*) in order to clarify their 'essence and origination' (*Wesen und Entstehung*, PA XII 15). The subtitle of PA, 'Logical and Psychological Analyses', clearly indicates that Husserl envisages different kinds of analysis, although he does not explicitly differentiate them within the work itself. Gradually, as is evident from the *Logical Investigations* (e.g. LU II §6; II §31) and later (e.g. *Formal and Transcendental Logic*), he evolved a tripartite distinction between 'psychological', 'phenomenological' and logical analyses.

Husserl was inspired by Franz Brentano's vision of philosophy as a rigorous science. For him – as for Brentano and, indeed, later for Wittgenstein – philosophy aims at 'clarification' or 'illumination' (*Klärung*, *Aufklärung*, *Klarlegung Erhellung*).[5] *Clarification* means 'making sense', casting critical light on the achievements of cognition (*Erkenntnis*), which Husserl understood in the broadest sense to include (especially in his later writings) the whole human encounter with the world as it is carried out in the 'natural attitude' as well as in scientific practice. Indeed philosophy itself aims at 'ultimate clarification' (*Letztklärung*) or 'ultimate grounding' (*Letztbegründung*) of the sense of our entire cognitive accomplishment. Clarification, however, must – as with Aristotle – accord with the level of exactness that the subject-matter itself allows.[6] The philosophical clarification that Husserl sought involved gaining a grasp of the essential (or, in his words, 'eidetic') character of the key concepts in any specific epistemic or ontological domain.

In his early years Husserl was concerned primarily with *epistemological* clarification, the 'critique of knowledge', 'the elucidation ... of the sense and possibility of validly objective knowledge'.[7] For him, clarification could not be piecemeal but had to extend to the interconnecting unity of all the sciences; indeed, it had to justify the very theories of science also. In short philosophy requires a complete 'theory of science' (*Wissenschaftslehre*) and must be carried out in a rigorously scientific manner:

> Above all, philosophy means not irrelevant, speculative mysticism but rather nothing other than the ultimate radicalisation of rigorous science.
>
> (*Draft Preface*, p. 30; Fink 123)

Like Kant, Husserl was dissatisfied with the vagueness and lack of definition of many central philosophical concepts and with the manner in which every philosophical insight was endlessly disputed. Philosophy had become a matter of opinion or taste with no hope of agreement and resolution of difficulties. Equally, Husserl was also dissatisfied with the lack of theoretical rigour in the formal sciences. They too displayed 'lack of inner clarity and rationality' (LU Prol. §4, I, p. 15; Hua XVIII 26). The experimental sciences of his day were shot through with prejudice, specifically, a leaning towards *positivism* (which too narrowly restricted the data of evidence to the date of

sensation, Hua XXV 9). Not only was philosophy not scientific, but the sciences themselves lacked 'the philosophical spirit' as he would later put it (Hua XI 355).

Phenomenology is announced in the Introduction to the Second Volume of the *Logical Investigations* (1901) as *the* method for eliminating prejudice and clarifying once and for all fundamental epistemological and logical concepts, so as to set philosophy on the royal road to secure science. Husserl had left the analysis of purely mathematical concepts in order to focus on central *epistemic* concepts that belong to the very 'form of knowledge' (LU *Prol*. §67), e.g.: 'proposition', 'sense', 'object', 'state of affairs', 'judgement' and, crucially, 'evidence' and 'truth'. His aim was to bring these concepts to 'clarity and distinctness' by grasping their evidential character, which, as in PA, still involved tracing them back to their 'ultimate sources' (Hua XX/1 280), in the intuitions that underlie them. As Husserl insists: 'Logical concepts, as valid thought-unities, must have their origin in intuition' (LU, Intro. §2, I, p. 168, Hua XIX/1 10). The problem, then, is how to understand this appeal to intuition in Husserlian phenomenology.

3 Grounding concepts in intuitions

Husserl was captivated by Descartes' project of securing science on the basis of evident cognitions, cognitions given 'clearly and distinctly' (*clare et distincte*).[8] Central to the Cartesian way is an account of evidence. However, for Husserl, neither Descartes nor the modern philosophical tradition grasped the real meaning of evidence. As Husserl would put it in his 1906–7 lectures:

> Descartes lacked, as did all modernity, any intentional explication of evidence as the achievement of self-presentation (*Selbstdarstellung*), in which the currently meant comes to original self-givenness.
>
> (XXXIV 409, my translation)

For Husserl, evidence has ultimately to be construed in terms of *self-givenness* of the matter. Following the empiricist tradition, Husserl maintains that knowledge begins from experience and must be related back to experience: 'living is … in a certain sense, an experiencing' (*So zu leben ist … in gewissem Sinn ein* Er*leben*; Hua XXV 144). Experience, however, has to be accorded its fullest significance.

In *Philosophy of Arithmetic* Husserl had already enunciated a (superficially) empiricist principle according to which 'no concept can be thought without a foundation (*Fundierung*) in a concrete intuition' (PA Hua XII 79). He would continue to maintain this emphasis on the epistemic priority of intuition throughout his life (see e.g. Hua XXIV 46–7). It is not enough to merely work with signs and empty symbols and to refer to things in their absence; rather, all genuine thinking must finally be secured by relating it to

direct immediate intuition of objects in their presence. In LU he writes: 'All evidence of judging (all actual cognising in the pregnant sense) presupposes meanings that are intuitively fulfilled' (LU I §21, I, p. 212 (trans. modified); XIX/1 77). In his work Husserl became clearer about the kinds of intuitive fulfilment demanded by different kinds of concepts. Not all domains can meet the demands for 'apodictic evidence': 'final fulfilment represents an ideal of perfection' (LU VI Intro, II, p. 185; XIX/2 540), and involves complete agreement and synthetic unity between what is intended and what is actually grasped in intuition (called 'perception' in a wider sense). But in all cognition, there is, according to Husserl, an intention that aims at fulfilment. At least as early as LU, Husserl construes knowledge in terms of *fulfilment* of intuition. In fulfilment, 'the object is given "intuitively" in the same way in which the mere meaning means it' (LU VI §28, II, p. 245; XIX/2 625). But what Husserl does, over and against the philosophical tradition (especially against empiricism and positivism) is to extend greatly the range of possible forms of fulfilment. For him, as we shall see, classical empiricism, especially, had a false and overly restricted notion of what is given in experience with its fantastic assumptions concerning atomistic sense data and its dogmatic rejection of the possibility of directly intuiting high-order ideal and categorial objectivities (universals, abstract objects, propositions, and so on, *Ideas* I §§19–20).

Knowing something means directly having it in one's grasp, but Husserl greatly widens the concept of perception to include non-sensuous forms of categorial intuition, where 'states of affairs' are brought directly to intuition. It is part of the project of the Sixth Investigation in particular to argue for a broadened sense of intuition and perception (see LU VI, Intro., II, p. 186; XIX/2 541). For instance, Archimedes' 'eureka' moment represents an experience of evident cognition (in this instance: about the essential nature of flotation) that far exceeds what is given merely to sensuous intuition. The key to Husserl's concept of evidence, then, is grasp its multiple character. One simply has to recognize from the outset that cognition means grasp of the matter itself, but there are, as in Aristotle, many ways in which the matter itself can be given. Once Husserl develops his concept of the relation between intention and fulfilment, *clarification* becomes for him the relating of concepts to fulfilling intuitions,[9] that is, bringing them to 'evidence'. Meanings are to be 'clarified both by going back to the analytically explored essential connections between meaning intentions and meaning fulfilments, and also by making their possible function in cognition intelligible and certain' (LU Intro. §2, I, p. 168; Hua XIX/1 10–11).

In his mature writing (roughly 1905–38), Husserl expands the meaning of phenomenology to be the clarification of the *sense* of all the forms of 'givenness' (*Gegebenheit*), including those that resist objectification and remain in some sense 'other' (such as our experience of others' own conscious states). Husserl frequently speaks of grasping the 'being-sense' (*Seinssinn*) or 'being-validity' (*Seinsgeltung*) of a situation. Such sense clar-

ification involves grasping how the established sense or meaning of an object is in fact a product of certain specific subjective constitutional processes of 'sense bestowal' (*Sinngebung*). Husserl believes that the true understanding of any object, situation or region, means understanding how sense gets conferred or bestowed on that particular object or region, a sense that can be recovered in a kind of 'reflection' (*Besinnung*) or reflective analysis. As he defines it in his *Formal and Transcendental Logic* (1929), clarification is a matter of moving from vaguely grasped ideas to fully informed concepts:

> *Sense-investigation* [*Besinnung*] signifies nothing but the attempt to produce the sense 'itself' ... it is the attempt to convert the 'intentive sense' (as it was called in the *Logical Investigations*), the sense 'vaguely floating before us' in our unclear aiming, into the fulfilled, the clear, sense, and thus to procure for it the evidence of its clear possibility.[10]

4 Husserl's relation to classical empiricism and the 'English' logical tradition

In the mid-nineteenth-century backlash against Hegelian idealism, German philosophers turned not only (and famously) 'back to Kant' (*zurück zu Kant*), but also to the classical empiricist tradition exemplified not only by David Hume and J.S. Mill but also by the certain progressive English mathematical logicians: William Stanley Jevons (1835–82), Sir William Hamilton, George Boole (1815–64) and John Venn (1834–1923). The German logician Christoph Sigwart (1830–1904), for instance, in the *Preface* to the English translation of his *Logic*, acknowledges his debt to 'English logicians from Francis Bacon down to Jevons, Bradley and Venn'.[11] Husserl too was deeply indebted to this logical tradition, although he also criticized it relentlessly. He wanted to purify empiricism of prejudices foreign to it.

For Husserl, empiricism represented 'a radicalism of philosophical practice',[12] setting itself against all idols of superstition, including Scholastic entities such as 'ideas' and 'essences'. In that sense, Husserl says in *Ideas* I, it 'springs from the most praiseworthy motives', but it carries a conceptual and unexamined baggage.[13] Husserl admired Berkeley and Hume for their attempt to do detailed work 'from below' and for producing at least a kind of proto-phenomenological analysis of certain concepts. An instance of such empiricist analysis is Locke's suggestion that the concept of solidity has its origin in the experience of resistance. Locke writes:

> The idea of *solidity* we receive by our touch: and it arises from the resistance which we find in body to the entrance of any other body into

> the place it possesses, till it has left it. There is no idea which we receive more constantly from sensation than solidity.[14]

Similarly, in his *New Theory of Vision*, Berkeley explains how the *sense of distance* is achieved in terms of certain immediately felt experiences of the sensory movements of the eyes that act as cues, which though custom and habit come to be associated with different distances of the object from the perceiver. In similar vein, Husserl was deeply impressed by Hume's analysis of causation in terms of contiguity and succession which he interpreted as a diagnosis of the 'subjective genesis' of 'transcendent objectivities' that had been taken for granted as realities independent of subjectivity (see FTL §100).

At the same time, Husserl was a relentless critic of extreme empiricism 'as absurd a theory of knowledge as extreme scepticism' (LU *Prol.* §26 Appendix, I, p. 59; Hua XVIII 94). Husserl's overall complaint against empiricism was that it misunderstood and incorrectly 'theorized' the very nature of the 'given' on which it depended. Empiricists start from 'unclarified preconceived opinions'.[15] In the *Prolegomena* (1900) Husserl writes:

> Extreme empiricism is as absurd a theory of knowledge as extreme scepticism. It destroys the possibility of the rational justification of mediate knowledge, and so destroys its own possibility as a scientifically proven theory.
>
> (LU *Prol.* §26, I, p. 59; Hua XVIII 94)

Empiricism purports to arrive at general statements yet these are supposedly drawn from 'singular judgements of experience'. It justifies its principles and laws *mediately* through induction,[16] but what principles justify such induction, what principles govern this mediate inference? Empiricists are forced to appeal to 'naïve, uncritical, everyday experience' which it then explains in Humean fashion in terms of psychological regularities. Empiricism thus confuses the *psychological origin* of judgements, 'on account of their supposed "naturalness"',[17] with their epistemic *justification*. This ends up as a form of psychologism.[18] The radical empiricist assumes that the only access to things themselves comes through *immediate* sensory experience. But, for Husserl, natural things do not constitute the whole set of kinds of things, and thus empiricism at best only reveals things of nature. Already in LU, Husserl argues that empiricism unnecessarily and quite arbitrarily restricts the range of possible verification or confirmation of judgements. In the Second Investigation in particular, he attacks the empiricist *psychological* accounts of abstraction and points to their defects in terms of a conceptual analysis of what is required to intuit universals. In general, empiricism has no sense of the normative nature of cognition.

To overcome the empiricist misunderstanding of logic and mathematics in particular, Husserl turned to the older logical tradition of Kant, Bolzano

and its contemporary exponent Lotze. Kant treated logic as an independent science (LU *Prol.* §13) made up of purely necessary a priori laws (LU *Prol.* §19), but he believed that the logicians who supposedly followed Kant had been seduced into psychologism. Alexander Bain, the Scottish follower of Mill, for instance, had fallen prey to psychologism. Indeed Kant's and Herbart's supposed 'pure' logics were not without confusion (LU *Prol.* §20). It was Husserl's chance discovery of Bolzano's *Wissenschaftslehre* in a second-hand bookshop that set him on a mission to correct what he regarded as deviant tendencies in contemporary German logic. Inspired by Bolzano, and by Hermann Lotze's *Logic*, Husserl embarked on a mission to clarify the nature of the given. In particular he needed to emphasize that the ideal (e.g. the species Red as opposed to the particular instance of *red*) is as much a part of the given of our experience as the sensuous.

The virtue of phenomenology, by contrast, was that it recognized the multiplicity of evident forms of givenness. Indeed Husserl criticized both Descartes and the rationalists as well as the empiricists for their dogmatic restriction in advance (and for theoretical reasons) of the legitimate intuitive forms. In his 'Philosophy as a Rigorous Science' article of 1910/1911 Husserl would write:

> To study some kind of objectivity (*Gegenständlichkeit*) or other in accordance with its universal essence ... means to investigate its modes of givenness and to exhaust its eidetic content in the appurtenant processes of 'clarification'.[19]

Analysis, then, for Husserl involves explicating an objectivity with reference to the mode of givenness by which its objective 'content' is given. Husserl came to recognize more and more that objectivities are essentially and a priori correlated to certain attitudes that disclose them. For instance, art objects appear as such under the aesthetic attitude; humans are given as persons in the personalistic attitude, and so on. The relating of objective forms to distinct attitudes became an intrinsic part of Husserl's mature concept of phenomenological analysis under the designation 'noetic-noematic' analysis that Husserl adopted from around 1913 on.

5 Psychological and conceptual clarification in the *Philosophy of Arithmetic*

I would like now to explore the manner in which subjective acts of constitution are already at work in Husserl's earliest attempts at analysis in his *Philosophy of Arithmetic*. Here Husserl employed the basic procedures of Brentanian descriptive psychology to vindicate Weierstrass's concept of number. Later in his *Draft Preface* (1913) to the revised edition of LU, Husserl describes his first work as aiming at 'elucidating the cognitive accomplishment (*Erkenntnisleistung*) of arithmetic and of purely analytical

mathematics in general' (*Draft Preface*, p. 33; Fink 125/6). A particularly subtle piece of 'descriptive psychological' analysis in PA is Husserl's elucidation of the role played by time in the intuition of number. A more careful examination of this analysis is helpful for grasping how Husserl distinguishes between psychological and logical analysis.

As is well known, Kant claimed that number is based on the intuition of succession and hence is related to time as the form of inner sense. Husserl offers a richer analysis of number that tries to isolate the component 'acts' that are involved in generating the concept. The analysis of number offered in PA turns on one particular form of *synthesis* that he calls 'collective combination' (*kollektive Verbindung*). He holds collective combination to be a necessary component of the intuition of numbers. But this combination has been misconstrued by other thinkers. It is not a form of temporal (Kant) or spatial (Lange) synthesis. When I am counting a group of objects, their order and position is irrelevant (PA, pp. 36–7). Lange on the other hand thought spatial synthesis was the 'archetype of all synthesis' (PA, p. 37).

Husserl denies that the concept of number derived from our spatial intuitions:

> Let us represent to ourselves by means of an example how we collectively hold together or count spatial objects. Do we, in doing this, attend constantly and necessarily to the relationships of order and position? Certainly not ... Two apples remain two apples, whether we set them closer together or further apart, whether we shift them to the right or to the left, up or down. Number has exactly nothing whatsoever to do with spatial location.
>
> (PA, pp. 37–8; Hua XII 36–7)

Similarly, against Kant, Husserl maintains that time does not form part of the *essence* of number. He reasons that

> To perceive temporally successive contents does not yet mean to perceive contents as temporally successive ... But it is important to consider ... that, even where we notice a temporal sequence of contents, in no way are determinate multiplicities already marked out. That is only brought about by certain psychical acts of collecting. To overlook them means to leave out of account precisely that which forms the true and only source [*Quelle*] of the concept of multiplicity as well as of the concept of number.
>
> (PA, pp. 30–1; Hua XII 29–30)

In other words, the act of grasping (intuiting) a temporal succession involves an act of synthesis or collecting, the bringing together of different intuitions into a unified collection.

In his own analysis, Husserl discusses several examples that involve isolating the particular psychological acts involved in noticing temporal succession *as* succession:

> The clock sounds off with its uniform tick-tock. I hear the particular ticks, but it need not occur to me to attend to their temporal sequence. But even if I do attend to it, that still does not involve singling out some number of ticks, and uniting them into a *totality* by an inclusive noticing. Or take another example: Our eyes roam about in various directions, fixing now upon this, now upon that object, and evoking manifold representations succeeding one another in a corresponding order. But a special interest is necessary if the temporal sequence involved here is to be separately and specifically noticed. And in order to maintain a grasp on some or all of the noticed objects themselves, to relate them to each other, and to gather them into a totality, here again are required special interests and special acts of noticing directed upon just those contents picked out and no others. That is to say, even if the temporal sequence in which objects are colligated were always attended to, it would still remain incapable of grounding by itself alone the unity of the collective whole. And since we cannot even concede that temporal succession enters into the representation of each concrete totality merely as an invariable constituent always attended to, it is clear that even less can it in any way enter into the corresponding *general concept* (multiplicity, number).
>
> (PA, pp. 31–2; Hua XII 30–1)

In other words, the recognition of specific psychological aspects of an experience call for 'special interests and special acts of noticing' and not all such psychological activities are relevant to *the concept* being considered. Simply seeing time as involved in all acts of collecting in one sense does not mean that time plays a role in the articulation of the concept in the specific sense required.

In his analysis of the kind of operation which yields number, therefore, Husserl specifies certain 'psychological' features of the act of combining, and in this process he rejects as irrelevant spatial or temporal ordering. Similarly, counting objects involves treating them as unities and hence abstracting from their other properties ('cleansing them in the psychological washtub' as Frege disparagingly called it in his review of Husserl's PA).[20] Husserl himself interprets this kind of abstraction as a kind of disregard or lack of interest in certain features of the experience:

> To disregard or abstract from something means merely to give it no special notice. The satisfaction of the requirement wholly to abstract from the peculiarities of the contents thus absolutely does not have the effect of making those contents, and therewith their combination, dis-

> appear from our consciousness. The grasp of the contents, and the collection of them, is of course the precondition of the abstraction. But in that abstraction the isolating interest is not directed upon the contents, but rather exclusively upon their linkage in thought –– XII 79)

He continues:

> The abstraction to be carried out can now be described in the following manner: Determinate individual contents of some sort are given in collective combination. In abstractively passing over, then, to the general concept, we do not attend to them as contents determined thus and so. Rather, the main interest is concentrated upon their collective combination, whereas they themselves are considered and attended to only as some contents in general, each one as a *certain something*, a *certain one.*
>
> (PA p. 83; Hua XII 79)

Husserl thinks of the concept of number as arising from our specific disregard for the features of a set of objects and our passing over to the formal features relating the elements of this set to each other. In other words, we concentrate on the *binding features of the experiential act* rather than on the 'content-relations' of the objects involved. This is a very interesting form of analysis. It pays attention to the subjective processes involved in the constitution of objectivities, but not all subjective processes involved are deemed to be conceptually relevant, part of the 'content' of the concept.

Furthermore, in PA, Husserl distinguishes clearly between the *psychological* aspect of a phenomenon and its 'logical signification'. He considers the situation of reviewing a sequence of four objects (A, B, C, D) where we are likely to have only D in actual presence and the first three are retained in some kind of representation. This of course can be reversed and we can run through the sequence from D to A:

> The phenomenon is the foundation of the signification, but is not identical with it. If a totality of objects, A, B, C, D, is in our representation, then, in light of the sequential process through which the total representation originates, perhaps finally only D will be given as a sense representation, the remaining contents being then given merely as phantasy representations which are modified temporally and also in other aspects of their content. If, conversely, we pass from D to A, then the phenomenon is obviously a different one.
>
> (PA, p. 32; Hua XII 31)

Husserl argues that the psychological content of this sequence must be sharply differentiated from its logical meaning which simply is the collection of objects {A, B, C, D} ignoring the order of encountering them:

> But the logical signification sets all such distinctions aside. The modified contents serve as signs, as deputies, for the unmodified ones which were there. In forming the representation of the totality we do not attend to the fact that changes in the contents occur as the colligation progresses. Our aim is to actually maintain them in our grasp and to unite them. Consequently the *logical content* of that representation is not, perhaps, D, just-passed C, earlier-passed B, up to A, which is the most strongly modified. Rather, it is nothing other than (A, B, C, D). The representation takes in every single one of the contents without regard to the temporal differences and the temporal order grounded in those differences.
>
> (PA, pp. 32–3; Hua XII 31–2)

Husserl concludes on the basis of this analysis that time only plays the role of a psychological *precondition* for our concepts of number and does not give us the *logical* content of the concept of number. But, *nota bene*, what he refers to as the logical content of the concept still involves certain subjective achievements, and these will be the specific focus of what he later calls 'phenomenological' analysis.

These early examples of analysis in PA demonstrate that Husserl is adept in distinguishing certain psychological features and processes present in our experience from certain logical elements that must be there. Certain specific psychological activities (those involving temporal and spatial ordering) play no role in generating the *concept* of number, but the activity of collective combination and the isolation of items (regardless of their relational properties) do play an essential role. What Husserl is doing is making a distinction between merely attendant psychological features and those that play a necessary role in the formation of the concept. He is beginning to distinguish two senses of conscious activity, one de facto and psychological, the other eidetic and phenomenological (although not yet named expressly as such).

Husserl's form of analysis needs to distinguish relevant from irrelevant cognitive acts. As he writes in his discussion of a book by the neo-Kantian Hans Cornelius:

> A perilous reef for descriptive analysis is our natural tendency, in the description of acts which were actually given, to mix in various others that first occur in reflection after-the-fact upon the earlier psychical situation.
>
> ('Critical Discussion of Hans Cornelius', EW, p. 408; Hua XXII 372)

Husserl accuses Cornelius of conflating *noticing* with *differentiating*, whereas he thinks differentiating involves a relating whereas noticing does not.

Furthermore, no amount of attending or noticing turns the perception of an individual into the apprehension of a universal (EW 413; Hua XXII375–6).

Great care is needed in descriptive analysis.

In PA Husserl argues against the property account of numbers that maintains that number concepts cannot simply be read off groups of entities. For him, on the contrary, numbers are arrived at in *reflection*:

> It is impossible to explain the origination of the number concepts in the same way as, say, that of the concepts *color*, *shape*, etc., which, as positive Moments in the primary content, are isolated through mere analysis thereof ... The enumerated contents certainly can be physical as well as psychical, but the number concepts and the *one* belong exclusively to the domain of reflexion. And accordingly it is also absurd from the outset when *Locke* (like so many after him) considers the represented numbers to be 'primary qualities', as perfect copies of original qualities, which have their subsistence in the things themselves and independently of our mind.
>
> (PA p. 89; Hua XII 85)[21]

Husserl again draws attention to the complex and intricate role of *psychic acts* in the formation of the concepts of 'more' and 'less'. To think of one group of objects as containing *more* than another group, one has simultaneously to think of both groups, enumerate their contents and then grasp the newly collected group as larger than the first collection:

> Imagine a given group [*Menge*], perhaps of balls. Add, now, one or several balls to that group. Then we say that the new group has *more* balls by those added. But if balls are taken away, then we say they are *less* by those taken away. In this case we are dealing with physical objects and with a physical operation upon them. But also in cases where we collectively *think* contents together – and not just external contents – such an adding to and taking away is present. What is meant thereby certainly can only be shown and not defined. It is an elemental fact, to be described in no other way than by reference to the phenomena, that while certain contents are thought 'together' by us, still other contents can then be added and grasped together with the ones already present. The original act is expanded by the taking in of new contents.
>
> (PA, pp. 95–6; Hua XII 91)

Husserl's point is that these groups have to be brought into a single act of consciousness:

> As any relation requires that the terms be together in a single act of consciousness, so also with our relations of more and of less. It therefore presupposes for its realization that the original and the expanded totality be present to us simultaneously and in *one* act. And even that does not yet suffice, for the latter totality must even appear as the 'sum' of two totalities, one of which is recognized as identical with the original totality, while the other represents the totality of the newly added contents ... Consequently it is a fact that we have the capability of representing several totalities together as unified into *one* totality, without thereby their separate unifications being lost. We represent totalities whose elements are in turn totalities. In fact, even totalities of totalities of totalities are thinkable, etc.
>
> (PA, pp. 96–7; XII 91–2)

In order to be able to collect groups together, compare them, and think them together in one act which at the same time does not simply merge the two groups quickly catapults us into the domain of symbolic thought. Husserl's conclusion is that many concepts require mental acts that are directed on other mental acts. There are '*psychical acts of higher order*, i.e. psychical acts which are directed in turn upon psychical acts and bear upon primary contents only through mediation of these latter'.

Much of the 'psychological analyses' of PA, then, consist in identifying the elaborate network of mental acts required to carry out even simple arithmetical procedures. Husserl is clear, however, that the psychical acts must be distinguished from the logical outcomes or results of these operations. The logical contents have relations of consequence with one another that hold independently of the constituting activities of subjectivity producing them. Given the relatively clear manner in which Husserl is able to distinguish the psychological from the logical in PA, it is quite surprising that he supposedly fell into the psychologistic trap for which Frege so roundly chastised him in his famous review of Husserl's PA.[22] Nevertheless, Husserl, partially in the light of Frege's criticisms, in LU offered a most extensive analysis of the 'countersense' of psychologism.

6 The phenomenological analysis of logic and epistemology

After PA, Husserl shifted his attention to the foundations of logic and epistemology. In LU, he is particularly concerned with clarifying the *concept* of logic, which means bringing the *essence* of logic to evident intuition. While Husserl was familiar with and admired the technical achievements of modern mathematical logic (Boole, Schröder *et al.*), he saw it as philosophically naïve and unclarified (Hua XXII 200); the logic of his day was an inconsistent pot-pourri of different elements:

> One need only compare the works of Hamilton, Bolzano, Mill and Beneke. And how the differences have grown since then. Put together Erdmann and Drobisch, Wundt and Bergmann, Schuppe and Brentano, Sigwart and Ueberweg, and ask whether one then has a single science, or only a single name.
>
> (LU *Prol.* §13, I, p. 31; XVIII 48)

His aim, then, was to sort out what logic as such meant, what belonged to it as such, to give it a clear determination as a science:

> Logic accordingly lacks its prime foundation; it lacks a scientifically strict, phenomenologically clarified distinction of primitive meaning-elements and structures, and a knowledge of relevant laws of essence.
>
> (LU IV §14 n. 3, II, p. 76; Hua XIX/1 350)

To overcome this profusion of different theories and methods, and to set logic on the path of secure science, Husserl proposes reviving 'pure logic', originally envisaged but propounded in an inadequate way by Kant. This involved a return to the 'a priori', to Hume's 'relations of ideas' and to Leibniz (who also stimulated nineteenth-century British mathematical logic). In fact, Husserl credits *Leibniz* with moving him away from psychologism around 1895–6 (*Draft Preface*, p. 36; Fink, 128).

In LU and elsewhere Husserl defended a very clear conception of logic as an a priori formal science that dealt in 'tautologies'.

> Formal logic in the broadest sense (*mathesis universalis*) is the total range of the purely categorial, i.e. of all laws and theories that stand free of the sensuous ... It includes not a single existential proposition about the real world, no single assertion about facts.
>
> (EW, p. 211; Hua XXII 166)

Husserl thought of purely formal logic as coextensive with mathematics, it dealt with pure categorial forms (with nothing material admixed). In this regard, Husserl recognizes that Lotze had already identified mathematics with logic (LU *Prol.* §45):

> Lotze taught that mathematics must be regarded as an 'independently developed branch of general logic' ... mathematics 'has its home-ground in the general field of logic.
>
> (*Logik* 2nd edn §18, 34 and §112, 138) (LU *Prol.* §45, I, p. 108; Hua XVIII 171)

Of course, as Husserl knew well, this had also been Paul Natorp's position, and the two had been in correspondence on this issue. So, in this respect, Husserl is not advancing significantly beyond some neo-Kantians in

his analysis of logical concepts, although he does provide far greater detail than they did.

However, Husserl never believed pure logic was enough. It needed to be completed by 'philosophical logic', or what he would later call (again in Kantian mode) 'transcendental logic', the science that linked logic to its object:

> The critique of knowledge illumines the objective sense of the 'empty' forms. It constitutes the specifically philosophical task. (EW 215; XXII 170)

The point is that knowledge consists of a relation between knower and known. Already in the *Prolegomena* to LU Husserl acknowledges that it is an obvious truism to insist that knowledge consists of a relation to a knower (see also *Erste Philosophie* II, Hua VIII 38). The point is to have the right way of examining the part that is contributed by the knowing subject. Accordingly, in the *Prolegomena*, he distinguishes between subjective conditions which are 'real conditions (*reale Bedingungen*) rooted in the individual judging subject, or in the various species of judging beings' from 'ideal conditions that lie in the form of subjectivity as such', which he prefers to call 'noetic conditions' (LU *Prol.* §32, I, pp. 75–76; Hua XVIII 119). We might want to call these 'real' conditions psychological conditions and refer to the *noetic* conditions as those necessary for the formation of the concept. These noetic conditions are what he will call 'phenomenological' conditions in the second volume of LU and thereafter. Husserl is on his way to articulate the noematic–noetic correlation central to the mature conception of phenomenological analysis. While one may abstractly and one-sidedly study one or other side of this correlation, the true analysis of knowing requires taking account of the a priori correlation itself. One has to stress, however, that Husserl himself was quite unsure of his emerging method as he wrote LU and that several competing conceptions are at work in that sprawling text.

7 Phenomenology as noetic–noematic analysis

In LU Husserl emphasizes the need to relate the frozen ideal 'senses' (*Sinne*) back to their origins in acts of cognizing. Later on, in his 1910–11 essay 'Philosophy as a Rigorous Science', for instance, he speaks of 'epistemological analysis' and regards its task as the 'investigation of correlations'.[23] The peculiarly phenomenological kind of correlation analysis is driven by the recognition that the dimension of *knowing subjectivity* (*erkennende Subjektivität*), excluded for reasons of method by the positive sciences, must be restored in any complete account of knowledge. The interconnecting web of human cognitive performances (*Bewusstseinszusammenhang*), the whole architecture of cognizing subjectivity, depends on the essential *correlation* between a knowing subjectivity and an object known. As he later puts it in the *Crisis*:

> The first breakthrough of this universal a priori of correlation between experienced object and manners of givenness (which occurred during my work on the *Logical Investigations* around 1898) affected me so deeply that my whole subsequent life-work has been dominated by the task of systematically elaborating on this a priori of correlation.
>
> (*Crisis* §48, p. 166n; Hua VI 169n)

From LU onwards, Husserl's mission was to do justice to what he terms the essential 'two-sidedness' of knowledge. As he writes in 1910/1911:

> The field of knowledge is infinite in two directions: on the one hand, the totality of objects (*der Inbegriff der Gegenstände*) that we call nature; on the other, the totality of objects that we call consciousness, *cogitatio*, phenomenological given.
>
> (Hua XIII 172, my translation)

In his *Phenomenological Psychology* lectures of 1925, Husserl looks back on the task and significance of the *Logical Investigations* which he characterizes as follows:

> In 1900–01 my *Logical Investigations* appeared as the result of ten-year-long efforts for a clarification (*Klärung*) of the pure idea of logic by a return to the bestowing of sense (*Sinngebung*) or the performance of cognition (*Erkenntnisleistung*) which occurs in the nexus of lived experiences of logical thinking. More accurately speaking, the single investigations of the second volume [i.e. the Six Investigations themselves] involved a turning of intuition back towards the logical lived experiences which take place in us whenever we think but which we do not see just then, which we do not have in our noticing view whenever we carry out thought activity in a naturally original manner. The thinker knows nothing of his lived experiences of thinking (*Denkerlebnissen*) but only of the thoughts (*Gedanken*) which his thinking engenders continuously.[24]

The point is, Husserl says, to bring this 'obscurely occurring life of thinking' into view by reflection 'and to fix it in faithful descriptive concepts (*in getreuen deskriptiven Begriffen zu fixieren*)' (ibid.). It is clear that fixing concepts in intuition is what Husserl meant by phenomenological analysis.

A large part of Husserl's efforts at conceptual clarification involve the status of ideal objectivities of various kinds. The Second Logical Investigation is given over to explicating how universals and ideals are intuited directly. Based on his robust defence of direct intuition of universals, Husserl was seen by his contemporaries as a Platonist. This Platonism consisted in asserting that ideal entities (ideal *singular* objects such as *the* meaning of a word, e.g. the word 'lion' in the English language, or the number 2; uni-

versals and species, as well as complex combinations known as propositions and states of affairs, are *objectivities* not given through the senses. They do not have 'actual existence' in some absurd Platonic realm; rather, they have something like what the neo-Kantians termed 'validity' (*Geltung*), a concept he found in Lotze. In an early essay 'Intentional Objects' (c. 1898), Husserl writes:

> Truths, propositions and concepts are also objects. Also in their case we speak of existence (*Existenz*) in the full and authentic sense. But they are nothing which would be encountered in the domain of the actually real.
>
> (Husserl, EW, p. 366; XXII 326)

Husserl struggles with various ways to express the kind of existence (*Existenz*) attributable to mathematical objects in distinction from the actual 'existence' (*Dasein*) of more mundane temporally located objects. They are objects because they are unities of meaning, capable of reidentification, and bearers of predicates, but they do not have temporal duration. In fact, Husserl never changes his view of the ideal self-identity of mathematical objects. In his Introduction to *Logic and Theory of Knowledge* lectures of 1906/7, for instance, he claims:

> Numbers are not objects in nature (*Naturobjekte*). The number series is a world of genuine objectivities – *ideal* not *real* objectivities. The number 2 is no thing (*Ding*), no natural process, it is not located in space or time. It is certainly not an object of possible perception or of possible 'experience'. Two apples appear and disappear, have local and temporal situation, but when the apples are eaten up, the number 2 is not eaten up, the number series has not suddenly developed a lacuna, as if we now had to count 1, 3, 4 . . . [25]

Husserl is seeking to clarify the *sense* of number, i.e. what number essentially is:

> It belongs to the sense of the term 'cardinal number' that each number may be augmented by a unity. To say that a cardinal number, a quantity, cannot be augmented, means one does not know what one is talking about, it also means to enter into a conflict with the sense, the identical sense of the expression 'cardinal number'.
>
> (Hua XXIV 49, my translation)

Husserl concludes:

> The world of mathematics and of pure logic is a world of ideal objects, a world of 'concepts', as one has become used to saying. Every truth

> here is nothing other than an analysis of essence or concept, what is necessitated by the concepts and is indissociable from their content, from their sense, becomes known and established. One also designates this distinction as that between a priori and a posteriori. Pure mathematics is an a priori discipline, every natural science is an a posteriori discipline.
>
> (XXIV 50, my translation)

For Husserl, there are different kinds of ideal objects that need to be disambiguated. Not every ideal object is an essence or a species. An essence is something that is capable of instantiation. If an ideal object has possible instances it is an essence or a species. Essences and species are named by a peculiar type of singular term. Examples of such singular terms are 'red' and 'the tone C'.

Husserl's careful distinction between objects that have (repeatably identical) instantiations and objects (such as hammers) which can have different exemplars is repeated in *The Origin of Geometry* fragment (*Crisis*, pp. 353–78; VI 365–86). Here *ideality* is construed in terms of its availability for everyone in repeated access as the identical same. Of course, an ideal entity (e.g. a geometrical proposition) needs to be *discovered* or *disclosed* in act of primal foundation (*Urstiftung*), but it belongs to its nature as ideal to have an intrinsic essential 'repeatability' (*Wiederholbarkeit,* Hua VI 368) as the 'identically same' (*Crisis*, p. 357; Hua VI 368). Whereas a tool such as a hammer can have many repeatable 'exemplars', an ideal entity like the Pythagorean theorem is the *same identical* thing in each of its repetitions. This is the essential distinction between the mode of being (*Seinsart*) of the ideal (mathematical, semantic, scientific theoretical, etc.) as opposed to the mode of being of cultural constructions (hammers) and natural entities. For an ideal entity of the mathematical kind to be accessed in memory is exactly the same as for it now to be intuitively perceived. Its repeatability is always 'coincidence of identity' (*Identitätsdeckung*, *Crisis*, p. 360; VI 370). Phenomenology, then, articulates the different manners of givenness of different kinds of entity; and givenness is always *givenness-to.* Phenomenological description is a kind of reflective analysis that highlights this essential relatedness between subject and object.

8 Phenomenological eidetic description and language

Finally, let us address the complex issue of the relation of concept analysis to the analysis of language in Husserl. As we have seen, as specified in LU, phenomenology is a metaphysically neutral, presuppositionless clarification that aims to exhibit, with 'clarity and distinctness' conceptual contents and their connections with other concepts. This clarification of concepts is achieved, not by linguistic discussions, but by tracing back the *concepts* to their 'origin' in intuition. It is not a matter of clarifying the ordinary lan-

guage use of concepts as language is of its nature intrinsically vague. It is only at the end of our investigation that we need to 'fix' language in a rigorous way. Husserl's conception of analysis does not regard the role of language as central; linguistic discussions (*sprachliche Erörterungen*, Hua XIX/1 6) are, at best, propaedeutic. Their function is to clarify words against ambiguities, equivocations and confusions. Of course, the grammatical form somehow covers their logical form and the two must be carefully distinguished:

> The objects which pure logic seeks to examine are, in the first instance, therefore, given to it in grammatical clothing (*im grammatischen Gewande*).
>
> (LU Intro. §2, I 167; Hua XIX/1 8)

But linguistic analysis is no substitute for the analysis of the a priori forms of consciousness (LU I §21). Getting clear about the meanings of words is not the same as mastering the concepts and gaining insight into their essences. Knowing how to use the word 'triangle' successfully is not at all the same as grasping the essence 'triangle'.

> What is logical is first given us in imperfect shape: the concept (*der Begriff*) as a more or less wavering word-meaning (*Wortbedeutung*), the law, built out of concepts, as a more or less wavering assertion (*Behauptung*).
>
> (LU Intro. §2, I, p. 167; XIX/1 9)

Husserl does not want to be misled by language and especially not by ordinary language. Rather he wants clarification of the kinds of objects and acts involved in logic from the epistemic point of view. For instance, he wants to make use of a wider notion of perception than is usual in claiming that universals, etc., can be perceived. He wants discussions of a more 'general kind' (Hua XIX/1 6) relating to the wider sphere of an objective theory of knowledge and what internally relates to that, namely, 'the pure descriptive phenomenology of the thinking and knowing experiences' (Hua XIX/1 6, first edition). He notes that in phenomenology generally

> all concepts or terms must remain in flux in a certain way, always at the point of being differentiated in accord with the progress of the analysis of consciousness (*Bewusstseinsanalyse*) and the cognition of new phenomenological strata within what is at first seen in undifferentiated unity.
>
> (*Ideas* I §84, p. 201; Hua III/1 170)

When Husserl offers an analysis of the perception of physical objects in space for instance, he emphasizes that it belongs to the essence of such

objects to always reveal themselves in profiles or 'adumbrations' (*Abschattungen*). A table can only be *seen* from one point of view, one position, and so on. In fact, every material thing unveils itself in endless spatial profiles. No act of perceiving a physical object can present all sides at once, or all perspectives. Even God can only grasp a physical thing in profiles (*Ideas* I §149, p. 362; Hua III/1 315). There is therefore no 'God's eye' view possible because such an aperspectival view would contradict the essence of the object's self-revealing. Husserl frequently announces this insight as having the status of an a priori eidetic law: 'even the most intuitively vivid and rich presentation of a real thing must be in principle one-sided and incomplete' (LU IV §3, II, p. 52; Hua XIX/1 307). Not even God can alter this eidetic truth, Husserl frequently attests (see Hua XVI 65). According to Husserl, moreover, it is neither an accident nor purely a feature of human constitution that a spatial thing can only appear in profiles (*Ideas* I §42), it belongs to the *essence* of the spatial object itself.

Husserl's mature writings are replete with this kind of 'eidetic' analysis. Such analysis is always structured in terms of both a noetic and a noematic dimension. In other words, Husserl's mature conception of phenomenological analysis always sees the objective as constituted through subjective achievement. Moreover, phenomenological analysis must be sharply distinguished from psychological analysis. Husserl wants to find a new level of description, one whereby objects are always described with attention to the subjective acts and overall attitudes in which they come to manifestation. This *Bewusstseinsanalyse* is one of the crowning achievements of Husserl's phenomenology.

Notes

1 E. Husserl, *Logische Untersuchungen*, 2 Bande (Halle: Max Niemeyer, 1900–1; 2nd revised edn 1913). The critical edition is published in the Husserliana series in two volumes: Volume XVIII, *Logische Untersuchungen*. Erster Band: *Prolegomena zur reinen Logik*, hrsg. Elmar Holenstein (The Hague: Nijhoff, 1975), and Volume XIX, *Logische Untersuchungen*. Zweiter Band: *Untersuchungen zur Phänomenologie und Theorie der Erkenntnis*, in zwei Bänden, hrsg. Ursula Panzer (Dordrecht: Kluwer, 1984). The English translation is Edmund Husserl, *Logical Investigations*, 2 vols, trans. J.N. Findlay, revised by Dermot Moran (London/New York: Routledge, 2001) which translates the 2nd edn. Hereafter, the *Investigations* will be cited as 'LU' followed by the relevant Investigation number, paragraph number, volume number (in bold) and page number in the English translation, and volume number and page number of the Husserliana (hereafter abbreviated to 'Hua') edition of the German text. The current quotation therefore is LU IV, II, p. 76; Hua XIX/1 350.

2 In the Sixth Logical Investigation Husserl rejects the view that genuine problems can be solved by merely reviewing historical 'philosophemes' (his term for typical philosophical routines, see LU VI Intro., XIX/2 543) and much later he laments that the history of philosophy has been substituted for genuine philosophy, see E. Husserl, *The Crisis of European Sciences and Transcendental Phenomenology. An*

Introduction to Phenomenological Philosophy, trans. David Carr (Evanston: Northwestern University Press, 1970), §56, p. 196; Hua VI 199. Hereafter '*Crisis*'.

3 For more on this topic see Dermot Moran, *Edmund Husserl. Founder of Phenomenology* (Cambridge: Polity, 2005).

4 E. Husserl, *Philosophie der Arithmetik*, edited Lothar Eley, Hua XII (Dordrecht: Kluwer, 1970), trans. Dallas Willard, *Philosophy of Arithmetic* (Dordrecht: Kluwer, 2003). Hereafter 'PA' followed by pagination of English translation and Husserliana volume and page number.

5 E. Husserl, *Introduction to the Logical Investigations. Draft of a Preface to the Logical Investigations,* ed. E. Fink, trans. P.J. Bossert and C.H. Peters (The Hague: Martinus Nijhoff, 1975), p. 29; E. Husserl, 'Entwurf einer "Vorrede" zu den *Logischen Untersuchungen*' (1913), hrsg. Eugen Fink, *Tijdschrift voor Filosofie*, Vol. 1, No. 1 (February 1939), pp. 107–33 and No. 2 (May 1939), pp. 319–39. The reference here is to Vol. 1, p. 122. Hereafter '*Draft Preface*' followed by pagination of English translation and German original (designated as 'Fink').

6 In *Ideas pertaining to a Pure Phenomenology and to a Phenomenological Philosophy, First Book*, trans. F. Kersten (Dordrecht: Kluwer, 1983),§84, p. 202; Hua III/1 170, for instance, Husserl states that, in certain areas, 'clarity does not exclude a certain halo of indeterminateness'. Hereafter '*Ideas* I'.

7 E. Husserl, *Early Writings in the Philosophy of Logic and Mathematics,* trans. Dallas Willard, Collected Works V (Dordrecht: Kluwer, 1994), p. 213; Husserliana XXII 169. Hereafter 'EW' followed by the page number and the volume and page number of the Husserliana edition.

8 Husserl often invokes Descartes' twin criteria of truth, namely, 'clarity and distinctness' (Hua XIX/1 10) in our concepts.

9 One cannot get by with insisting on definitions in the absence of intuitions, Husserl maintains in *Ideas* I (III/1 171).

10 E. Husserl, *Formale und transzendentale Logik. Versuch einer Kritik der logischen Vernunft. Mit ergänzenden Texten*, hrsg. Paul Janssen, Hua XVII (The Hague: Martinus Nijhoff, 1974), p. 13; *Formal and Transcendental Logic,* trans. D. Cairns (The Hague: Martinus Nijhoff, 1969), p. 9. Hereafter 'FTL' followed by page number of the English translation and volume number and page of the German Husserliana edition.

11 Christoph Sigwart, *Logic*, 2 vols, trans. Helen Dendy (London/New York: Swan Sonnenschein/Macmillan, 1895), Vol. 1, p. ix.

12 E. Husserl, *Ideas* I, §19, p. 35; Hua III/I 35.

13 *Ideas* I, §19, p. 35; Hua III/1 34.

14 J. Locke, *An Essay Concerning Human Understanding*, ed. M. Cranston (London and New York: Collier Books, 1965), Book Two, ch. IV, p. 73.

15 *Ideas* I, §20, p. 38; Hua III/I 38.

16 LU, *Prol.* §26, I, p. 60; Hua XVIII A85.

17 LU, *Prol.* §26, I, p. 60; Hua XVIII A85.

18 Incidentally, Husserl in part absolves his hero Hume of such an absurd radical empiricism; he sees Hume rather as a 'moderate empiricist' who retained logic and mathematics and gave them a priori justification, but who still thinks mediate inferences have only a *psychological* explanation and no rational justification (LU *Prol.* §26, I, p. 60; Hua XVIII A86).

19 E. Husserl, 'Philosophy as a Rigorous Science,' trans. M. Brainard, *New Yearbook for Phenomenology and Phenomenological Philosophy* II (2002), pp. 249–95; originally *Logos. Internationale Zeitschrift für Philosophie und Kultur* 1 (1910–1911), pp. 289–341 (reprinted in Husserliana, vol. XXV). Hereafter 'PRS' with Brainard pagination, followed by German pagination of original. The reference here is to Brainard, p. 260; *Logos*, p. 301.

20 Gottlob Frege, 'Rezension von: E.G. Husserl, *Philosophie der Arithmetik* I', *Zeitschrift für Philosophie und philosophische Kritik* (1894), pp. 313–32, reprinted in Frege, *Kleine Schriften* ed. I. Angelelli (Hildesheim: Georg Olms, 1967), pp. 179–92, trans. E.W. Kluge, 'Review of Dr E. Husserl's *Philosophy of Arithmetic*,' in *Husserl. Expositions and Appraisals*, ed. F. Elliston and P. McCormick (Notre Dame: University of Notre Dame Press, 1977), pp. 314–24. The phrase in question appears on p. 315 of the English translation.

21 It is important to recognize that Husserl is not offering an account of number whereby it is a property of a group. Herman Philipse is therefore incorrect when he attributes to Husserl a 'Lockean theory' of number, see H. Philipse, 'Edmund Husserl and the Theory of Classical Foundationalism' in Richard Feist (ed.) *Husserl and the Sciences. Selected Perspectives* (Ottawa: University of Ottawa Press, 2004), p. 31.

22 G. Frege, 'Review of Dr E. Husserl's *Philosophy of Arithmetic*', in *Husserl. Expositions and Appraisals.*

23 E. Husserl, 'Philosophy as a Rigorous Science', trans. M. Brainard, *New Yearbook for Phenomenology and Phenomenological Philosophy* II (2002), p. 260.

24 E. Husserl, *Phänomenologische Psychologie. Vorlesungen Sommersemester 1925*. Hrsg. W. Biemel, Hua IX (The Hague: Martinus Nijhoff, 1968), §3, pp. 20–1; *Phenomenological Psychology. Lectures, Summer Semester 1925*, trans. J. Scanlon (The Hague: Martinus Nijhoff, 1977), p. 14.

25 E. Husserl, XXIV: *Einleitung in die Logik und Erkenntnistheorie. Vorlesungen 1906/07*, hrsg. Ullrich Melle, Hua XXIV (Dordrecht: Kluwer, 1985), p. 48, my translation.