Founding economic concepts

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Abstract

Conceptual precision is often regarded as a scholarly virtue by economists. This paper explores the scope and promise of definitionalism in economics by focusing on concepts that act as founding concepts in economic debate. The semantic properties of these founding concepts are investigated on the basis of a revised Fregean account of meaning, which reinterprets Fregean sense as a social object that determines meaning reflexively in an ethnographically grounded and non-determinist fashion. The resulting 'finitist' account of economic concepts casts doubt on the definitionalist project. What matters for founding concepts is less that they are well-defined, but that differences over their meaning do not prompt controversy.

Keywords: semantic externalism, economic concepts, ambiguity, meaning finitism, Frege

JEL Codes: B41, B52, Z13

1. Introduction: The Traditional Doctrine§

Conceptual precision constitutes a scholarly virtue in economics. Part and parcel of a more general belief in the benign effects of formalising scientific dicourse, conceptual precision is commonly regarded as one of the key characteristics of such discourse. Gottlob Frege's distinction between sense and reference of a concept is a case in point. Frege, arguably the founder of modern logic, sought purging scientific writing of the many ambiguities and inconsistencies that we can find in ordinary language. His philosophy of language (Frege 1891, 1892),[1] built on his earlier work in symbolic logic, had a decisive impact on the discussion of meaning in analytical philosophy. Frege's ambition was to translate ordinary language statements into a symbolic formalism that should allow the construction of a scientific language of science.

Had Frege fully succeeded, diagnosis of conceptual ambiguity in economics would amount to a pathology of texts displaying such ambiguity, all instances of where the project of conceptual clarification by translation into a suitable formalism had not yet been brought to full fruition. Yet, Frege's logicism ultimately failed, and its failure should prove instructive to economists who, intentionally or not, adhere to what may be called the 'Traditional Doctrine'. According to the Traditional Doctrine, also known as the definition view of concepts (Laurence and Margolis1999: 8), lexical concepts in economics, which for our purposes are bascially those expressed as abstract nouns such as 'profit' or 'transaction costs', are mental representations disciplined by the scientific discourse of economics, such that ideally every economist is aware of the necessary and sufficient conditions of their application. To be able to achieve this conceptual clarity, the Traditional Doctrine places great emphasis on the need for economists to define their concepts in precise terms.

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1 See also Frege (1892-95).

How then can we achieve precise definitions of economic concepts? Modern exponents of the Traditional Doctrine will call for the provision of an intensional definition, one that provides a list of features that together pick out those entities to which the concept refers. Take the concept of transaction costs. Defining it in intensional terms would delimit a subset of what counts as an economic cost, on the basis of those features that distinguish transaction costs from other costs.

Intensional definitions find their modern origins in Frege's functionalist interpretation of concepts. At the core of Frege's innovations in the theory of meaning was a generalisation of key mathematical notions, such as 'function' or 'equation', to encompass ordinary language semantics. Given the generally favourable predisposition of economists towards formalist analysis, and the tendency of adherents of the Traditional Doctrine in economics of phrasing their arguments in broadly Fregean terms, the aim of this paper is to explore Fregean semantics, some of its limitations, and how it may be reinterpreted from within a broadly economic framework to shed light on the nature of core concepts in economics.

Section 2 will discuss the sense-reference distinction that forms the core of his semantics, and how it relates to the notion of intension. Section 3 explores the limitations of trying to fix the meaning of core economic concepts on the basis of definitions. In section 4, an alternative perspective on fixing meaning is developed along semantic externalist lines, which reinterprets Fregean senses as social objects. Section 5 extends this discussion with the argument that the social externalist reading of Frege is compatible with intrinsic conceptual ambiguity due to the open-ended nature of rule-following. Section 6 explores the implications of the foregoing analysis for Frege's distinction between concepts and concept-words, and points to an institutionalist version of semantic externalism that takes concept-words instead of concepts as its basic unit of analysis. The conclusion draws out the implications of this perspective for key terms in economics that, to a Fregean conceptual pathologist, may appear ambiguous or ill-defined.

2. Meaning, sense, intension: Frege's legacy

Following Frege's (1891) original example, consider the three arithmetic expressions E1: $2 \cdot 1^3 + 1$, E2: $2 \cdot 2^3 + 2$, and E3: $2 + 1$. Frege clearly distinguishes between a symbol and the object that it stands for, by contrasting the numerals '1', '2', and '3' with the natural numbers that they stand for. In his framework, the numerals act as the proper names of those numbers, while the numbers themselves are regarded as abstract objects that populate a platonic realm.

Expressions, too, may be regarded as proper names. Expressions E1 and E3 for example stand for the number three. In an important sense, therefore, E1 and E3 mean the same. E2 by contrast yields 18, In at least some respects, its meaning differs from E1 and E2. Frege's aim was to express these different aspects of meaning in more precise terms by drawing a distinction between the reference and the meaning of expressions and concepts. While clearly different expressions, both E1 and E3 refer to the same abstract object identified by the numeral 3. Frege called this aspect of meaning 'reference' ('Bedeutung'), to distinguish it from 'sense' ('Sinn'). Two expressions may mean the same object in referential terms, but they do not necessarily share the same sense.

Consider again E1 and E3. On the level of mathematical text, they 'look' different. This matters a great deal semantically. When we ask whether E1 and E3 mean the same, what we are in fact asking is whether 'E1 = E3' is a true proposition. But it is not immediately evident why '$2 \cdot 1^3 + 1 = 2 + 1$', and we may in fact be tempted to perform some basic arithmetical operations prior to accepting this proposition. In the case of $2 + 1 = 2 + 1$ our reaction would be different since the symbols on both sides of this equation coincide. While the validity of 'E3 = E3' rests on symbolic identity, that of 'E1 = E3' goes beyond the strictly textual level. Its evaluation requires more than the pre-semantic ability to identify token instantiation of the same symbolic type, which was arguably all that we needed in our analysis of $2 + 1 = 2 + 1$. In Frege's terms, analysis of '$2 \cdot 1^3 + 1 = 2 + 1$' requires that we grasp the sense of the expressions on either side of the equation.

With E1 and E3, we had two expressions with the same reference yet different senses. Conversely, two expressions may not have the same reference yet share the same sense. Take E1 in

comparison to E2. While their reference differs, they appear to be structurally similar in a way that E1 and E3 are not even though the reference of the latter is the same. To show that the meaning of mathematical expressions is not fully exhausted in referential terms, Frege points to the different functional forms in which they are given. Restricting the focus on functions of one variable $x \in \Re$, E3 may be regarded as an instantiation of $f(x) = 2 + x$, while both E1 and E2 instantiate $g(x) = 2x^3 + x$.[2]

In being the instantiation of the same function, Frege seems to say that E1 and E2 share the same sense even though their reference differs. This would be odd, and indeed quite different from what he had in mind. Surely, full synonymity should imply identical reference. There is a semantic commonality between E1 and E2 that is more complex than that expressed by identity of rerence, but it does not amount to full commonality of sense. Although Frege did not quite put it this way, consider the concept 'is an instantiation of g( )'. Both E1 and E2 would fall under this concept, while E3 would not. There is thus a conceptual level of meaning that is distinct from its immediate referential aspects, and that goes beyond speaking of the sense (and reference) of proper names.

Frege defined concepts as functions from objects to truth values. These functions in effect differentiate the universe of all objects into those that, if used as the argument of the function, render the proposition 'x is an A' true, and those that render it false. Take the statement 'x is solution to g(x) = 3'. It represents a particular function that maps x into either of the two truth values 'true' and 'false'. For x = 1, the statement is true, for any other x it is false. Therefore, 1 falls under the concept 'is solution to g(x) = 3', and it is the only object that does so.

Frege's definition of concept readily generalises to non-arithmetic and in fact non-mathematical predicates. One could for example use 'U(x)' as the shorthand for the concept 'is an uneven natural number'. Likewise, D(x) could express the concept 'dog', in that only those x that were dogs made the proposition 'is a dog' true. Instead of analysing the sentence 'Bobo is a dog' one could then, with

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2 Note that this semantic link between E1 and E2 does not reduce to token resemblance. Function g(x) may for example also be written as '$2 (x + 1)^3 - (6x + 5) x - 2$'.

'b' as shorthand for the proper name 'Bobo', write 'D(b)', meaning that the object referred to as Bobo falls under the concept 'dog' (cf. Zalta 2005).[3]

In all this, Frege maintained his strict separation between the symbolic and the object level, arguing that the symbol used to express a concept should be distinguished from the concept itself. He therefore distinguished between a 'concept-word' or predicate (Begriffswort) and the concept itself (Begriff). Just as numerals act as proper names for numbers, concept-words act as proper names for particular concepts. Their reference consists of the concept as an abstract object. Since the reference of concepts, in turn, consists of truth values, there is no direct link in Fregean semantics between a concept and the objects that fall under it. Instead, Frege speaks here of the extension of the concept ('Begriffsumfang'), defined as all those arguments for which the proposition 'x is an A' assumes the value 'true'.

On the level of detail, Frege's understanding of extension turns out to be involved and subject to considerable exegetical difficulty (e.g. Burge 1984).[4] This has not stopped the concept of extension, together with the complementary notion of intension in the place of Frege's sense, from achieving canonical status in modern philosophical semantics. Briefly, the extension of a concept comprises all objects of which the concept is true, while its intension comprises those features that, to the extent that they conjunctively apply to a given object, identify all members of the extension of the

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3 The attraction of Frege's project from the perspective of clarifying scientific concepts and inferences should be clear by now. For example, questions such as 'Is there an object which is both an f( ) and a g( )?' could be solved formally by analysing whether 'f(x) = g(x)'. With the above specifications, the sought object is the number one.

4 Frege's specification of extension also gives rise to formal inconsistencies famously known as 'Russell's paradox' but these are specific to Frege's system and as such do not provide sufficient grounds for abandoning Fregean semantics. Briefly, Russell exploited the following 'immanently reflexive' (Davis and Klaes 2003) aspect of Frege's definition of extension: The extension of the concept 'extension' contains itself, since it is an extension. Therefore, the extension of the concept 'extension that does not contain itself' implies a contradiction, since it only contains itself in case it does not (Zalta 2005; see also Alnes 1999).

concept.[5] Hence, concepts are ultimately understood in intensional terms, or, to use a common turn of words, 'intension determines extension'. Frege himself remained rather elusive on what he meant by the 'sense' of expressions and concepts (e.g. Chalmers 2002, Rheinwald 1997). Much of what he wrote regarding the sense of concept-words, for example, remains metaphorical or restricted to footnotes. The notion of intension is therefore often regarded as a clarifying interpretation and operationalisation of 'sense'.

In the light of Frege's legacy, the recipee for fulfilling the ambitions of the Traditional Doctrine seems thus to be straightforward. The best way for clarifying scientific concepts would be to translate them into a Fregean inspired semantic calculus, and to make sure that they are precisely defined. Frege's sense-reference distinction, expressed in its modern guise of extension and intension of a concept, offers two ways of fixing meaning. Either, one would enumerate the membership of the concept's extension, or one would provide an intensional definition by listing its defining attributes. Extensional enumeration being in most cases impractical, the call for precisely defined terms therefore typically amounts to a call for precise intensional definitions.

3. Definitionalism and its limits

What makes an intensional definition precise? Consider the common example of the definition of the concept 'bachelor' as 'unmarried man'. This seems as precise a definition as one could wish for. The attribute 'unmarried' appears to pick out exactly those men falling under the concept of bachelor, thereby determining its extension. Let us therefore call an intensional definition precise if it provides us with a list of attributes that in conjunction fix the extension of the concept in question.

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5 Expressed in the canonical terms of possible world semantics, the extension of a concept is defined as the entities to which the concept truly applies in the actual world while the intension of a concept are those entities to which the concept truly applies in all possible worlds, functionally mapping possible worlds into the concept's extensions in those worlds.

Assume now that we have managed to find a precise definition for an economic concept. Does this in itself help us in establishing the meaning of the concept?[6] Take the example of 'bachelor' again. Instead of asking ourselves what we mean by 'bachelor' we now have to ask ourselves how the concepts 'man' and 'marriage' are defined, and how the terms we use in those definitions are defined, and so forth. The only way out of this semantic regress consists of accepting the meaning of certain concepts as unproblematically well defined. Let us refer to these concepts as 'founding concepts'.

Are precise definitions on the basis of founding concepts capable of fixing the meaning of the wider set of concepts we use in economics? Pope Benedict XVI is a man, and he is not married. Would we refer to him as a bachelor?[7] Are men in long-term stable relationships bachelors or not? Would Robinson Crusoe be properly called a bachelor, had he remained trapped in his solitary confinement forever rather than returning to England and eventually marry? It is with potential counter examples along those lines that the idealised background conditions can be exposed on which even paradigm examples of precise intensional definition rest.

One may be prepared to concede this difficulty in the context of ordinary language concepts, but quickly point out that properly defined, scientific concepts should behave in a much more disciplined way. This at least has been Frege's (1892: 144n2) hope. Conceding that agreement on the sense of at least some concepts cannot generally be taken for granted, he stressed that deductive science (‘beweisende Wissenschaft’) should strive to fix if not sense then at least reference of scientific concepts. Put differently, a fully axiomatised theory, even if it cannot be fully expressed in the empiricist vocabulary of an ideal observation language (Carnap 1928), might nevertheless leave open the possibility that the meaning of theoretical concepts could be fixed by implicit Ramsey-Lewis definitions (Lewis 1970).

In the field of economics at least, full axiomatisation has turned out to be an elusive

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6 The attack on definitions that follows draws on Quine's (1951) more broadly conceived attack on analyticity.

7 See Harman (1999).

undertaking (Clower 1995). Our attempts to define economic terms precisely are therefore limited by the difficulties to come up with the practicalities of intensional definitions. Many if not all concepts appear to lack definitional structure (e.g. Laurence and Margolis 1999: 14). This view also finds support in the work of no other than Popper (1945: 18), who insists that since definitions are little else but shorthand devices the only terms that matter in science are those that remain undefined. In economics, the buck usually stops with a set of canonical concepts such as 'cost', 'price', 'economic agent'.

As Clower (1995: 310) has reminded us however, central economic notions like ‘market’, ‘firm’, ‘rational’, ‘competitive’, ‘price’, ‘optimal’, ‘efficient’, and ‘equilibrium’ remain notoriously ill-defined and imprecise once one starts querying their meaning. It is important to note therefore that even if we assume a set of primitive or unproblematic theoretical concepts that allow the construction of all other theoretical concepts extant in a particular theory or field of research, this in itself does not provide us with any warrant that their meaning is unambiguously clear. But if we are not even clear regarding the meaning of the terms that form the building blocks of our definitions, all the other concepts that build on these founding concepts as we have called them here will remain equally imprecise.

Imprecision aside, we are still faced with the question of the origin of the meaning of the founding concepts themselves. Let us again take our lead from Frege. While his concept of 'sense' remains curiously underdeveloped in his work, he has been as unambiguous as one could wish for in at least one respect: contrary to the Traditional Doctrine, which regards concepts as mental representations, Fregean senses are not to be conceived of as mental entities, but as abstract objects that form part of a platonic realm. In particular, Frege's concept-words refer to concepts, which in turn refer to truth values, and functionally provide the extension that comprises all objects that fall under a particular concept. The sense of the concept, in turn, would be the particular platonic idea expressed by it.

Frege was driven to conceptual idealism by the recognition that conceptual sense was not

subjective in nature but in important ways objectively given. He illustrated this suggestion with a metaphor, by comparing the moon as a celestial object to the virtual image of the moon as it appears on the lense of a telescope, and to its projection onto the retina of the observer. The virtual image of the moon is public to anybody who uses the telescope. Its precise shape however will vary according to the angle at which one looks at the lens. Similarly, the sense of ‘moon’ is publicly accessible, yet depends on a particular perspective. The image which is projected onto the retina of the individual observer however, like the corresponding mental image of ‘moon’, is private. Frege's sense occupies thus an intermediate position between the moon as an object of empirical experience, and its mental image. Hence, meaning for Frege is at least in part fixed by factors external to the individual speaker's mind.

4. Economic concepts as social objects

Frege defined senses as objects of reason that are distinct from entities of either our mental or the material world. What however are we to make of an object that, as Bloor (1976 [1991]: 97) in his discussion of Fregean senses put it, is "neither mental nor physical, real but not actual"? Apart from platonic entities, the only other conceivable objects that appear to fit these constraints are social objects.[8]

Frege's conceptual platonism has not found many followers. Things stand different however once we look at senses not as platonic but as social objects. While the common internalist understanding of concepts in philosophical semantics reduces them to mental representations (cf. Laurence and Margolis 1999: 7), semantic externalism forms a second important current (e.g. Kripke 1972, Putnam 1975), holding that conceptual meaning is, at least in part, determined externally. Within semantic externalism in turn, social externalists, following Burge's (1979) seminal contribution, argue that these external factors are of a social nature.

8 See Smith (2001) for a similar interpretation of Frege's abstract objects.

Treating Fregean senses as social objects amounts thus to a radical from of semantic externalism. But what are social objects to begin with? We can draw here from a theory of institutions the broad outlines of which have been developed independently by Anscombe (1969, 1976), Searle (1969, 1995), and Barnes (1983, 1988, 1995), Bloor (1997), and which displays important affinities to the economics of institutions (e.g. Searle 2005).[9] Its core consists of the recognition that social objects exhibit an important performative dimension (Austin 1956). They rest on the invocation of a particular concept, but the invocation of this concept constitutes both an action in the social realm and a linguistic event.

The performativity of social objects is due to their reflexive nature that can be likened to a self-fulfilling prophecy. Merton (1948) has provided a lucid illustration and analysis of this phenomenon. Imagine a well-run bank with a healthy amount of liquid resources. Even then, a credible rumour of imminent insolvency would be sufficient to bring about insolvency as the result of a run on the bank. Provided that the rumour is acted upon by a large enough number of depositors, they will all seek to withdraw their sight deposits at the same time. Due to the practice of fractional reserve lending, the bank will only be able to honour some of its deposit agreements at any moment in time. Beyond this threshold, insolvency looms. Following the rumour, the bank becomes thus insolvent purely because it was believed to be insolvent. The prophecy of the bank's collapse was therefore self-fulfilling.

According to Merton, a self-fulfilling prophecy is initially "a false definition of the situation evoking a new behavior which makes the originally false conception come true." (Merton 1948: 477). It seems that the ruin of the bank has been brought about by an incorrect description of its situation, as the finances of the bank really were sound. Krishna (1971) has criticised this aspect of Merton's definition. He draws attention to the fact that in terms of behavioural consequences, there is no difference between false and true initial conceptions. The 'soundness' or 'unsoundness' of the

9 See Kusch (2002: 62-65; 175-209) for an expanded discussion and sympathetic expansion of the Barnes-Bloor theory of social objects.

bank cannot be understood independently from the generally held beliefs about it.

Against Merton's assertion that the actual financial situation of the bank did not justify a disbelief in its soundness, Krishna holds that the generally held belief in the bank's stability needs to be included in the definition of its stability. He suggests further that the phenomenon of self-fulfilling prophecies points to the fundamental role of beliefs in the creation of social reality in general: in contrast to natural objects, social objects can be affected or may even be constituted by what is thought about them.10 This does not reduce them to individual mental content however, since it is only through the coordination of beliefs across a group of individuals that self-fulfilling prophecies gain force. They behave like mind-independent objects from the perspective of each and every individual making up the relevant group.11

Krishna's discussion reveals that social objects are constituted in a circular fashion. The soundness of the bank can only be defined with reference to the beliefs in its soundness. These beliefs, however, can only be defined in terms of the soundness of the bank. Social objetcs appear to be subject to 'immanent reflexivity' (Davis and Klaes 2003): they refer back to themselves. The same circularity has been identified by Anscombe (1969) with reference to marrying, making a promise, and similar social institutions. If it is essential to getting married that persons who are getting married should think that they are getting married, then the content of the thought of getting married will have to be mentioned in an explanation of what getting married is. Again, this gives rise to immanent semantic reflexivity. If we want to describe what the content of that thought is, then we shall have to mention marriage. Therefore, if we want to get access to the meaning of

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10 This comes close to Searle's (1969: 50-3) distinction between brute facts and institutional facts, although Searle does not formulate the distinction explicitly in terms of beliefs but with reference to his notion of constitutive rules. See also Hindriks (2003).

11 It is conceivable that in some cases, one or several individuals gain an influence on content and stabilisation of the emerging self-fuIfilling prophecy dominant enough to call the mind-independence postulate into question, giving for example rise to leadership effects (see Barnes 1983).

getting married we have to look beyond the immanent reflexivity that is constitutive to it.

Frege's sense-reference provides a useful focus here. Any intensional definition of the meaning of getting married runs into the difficulty of circularity as we have seen. Another way to approach the issue, instead of attempting to resolve the intensional circularity, would be to inquire into the extension of the concept. Barnes (1983) answered this question by pointing to the collective practices of the people treating a bank as sound. The social objects falling under the concept of a bank's soundness are these practices themselves as they are instituted in the context of particular banks. Everybody who treats a bank as sound and acts accordingly unwittingly plays a role in constituting a social object falling under the concept of 'solvent bank', through their conceptual invocation of the bank's soundness. The same is true for Anscombe's example of marriage. Marriage as a social institution exists only because people understand their actions in these terms. When they invoke the concept of marriage, what they refer to as a Durkheimian 'thing' are the practices of so undestanding themselves (cf. Durkheim 1938).12

5. Determinist versus finitist semantics

Even if one accepts that regarding the sense of a founding concept in economics as a social object fixes its meaning, the question remains why this should imply that those concepts remain imprecise. Conceived of as a social object, conceptual sense amounts to a commonly agreed rule that guides concept application. Nothing, it seems, prevents this rule from fixing the sense in a precise way, so that for each and every act of concept application it would be clear whether a particular concept applies or not.

There however two ways of understanding rules in this context. According to the first interpretation, it is the rule that fixes the sense of a concept. Grasping a concept would be nothing else but the mastery of the rule that prescribes its use. Bloor (1997: 3) has suggested calling this

12 Searle (1995: 32-5) has identified a similar self-referentiality in what he calls institutional facts, tied to the notion of performative utterance (Austin 1956).

position ‘meaning determinism’. Take the simple example of the sequence of even numbers. This sequence is a result of following the rule ‘add 2’. A meaning determinist would hold that once the meanings of ‘add’ and ‘2’ are fixed, possibly together with auxilliary concepts such as ‘sequence’, it seems fully clear what we must do to follow the original rule. Note though that our earlier arguments against the definitional structure of concepts remain fully applicable here. Attempting to understand the rule ‘add 2’ has led to further rules which are in need of defining. Eventually, the meaning determinist is forced to confront the origin of the compelling nature of meaning directly, via non-definitional means.13

Let us now turn to the second interpretation of rules, which is more reluctant according mental content such a prominent role in concept application. Bloor calls this alternative account ‘meaning finitism’. This terminology is inspired by Hesse’s (1974) account of classification within her network model of scientific theories. Hesse is concerned with an inductive theory of classification in which classificatory statements, hypotheses and theories only relate to a finite domain of application, emphasising the step-by-step nature of concept application: “The next case may just fail to have the characteristics we have laboriously uncovered but may have other characteristics in common with some members of the class, and it is not obvious that by exhaustive prior analysis of just that class we should be able to say which characteristics ought to belong to its next acceptable instance.” (Hesse 1974: 48). In her framework, concepts are applied and extended on the basis of ‘analogical inference’ (cf. Hesse 1966).

In the meaning finitist account of rule following and concept application, the move to the next instance is therefore not intuitive or interpretive but ‘blind’ (Bloor 1997: 19). But this blindness is a logical blindness. There is noting in a given rule that logically or semantically compels us to a particular next step. Rather, the factors at work have a causal psychological or instinctive origin: “When we are confronted with a finite set of examples we do not extract from them any general

13 This cuts an involved issue short for the purposes of the present discussion. A fuller treatment would require detailed discussion of Kripke’s (1982) sceptical challenge of meaning determinism and possible replies to it.

idea, rather, we instinctively pass on to what strikes us as the next step or the next case." (Bloor 1997: 14). Our response is due to an 'innate but socially educated' tendency to perceive similarities (see also Schlicht 1998, Klaes 2002).

Up to now, however, nothing has been said on the normative aspects of concept application. If concept application can be fully reduced to the individual's automatic response to perceived similarities, the scope for a social externalist account is reduced to the acknowledgement that our instinctive responses are shaped and moulded by the social environment in which we grow up and live. While this is true, more needs to be said to do justice to normativity. At this stage, Bloor uses Wittgenstein to make an important point: if concept application ultimately reduces to instincts or habits, it becomes impossible to talk of right or wrong concept application. There is no room for mistakes: "[W]hatever is going to seem right to me is right. And that only means that here we can't talk about "right" " (Wittgenstein 1953: 258). The mechanisms operative within each individual will not move us beyond a subjectivist account of meaning.

Consider an implicit consensus in a given speech community regarding the application of a particular concept, based on a shared history of past concept application that was collectively endorsed as correct. Put differently we might say that the speech community had, by agreeing on the correct application of the concept, 'learned' to apply it. But any such learning can only ever have presented the learner with a finite number of instances of correct concept application from which to extrapolate future usage. Typically, however, we are required to employ concepts in an open-ended fashion where there will always be the problem of how to take the next step, given that past usage is unable to narrow down the set of alternatives to a singleton. In other words, the question is how to move from previously known cases to new ones. A meaning determinist would solve this problem by pointing out that once we have grasped a concept there is a specific mental content which guides us through new cases.

Fregean semantics, and semantic externalism more generally, rules out this recourse to mental factors. But the finitist account of concept application allows for factors other than just instincts and

habits to influence how we extend past conceptual usage to new instances. Contrary to meaning determinism, meaning finitism demands that each new application is determined afresh by the factors and contingencies operative at that time, with these factors not being limited to the psycho-biological make-up of the individual but including the continuous interaction and debate within a given group of individuals seeking to apply particular concepts.

Correct concept application becomes thus understood as agreement in action. Applying a concept correctly would imply being aligned in certain ways with the members of a given community that would ensure that particular acts of concept application went unchallenged. The nature of this tacit consensus resides in the ongoing interaction of rule-followers who collectively monitor and sanction each other’s tendencies to apply concepts. Importantly however, the consensus is tacit in merely the sense that it persists as long as the application of a particular concept-word goes unchallenged in a particular discourse community. It is thus premised on shared interpretations or mental content at best in a minimalist sense.

6. Founding concepts

We are now in a position to revisit Frege's distinction between concept-word and concept in the light of developing his notion of sense in a semantic externalist way that does not regard senses as objects of reason, but as social objects instead. Let us recapitulate. Starting out with the question of why and how concepts should be defined in precise terms, we had to acknowledge that at least some concepts may simply not exhibit definitional structure. We also encountered the difficulty of fixing the meaning of those concepts that, by necessity, were left undefined and potentially ambiguous. Not convinced by the quasi-mythical nature of Fregean senses as objects of reason, we adopted a semantic externalist position that regards Fregean sense as a material entity along the lines suggested by Durkheim's social 'facts' or the objects of a performative social ontology along the lines of Anscombe, Searle, or Barnes.

Having thus provided a re-interpretation of Frege's sense, where does this leaves his notion of reference? Concepts, it has been suggested here, should be understood in terms of the rules governing their application, and these rules in turn are self-referential and performative social objects. But what theory of reference is implied in those allusions to reference and self-reference? A finitist approach to concept application casts doubt on the usefulness of the concept of extension (cf. Barnes 1981, 1982). If there is only ever a set of past instances of which a concept is true, the extension of a concept across past and future uses is actually at any moment in time indeterminate since past usage will not allow any definite inference as to possible future applications. Finitist semantics still has to account for the 'phenomenon' of reference (cf. Bloor 2001). There are concepts which we take to apply to concrete objects. The normativity of their content equips them with the ability to refer to things in the world in a way that appears to escape the immanent reflexivity of the social objects picked out by concepts like 'marriage' or 'promise'. As a result, the self-reference constitutive of sense as a social objects needs in the case of at least some concepts be complemented by an account of alter-reference.

Take the theoretical concept 'electron' (Bloor 1995). In his experimental work that led to the discovery of the electron, J. J. Thomson originally spoke of ‘corpuscles’ instead of electrons. Subsequently, the electron was alternatively described as an electrified particle or as an entity with wave-like properties. In spite of these contradictory accounts of the electron, the majority of physicists agreed that the electron existed. According to Bloor however, the confidence in the entity’s existence did not derive from a shared content of the concept of electron. Instead, this confidence emerged from increasing reference to 'electrons'. Similar to the institution of marriage, which persists despite the large spectrum of individual accounts of it, the concept of the electron became stabilised not because scientists reached agreement on its content, but because the word itself became entrenched in current usage.

Hacking (1983: 264) has provided a similar account of the application of the concept of the electron in present-day physics: “Even people in a team, who work on different parts of the same

large experiment, may hold different and mutually incompatible accounts of electrons." As a collective, the team is nevertheless able to successfully manipulate 'electrons'. Hacking sees no reason to expect that the intersection of all theories of the members of the team contains a common theoretical core.14

What seems to emerge both from Bloor's and Hacking's depiction of the use of 'electron' in these debates is less the (social) material nature of the concept of 'electron' than the (physical) material nature of the concept-word 'electron'. What was endorsed across the various interpretations of 'electron' was less a shared content than a shared concept-word, to the extent that one may wonder whether it is actually necessary to ascribe to the sense of the concept a separate existence as a social object at all. If the invocation of the concept-word 'electron' is sufficient to coordinate social action, separate reference to sense must appear as a remnant of Fregean idealism, resulting from an unwarranted neglect of the importance of the materiality of linguistic entities.

In other words, the concept of 'concept' would reduce to a convenient shorthand for addressing the complexities of actual overlapping language games.[15] The concept as a carrier of shared sense would take second place to the concrete materiality offered by the coordinating role played by token concept-words. Sense would then emerge as the overlap of individual beliefs resulting from the coordination in the actions of individuals brought forth and sustained by the invocation of a concept-word. The distinction between concept and concept-word would become redundant, not in favour of 'concept' as is common but in favour 'concept-word'.

In (revised) Fregean terms, this alternative view can now be brought to the point. Instead of

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14 Hacking's discussion is part of a larger argument in favour of scientific entity realism. Against this account, one could hold that every theoretical entity is by definition already associated with a model. While a shared higher-level theory might well be absent, the mere fact that the team works together on electrons assumes a commonly held model, however limited this shared model may be.

15 In this context, see also Bartsch (1998: 13) who seeks to reduce the 'concept' concept to a neural-connectionist theory of communication and action.

regarding concept-words as proper names of concepts, they should be regarded as proper names for the intersection of language games, their sense emerging only ever a posteriori as the overlap of individual beliefs sustained by a particular language game, such overlap understood as successful coordination of interaction among individuals. A priori, the sense of a given concept-word would remain ambiguous and imprecise. While this would spurn debate and conceptual revision in the case of actively contested and developed concept-words, those concept-words that are required to sustain the frame of uncontested, 'common' understanding that alone can enable debate in the first instance would exactly be those taken for granted. It is those concept-words that we have suggested to call 'founding concepts'.

For founding economic concepts, i.e. those concepts for which we lack a precise definition in economics, two extreme cases can occur. On the one hand, one could imagine a situation of complete sense collectivism, which would occur if the mental contents of all individuals applying a concept-word were identical. On the other hand, one could imagine complete sense disintegration. The intersection of the mental content of any two individuals would be empty. Actual application of concept-words is likely to fall somewhere in between these two extremes. Individuals might share a minimum core content associated with a particular concept-word, or content might be scattered across all individuals in a particular language game in a chain-like fashion, giving rise to Wittgenstein's idea of family resemblance. Linguists refer to the former as centered heap complexes and to the latter as chain complexes which are a limiting case of heap complexes that lack a common centre (Bartsch 1998: 56-60). To the extent that one could still speak of the same language game, the integrating factor in the case of non-centered heap complexes would be not shared content but the shared 'invocation' of the same concept-word (Klaes 2004).

Conclusion

Economists typically assume that the meaning of key lexical concepts such as profit, cost, market,

firm, competition is uncontroversial. The lack of conceptual controversy may indicate that the meaning of these concepts is the common property of all those employing them in scholarly discussion. This, to use the terms of this paper, would be the account offered by a meaning determinist. In the vocabulary of the revised Fregean account of concept-word meaning presented above, meaning determinists are bound to assume a sense collectivist position.

In this article, we have argued for an alternative reading of the lack of controversy associated with founding concepts in economics. Absence of conceptual debate is equally compatible with a situation in which semantic differences simply do not escalate into conceptual conflict, be it that the differences are not consciously perceived to be present, or that they are not worth fighting over. There is thus scope for various degrees of sense individualism within a meaning finitist account of concept(-word) application.

Ethnographically speaking, the use of a term in a discussion or in a text may go challenged or unchallenged. For there to be conceptual debate on some concepts in economics – typically those at the conceptual 'frontier' of a given discourse – most other concepts in which such frontier is phrased must be accepted as unproblematic background. This allows a space for founding concepts to remain unchallenged even though collective agreement on their use might be restricted to the shared application of the associated concept-words.

The resulting picture clearly warrants closer investigation. Under which conditions for example may individual economists hold mutually exclusive interpretations of the same founding concepts while joining ranks in an ongoing debate on a controversial 'frontier concept'? How does conceptual ambiguity relate to the various scenarious of partly overlapping language games, and how may it be usefully measured? Conceptual history is gradually addressing those and related questions (Klaes 2001, 2004; Klaes and Sent 2005).

Karl Popper has suggested that we should care less about the precision of our conceptual definitions than the cumulative precision of our conceptual imprecision: "We are always conscious that our terms are a little vague (since we have learned to use them only in practical applications)

and we reach precision not by reducing their penumbra of vagueness, but rather by keeping well within it, by carefully phrasing our sentences in such a way that the possible shades of meaning of our terms do not matter" (Popper 1945: 19). In the context of participation in ongoing debates while avoiding escalation of unproductive disagreement on founding concepts at least, this appears to be wise counsel in the light of the arguments presented in this paper.

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