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Introduction

With many, Frege counts for a modern Platonist. There are quite a few passages in his writings which can be quoted in support of such an assessment, and in sum they even today seem to make a strong case for adopting an ontology which is Platonistic in the broader sense. In particular, there is a passage in Frege's essay "On Thoughts" (Der Gedanke) telling that a "third realm" has to be acknowledged – a realm which is meant by Frege to include entities neither of the psychic variety nor accessible to the (outer) senses.

It is Wolfgang Carl's aim in his opening contribution entitled "Frege – a Platonist or a Neo-Kantian?" – one among a group of four articles exploring, among other things, the place of Frege in the history of philosophy – to show that the label "Platonist" does not really capture the special touch of Frege's position. No more does, according to Carl, the rival (yet in connection with Frege less familiar) label "neo-Kantian".

Carl starts by discussing the issue of Frege and Platonism. The residents of the "third realm" (which are meant to be all kinds of senses (Sinne) of linguistic expressions (including thoughts), and the usually recognized objects of mathematical investigation) are characterized by Frege as being neither subjective nor real. (Cf. On Sense and Reference, p. 30; On Thoughts, p. 76 seq.) Opposing the most obvious reading, Carl proposes not to take Frege's subjective-objective-distinction as an ontologically anchored classification of different types of entities, plausibly involving different kinds of being. Instead, the distinction relates, as Carl argues, to different types of discourse (so that it gets more of the taste of an epistemological than of an ontological dichotomy): in discourse about mathematical objects, e.g., it does not matter what any person believes to be true, or whatever ideas or mental images she associates with the linguistic expres-
In addressing the question whether Frege's philosophical approach is appropriately qualified as neo-Kantian in spirit, Carl reviews tenets of three leading members of the German neo-Kantian school: W. Windelband, H. Rickert, and H. Cohen. In comparing Frege to them, he finds a common element in all four thinkers' shared anti-psychologism. On the other hand, he points to a difference (which again, in his eyes, is sufficient to deny, with regard to Frege's thinking, the appropriateness of the label at issue): whereas for neo-Kantians acts of thinking essentially include, according to Carl, mental representations, Frege conceives thoughts (being items to be considered) as the potential contents of sentences, thus relating them and therewith thinking, to the realm of semantical entities, and loosening the connection of both with the sphere of the subjective. For Carl, this move of Frege's is in accordance with the spirit of the "context principle" whose adoption, in Frege's treatise on "The Foundations of Arithmetic" (Die Grundlagen der Arithmetik), is appreciated as a remedy against confusing the search for the content of a linguistic expression with the search for an idea (understood as a mental being, a Vorstellung) associated with it.

Gottfried Gabriel contradicts Carl in defending the thesis (attributed by Gabriel to H. Sluga) that "Frege's efforts are part of the neo-Kantian tradition." In support of this thesis he mentions, among other things, that the context principle adopted by Frege (saying that one should not ask for the content of a word in isolation, but only in the context of a complete sentence containing that word) was a semantical version of a metaphysical principle, in the final analysis going back to Hegel, which Frege took over from H. Lotze, the founder of neo-Kantianism. So with Carl, on the one hand, the way in which Frege puts to work in "The Foundations of Arithmetic" the context principle (namely as a means of demarcating an objectivist semantical approach from a subjectivist account of the contents of thinking) serves as evidence for the claim that there is a point where Frege's and the neo-Kantian ways diverge. Taking into account the genesis of the very same principle, Gabriel claims, on the other hand, to have revealed a common root in both party's thinking. In addition, Gabriel sides with Carl in assessing both party's shared anti-psychologism as a point of convergence.

In tracing the context principle back to the 'continental' philosophers Hegel and Lotze, while also finding it at work in the writings of thinkers of the analytical provenance like Frege, Wittgenstein, and more recent advocates of holistic approaches, Gabriel also claims to have pinpointed a continental root of analytical philosophy (as it is signaled by the title of his contribution).

Concerning the context principle, the moral to be drawn from Stuhlmann-Laëssz's contribution (chap. III) will however be that not too important a role in Frege's thinking should be granted to this principle.

Regarding the issue of Frege and Platonism, there is a remarkable point of agreement with Carl and Gabriel. Like Carl, Gabriel is inclined to interpret the peculiarity of those assumed residents of Frege's "third realm" which are thoughts not so much as a matter of particular ontological status but prefers to couch it in epistemological terms: the much stressed independence of the contents of human thinking, i.e. of thoughts, is not ontologically conceived as an independent existence, but logically as an independence in being valid: what individuals believe to be true is taken not to the slightest degree to matter for the validity of a thought. But for Gabriel, this kind of independence postulated by Frege (which in Gabriel's eyes marks another correspondence of Frege's and the neo-Kantians' ways) is sufficient to qualify Frege's philosophy as a form of Platonism (as "transcendental Platonism", to be precise). Here, he relies on a weaker notion of Platonism than Carl does.

Interestingly, a number of observations made by Gabriel on neo-Kantian value theory and the related terminology could offer an explanation for Frege's practice, when intending to talk about true or false sentences or thoughts, to choose the terms "truth value" (Wahrheitswert) and Bedeutung (the latter term conveying the idea of importance, and of being of value).

From the articles by Carl and Gabriel it is already plain to see that a crucial element in Frege's thinking is the conviction that human beings are capable, by way of thinking or "grasping thoughts" (as Frege used to express it), to enter into a relation with residents of the "third realm". In his already mentioned essay "On Thoughts", and in particular on p. 75 thereof, Frege presents himself as facing a problem with the possibility of such a relation. Thereby he foreshadows a question which is among the most discussed in today's philosophy: how can a mental state or process be endowed with a content which is, among other things, suited to be expressed by a sentence? In fact, Wolfgang Malzkorn proposes to analyze a person's grasping of a thought as that person's having an idea (in the sense of being in a particular mental state) which in turn has the thought involved as its content. The question what this relation between an idea and a thought consists of he leaves to be tackled.

Malzkorn's proposal regarding the grasping of thoughts is connected with an analysis he gives of the abovementioned passage from "On Thoughts" — a passage where Frege is trying to ally anticipated doubts about the view that grasping of thoughts is possible. The passage, and espe-
cially the contained assertion that for visual perception of things (as an example) to occur it be required that something non-sensible is added to a given visual impression, is apt to ring Kantian bells, as E. Picardi elsewhere expresses it. So, an analysis of the passage in question again raises the question how Frege relates to Kant and Kantianism. Malzkorn rejects Kantian readings and offers an alternative interpretation according to which the "non-sensible something" Frege has in mind would be "a certain faculty to process sense-impressions of actual things and thus turn them into sense-perceptions of those things."

The Frege-Kant relation is also a theme in Tyler Burge’s contribution. Here, the object is to compare the notions of apriority found in Frege, Kant, and Leibniz.

There is an enduring systematic interest in a clarification of the notion of a priori truth because, to mention one point, it pertains to the still controversial epistemic status of mathematics. Not least owing to Frege’s foundational work, it is clear that a clarification of the latter requires a clarification of the status of those set theoretical axioms which as we know permit the derivation of wide parts of mathematics. Since Gödel accomplished the proof of his incompleteness results, we know in addition that no consistent and recursive first order theory including a sufficient portion of arithmetic can comprise the totality of propositions recognized by mathematicians as validly established. Hence the nature of validity and truth in mathematics, which Frege believed to have settled for the field of arithmetic (until he was confronted with Russell’s paradox), remains an intriguing issue.

Having experienced the breakdown of his original project of a foundation of arithmetic, Frege stuck to his view (presented by Burge as a central element in Frege’s rationalism) that logic and mathematics are disciplines of an a priori character. Only the more specific belief that truth in arithmetic is analytical truth he felt forced to drop. The established propositions of (Euclidian) geometry he had always believed to be synthetic a priori truths, here in agreement with Kant. Burge shows that in “The Foundations of Arithmetic”, Frege uses a notion of apriority which seems queer from a Fregean point of view. Frege has in mind a certain faculty to process sense-impressions of actual things and thus turn them into sense-perceptions of those things. Frege’s Leibnizian conception of apriority takes generality of justificational starting point to be fundamental”, as Burge puts it. In his eyes, this means an opposition to Kant who primarily links apriority to justificational independence of sense experience while not at all excluding particular acts of intuiting (if only the intuitions are “pure”) relating to particulars, especially to particular geometrical objects, and carrying no generality with them. Burge prefers Kant’s conception of apriority to Frege’s. One reason is that he believes cogito-sentences (reporting the occurrence of certain of a speaker’s mental events in a first-person perspective), and possibly other indexical sentences like “I’m here now”, to be apriori true, following S. Kripke. According to Frege’s conception, however, such sentences seem to be bound to lack apriority due to their (presumptive) derivability from general laws.

The verbal agreement of Frege and Kant with respect to the claim that Euclidian geometry consists of synthetically true assertions (as a consequence of the justificational dependence on pure intuition of the basic principles in this field) actually is, according to Burge, not more than a verbal agreement. The reason is that in this connection Frege, as Burge understands him, has in mind only intuitive acts being devoid of any reference to particulars and particular constructions in (pure) space, in keeping with his generality-based conception of apriority.

While the first group of articles, apart from discussing a variety of Fregean themes, serve to locate Frege’s thinking in the network of a broader philosophical tradition, the next group go into the details of a special, and venerable, subject anew tapped by Frege: the semantical content of expressions, and in particular their sense (meaning, Sinn).

Gilead Bar-Elli points to the distinctness of two conceptions of sense employed by Frege. The core idea of the first conception is to consider a sense a mode of presentation of something. According to the second conception, which is somewhat reminiscent of the context principle (as spelled out for the level of senses; cf. the distinctions made in Stuhlmann-Laiesz’s contribution), senses are primarily conceived as parts of thoughts: the sense of an expression α contributes to a thought which is expressed by a sentence containing α. Bar-Elli argues in favour of the first conception. In his eyes, the ways objects are given to us are fundamental for the objectivity of truths relating to them. In geometry, objects are given by intuition, and the basic axioms are justified, and therewith shown to be objective, or objectively true, by an appeal to intuition. In fact, Burge’s discussion of Frege’s claim that the assertions of Euclidian geometry are a priori truths raises the question how Frege would want to justify the underlying general principles, which he thinks admit of no further proof. Bar-Elli’s answer: those principles express at least some basic aspects of the modes the geometrical objects are presented to us in intuition.

Things are similar in arithmetic, according to Bar-Elli: numbers are given to us as logical objects, and their special mode of being presented suffices for justifying the basic arithmetical truths. Bar-Elli also explains
how logical objects come to be given: the decisive move is from an equivalence of functions to the sameness of the respective course of values, following Frege’s basic law No. V. Bar-Elli ends up with a sort of reconciliation of the two concepts of sense under consideration: objectivity of a truth is objectivity of a thought which is composed of senses which are modes of presentation guaranteeing objectivity.

A starting point for Albert Newen’s considerations is Frege’s view that the meaning (= the Fregean sense) of a subsentential expression occurring in a given sentence can be thought of in terms of what the expression contributes to the thought expressed by the sentence. Given this background assumption (which is also taken into account in Bar-Elli’s article), the leading question of Newen’s article is: what precisely does a proper name, or an indexical, contribute to the thought expressed by an utterance of a sentence containing that term, and how should the meaning of such a term be construed?

The answer stresses that, from a systematic point of view, the meaning of a singular term is a multi-dimensional entity (a “vector”) comprising a number of different possible contributions to the semantic content of utterances of sentences containing that singular term. Which part of the vector is, so to speak, activated in constituting the content of an utterance depends on the peculiarities of the respective communicative situation. Accordingly, Newen’s approach denies a strict separation between the semantics and the pragmatics of singular terms.

John Perry rejects a certain move Frege made in “On Sense and Reference” (Über Sinn und Bedeutung). The move consists in subjecting the possession of “proper” cognitive value by a true identity statement “a = b” to the condition that each of the terms “a” and “b” presents (gibt) the common reference in its own peculiar way.

Perry argues that in order to meet the phenomena, one should better take the concept of the (conceptual) content of expressions as employed by Frege in the “Conceptual Notation” (Begriffsschrift) as a starting point, and fan out conceptual content into three directions – finally arriving at three propositions associated with an identity statement all of which can have proper informational value. The first one is what Perry calls the “subject matter proposition” associated with “a = b” (it corresponds to what is otherwise known as the Russellian proposition belonging to the statement in question). The second one has to be the pertinent “modes of designation proposition”, and the third one figures as the associated “modes of presentation proposition.” Concerning these matters, there is a remarkable convergence of Albert Newen’s and John Perry’s ideas.

Frege had a problem with relating an intersubjectively stable sense to genuine proper names (eigentliche Eigennamen, cf. On Sense and Reference, p. 27, fn. 2), as opposed to definite descriptions. In fact one would ask

how to think of the way Aristotle is “given” by the name “Aristotle” (setting aside the problem that, in a sense, Aristotle no longer exists, so that there is nothing left to be “given” to anybody).

There is an obvious reaction to the problem: assume direct reference for genuine proper names, that is, take it that they refer directly to an individual, not requiring a mediating sense; there is no sense associated with them. An essentially equivalent option consists in simply equating senses of proper names with their reference.

A crucial point in Rosemaria Rheinwald’s considerations is the insight that the latter option is supported by conceiving the meaning (= the Fregean sense) of a proper name, following a Carnap-Church-Kaplan-thread (as it is also followed in Nortmann’s contribution), as the function defined on the set of all possible worlds which assigns to each world the (fixed) extension of the name. Assuming along with S. Kripke that proper names are rigid designators, there is in fact only one value being assigned to all arguments, that is we have a constant function. Simply identify such a function with its only value, and you are in agreement with Rheinwald who says: “Since the function is constant, I propose to identify the meaning of a proper name with its reference.”

Given this proposal, Rheinwald argues that a Fregean semantics as formalized à la A. Church is in combination with the rigidity-thesis by and large equivalent to Russell’s “constituent thesis”. The latter is the thesis that individuals (as they can be designated by proper names) can figure as constituents of propositions. At any rate, the constituent thesis is true from a Fregean point of view provided that senses of proper names are the referents of those names. Defending moreover the thesis that Russell, properly understood, did not hold a description theory of ordinary proper names, Rheinwald finally arrives at a localization of Frege’s semantics which finds expression in the equations: Frege-Church + rigidity thesis = Russell = Kripke.

Ulrich Nortmann’s subject is the sense of predicates. At the beginning of his contribution, he rejects a principle of exclusive designation to the effect that functions can be designated only by expressions which are themselves in need of completion (ergänzungsbefüllt, as Frege used to express it). Thereby the ground is cleared for talking in the familiar ways about concepts in the later sections of the paper. In addition, the stage is set for a discussion of the “function theory of the Sinn of predicates” (P. Geach). According to this theory, the sense of a predicate is a function which takes senses of names of individuals as arguments and maps each of them to the thought expressed by the sentence which results from combining the respective name with the given predicate. Sect. 2 contains some speculations about what Frege could have gained even for his logicist project if he had adopted a more critical attitude towards said principle.
Then the main questions of Nortmann’s contribution are tackled: can one have a distinctively Frege-style semantic approach which at the same time has been modernized along Carnapian lines by drawing on Carnapian intensions, and what could one say about the senses of predicates in such a theory? The first question is answered positively, and a special kind of composition-function is introduced in dealing with the second question.

In the final section, some consequences are drawn, based on the answer to the second question, for the interpretive hypothesis (criticized by M. Dummett) that the function theory of the sense of predicates is at least compatible with Frege’s views.

Frege assumed that each concept expression refers to a single concept which is its Fregean meaning (= Bedeutung), and which is associated with the expression as such, not varying with respect to distinct epistemic conditions different utterers might be in. Here, Frege is at variance with the intuitively plausible view (which is also supposed in Haas-Spohn’s and Spohn’s intensions, and what could one say about the senses of predicates in such a theory? The first question is answered positively, and a special kind of composition-function is introduced in dealing with the second question.

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It is François Recanati’s concern in his contribution to embed the sketched view into the framework of a Frege-style semantics by postulating and exploring a special type of mode of presentation: the “deferential” type.

Recanati maintains (in a sense keeping a Fregean course) that the “content” of the arthritis-concept employed by the patient who suffers from but is not really informed about that disease is the same as the “content” of the arthritis-concept of the physician in charge. A possible analysis says that one and the same Fregean concept (the concept of arthritis) is involved here, but that it is given to the patient in a deferential mode, namely as: the concept which the physician associates with the expression “arthritis.” The achievement of successfully referring is, so to speak, deferred to the physician as the utterer who is competent on the relevant score.

Recanati proceeds by comparing the deferential mode of presentation with indexical ways of presentation. For the reference of the demonstrative expression “this house over there” to be determined it is required that the utterer has perceptive access to it. In a similar vein, Recanati’s patient will manage to refer only if he/she utters “arthritis” in a context which is such that in it, he/she is in contact with a person figuring as the expert-utterer.
using practices” (such as “fusion”, “confusion”, and “fission” as explained in sections 3.4 to 3.6).

Frege did not have a real problem with negative existential statements which contain as their grammatical subject a string consisting of an indefinite article and a predicate, such as “A perpetuum mobile does not exist.” In cases like that, there was no question for Frege that the logical subject existed; on his view, the logical subject is a concept here, and the point of the statements in question is to express that that concept is empty (i.e., no individual falls under the concept).

Things look different, however, when negative singular existential statements are to be taken into account. They mean a real problem for the Fregean, because their truth seems to imply that their respective grammatical subject is an empty name, which in turn would imply that, referring to nothing, they lack a truth value. Singular existential statements are the subject of Edgar Morscher’s contribution from sect. 8 onwards. Morscher’s starting point is the following task: try to find a well formed formula of first order predicate logic with identity (Le. of PL1=, using Morscher’s abbreviation) which is neither logically true nor logically false, and which can claim in other respects as well to be an acceptable explication of “α exists” (with “α” being a singular term). An obvious candidate like 3(x = α) will not do, since this formula is PL1= valid (whereas existence, as one would reasonably argue, must as a rule be a matter of contingent fact).

Morscher proceeds by discussing several solutions to the problem proposed in recent literature (by J. Hintikka, B. van Fraassen, B. Skyrms, S. Lehmann and others), and finally ends up with what he calls the “classical solution” (because it can be traced back to Bolzano): in contexts of type “α exists”, singular terms “α” refer to what normally is their sense; the statements in question say about the involved sense that it is not empty, but that there is a corresponding referent. The classical solution (so Morscher argues) has to be supplemented, however, by a fairly up-to-date conception of senses which frames them, for instance, in a possible-worlds-setting (as Nortmann seeks to do for the senses of predicate expressions).

When Frege wrote down “The Foundations of Arithmetic”, it apparently seemed somewhat difficult to him to present the figures and their natural-language counterparts (“one”, “two”, …) as meaningful and referring singular terms. According to one of the notions of sense found in Frege, senses are modes of presentation of something, and not without plausibility Frege asks (The Foundations of Arithmetic, §62) how it was possible for a number to be presented to a human being if it is to be conceived as an abstract object, hence as something which surely cannot be given through perceptual experience. He even goes to the point of concealing (not yet explicitly distinguishing between sense and reference) that a number-expression might lack designation outside a complete sentential context (Foundations, §60). In fact one could argue from a later standpoint, underlining the fact that sentences of the type

“the number belonging to the concept F is the same as the number belonging to the concept G”

can be rephrased as

“there is a bijection relating the F-things to the G-things”,

that apparent designators of numbers are incomplete symbols, actually empty names which can be explained away in context. Frege is anxious to avoid consequences like that, and he seems to succeed by relying on the method of explicitly (not contextually) defining number-expressions he presents in “Foundations”, §68.

Rainer Stuhlmann-Laeisz observes, however, that Frege’s definitional procedure is impaired by an internal difficulty. As he points out, Frege’s explicit definition of cardinal numbers:

the number belonging to the concept F is the extension of the concept (or equivalently, of the property) of being equinumerous with F

presupposes the concept of the extension of a concept, and therewith (in the light of “The Basic Laws of Arithmetic”) the concept of the course of values of a function. Hence it follows, Stuhlmann-Laeisz argues, that this explicit definition affords no solution to the “Julius Caesar-problem”, i.e. the problem of how to enable one at least in principle to decide of any given object whether it is a number or not. For in order to accomplish this task, one would have to be in the position to decide of any object whether it is a course of values (of any function) or not. This however cannot be managed on the base of a mere explication of the identity of the courses of values of any two given functions; nor can it be managed on the base of an explicit definition of courses of values which follows the paradigm of the above-mentioned number-definition, since such a definition of courses of values is bound to be circular.

For these reasons, Stuhlmann-Laeisz sums up, the Julius Caesar-problem was ultimately unsolvable for Frege. So he was in effect forced to stick to his contextual definition of numbers as a second-best solution – acknowledging faute de mieux a context principle for this special case of introducing the numbers. But Frege was not inclined, Stuhlmann-Laeisz contends, to see a virtue in accepting a general context principle.

A fourth group of articles are again concerned with concepts. But here the focus is more on concepts as such, not so much on their potential functioning in a semantical framework. Wolfgang Künne points out that Frege at least partly endorsed what Bolzano completely rejected, namely the “Canon
of Reciprocity (CR)" of the logical tradition. (CR) can be split into two claims concerning any pair of concepts \( x \) and \( y \): firstly, if the extension of \( x \) is a (proper) part of the extension of \( y \), then the content of \( y \) is a (proper) part of the content of \( x \); the second claim is the converse of the first one. As to the first one (which was explicitly supported by Frege), Bolzano knew significant counterexamples. These depend, however, on his special notion of being part according to which, for instance, the concept woman would be a component of relative of a woman. A line of defence open to Frege is to require as necessary for the content of \( y \) to be part of the content of \( x \) that every individual falling under \( x \) must also fall under \( y \). This condition is also necessary for the concept \( y \)'s being a Fregean "mark" (Merkmal) of \( x \). This strategy is not suited, however, for a defence of the second half of (CR). Bolzano attacked it by pointing to concepts of which the one is comparatively abundant, containing the other one as a more terse component, as e.g. with equilateral triangle which is equiangular \((= y)\) and equilateral triangle \( (= x) \). Here, the content of \( x \) is part of the content of \( y \), and every object falling under \( y \) must also fall under \( x \); nevertheless, the extension of \( y \) is identical with that of \( x \), hence it is not a (proper) part of the latter.

Ulrike Haas-Spohn and Wolfgang Spohn start from externalism, i.e. from the view (propagated by T. Burge and H. Putnam) that meanings are not in the head, and the beliefs of an epistemic subject are not completely determined by the subject’s internal states. Nevertheless they express their conviction that there is a certain species of close relatives of meanings and belief contents which can be completely “in the head” – “narrow contents”, as they call them.

Frege found himself in a historical situation in which he encountered strong psychologist tendencies in theories of language, logic and mathematics. Accordingly he was so eager to stress the intersubjective and objective character of thoughts, and of meanings in general, that theorizing about subjective relatives of (potentially) intersubjectively shared contents was not his concern. This bias, which was certainly fruitful in Frege’s times, has been counterbalanced by more recent developments in semantical theory which Haas-Spohn’s and Spohn’s considerations fit in. In their present article, the authors aim as partial realists to offer a conception of narrow concepts individual and general, i.e. of the narrow (subjective) contents associated with singular terms and with predicates. In basing their proposal on D. Kaplan’s character-theory, they seek to avoid on the one hand what they call “Schiffer’s problem” (this is the problem of how to reach that aim without drawing on functional roles); on the other hand, they seek a course enabling them to avoid both horns of what they call “Block’s dilemma” (which are syntacticism, or the boiling down of concepts essentially to words, and holism so excessive that it gets any little change in a person’s beliefs entail a change of her concepts).

Roughly spoken and simplified, Haas-Spohn’s and Spohn’s proposal is (expressed for the case of a singular term “a”):

The concept which a subject \( s \) associates with \( a \) in a situation is a function assigning to each possible (and subject-centered) world the set of objects existing in that world which, according to the subject’s judgement in that situation, could be the object which \( a \) refers to in the reference situation.

To be identical with the relevant object is possible (in a certain sense) precisely for those objects which share the relevant object’s essential properties. So the gist of the proposal can be expressed as the idea that, in the special case mentioned, a subject’s individual concept associated with \( a \) is constituted by that subject’s beliefs about the essence of the individual which the term \( a \) refers to.

Récanati analyzes the subject-relativity which is also Haas-Spohn’s and Spohn’s concern in a way which leaves room for talking of the sameness of the “content” of concepts employed by distinct subjects, and which makes the variation across subjects a matter of differing modes of presentation. Haas-Spohn’s and Spohn’s account is in a more radical fashion subjectivist. Their proposal gives rise to the question, however, how to draw the line between subjects counting as competent speakers, and subjects not so qualifying. Is there an upper limit to the eventual absurdity of the beliefs about essences involved? As it stands, the proposal admits every belief system whatsoever.

Set theory and (classical, Fregean) logic form the pillars which a wide range of contemporary mathematics can be based upon. So it is crucial for an assessment of the epistemic status of mathematics to get clear about the nature of these disciplines, or to try to shape them in a philosophically satisfactory way.

Burge argues in his article that a theory of sets starting with a supply of \( \omega \)-elements, and raising a universe of sets on it, would not have been to Frege’s taste (at least when he wrote “The Foundations of Arithmetic”). The reason is that such \( \omega \)-elements would count as particulars, and that assertions about irreducible particulars would presumably lack the generality which Frege demands, according to Burge, of the principles of an \( a \) priori theory. Instead, a system of set theory shaping sets as extensions of concepts, and starting with an empty set determined by some empty concept, might be much more to the taste of the Fregean due to the generality he would grant to concepts.

It is precisely this idea, meeting the supposed Fregean demand, which leads Frans von Kutschera in formulating a new system of set theory – a system which on the other hand bears a nominalistic stamp, and in so far
would seem to deviate from Fregean ideas, as a result of von Kutschera's finally working with extensions of predicates instead of extensions of concepts. In contrast to Carl, von Kutschera does not hesitate to classify Frege as a Platonist for his realist attitude towards concepts which according to von Kutschera is involved in his realism towards sets: "if sets are extensions of concepts then realism as to sets implies realism as to concepts", he writes.

The system labeled "Q" in von Kutschera's contribution is introduced by way of a step by step comparison with G. Boolos's iterative set theory as presented in Boolos’s article from the early seventies, “The Iterative Concept of Set". According to von Kutschera, Boolos's system, even though a step in the right direction, sticks to a collective notion of set, as opposed to the markedly constructive character claimed by von Kutschera for his own conception. Insofar as the extensions of predicates employed by von Kutschera are merely “relative” extensions, the relevant predicates being restrictively defined for objects on the levels of a certain hierarchy similar to that which underlies Boolos's approach, von Kutschera's construction incorporates elements of the latter.

Uwe Meixner presents several respects in which Frege's characterization of logic as the science of the laws of being true seems mistaken – and this not only in a present-day perspective, but also from a Fregean viewpoint itself. Regarding the latter, Meixner is right to point out: for a long stretch, Frege propagated the logicist thesis; had this thesis been true, it would have been correct to view even arithmetic, ultimately, as a science of the laws of truth – an assessment which Frege hardly would have supported.

Even if the scope of Frege's characterization of logic is limited to classical elementary logic (while intuitionist logic, e.g., and systems strong enough to afford the development of larger parts of elementary number theory are excluded), it remains subject to criticism as it is advanced in sect. 9 of Meixner's contribution: it is possible to explicate classical validity and implication (on the level of propositional logic) within an intensional framework, doing completely without the concept of truth; nevertheless, this concept can be regained within such a framework by appropriate definition (again in opposition to Frege for whom truth was undefinable).

Albert Newen
Ulrich Nortmann
Rainer Stuhlmann-Laeisz
The leading question of this article is: What does a proper name or an indexical contribute to the thought expressed by an utterance of a sentence containing that term, and what is the meaning of such terms? In the first part of this paper I will discuss in detail Frege’s views on thoughts and singular terms. In the second part I will then outline a systematic theory of meaning for singular terms which is inspired by my reconstruction of Frege: the so-called vector theory of meaning.

Frege’s philosophy of language is (at least) based on the following claims: (1) Semantics is a project of attaching the content (Fregean sense) of utterances and parts of utterances to sentences and parts of sentences as types: Frege describes one of his main discoveries as the distinction between the categories of sign (as a type of expression), sense, and reference. (2) There is only a single logically relevant level for characterizing the content of sentences, i.e. the level of thoughts. I would like to show that Frege had severe problems with both claims while working out the details of his semantics. Concerning the second claim it is argued that Frege’s epistemic criterion of identity and his logical criterion of identity are extensionally equivalent. This means that there is one level of classifying sentences which Frege calls the level of thoughts. Nevertheless, Frege introduces further, more fine-grained levels of classifying sentences which are logically relevant and not just psychologically important: the level of assertions and the level of definitions. Concerning the first claim it is shown that while
dealing with proper names and indexicals, Frege himself noticed that in order to describe the relation between a sentence and the thought expressed one has to distinguish different ways of understanding a sentence which is already part of natural language. This leads to a discussion of Frege’s views on proper names and indexicals. On the basis of this reconstruction of Frege’s philosophy of language a systematic theory of meaning for singular terms is developed which denies the dogma of standard semantics, according to which an unambiguous utterance (without any deficits, i.e. no missing words, demonstratives are accompanied with gestures if necessary etc.) expresses exactly one semantic content (one Fregean thought). I will argue that the question about the thought contribution of singular terms has to be distinguished from the question concerning the meaning of singular terms. Although Frege answered both questions by characterizing a relevant mode of presentation, it will be shown that the answer concerning the thought contribution only partly answers the question about the meaning of the term. The meaning of a singular term is a vector containing different possible contributions to the semantic content expressed by an utterance of the sentence containing that singular term. Which part of the vector contributes to constituting the semantic content of an utterance (a truth-condition) depends on the communicative situation. Therefore, there is no strict separation between the semantics and pragmatics of singular terms.

1 Characterizing Thoughts in Frege’s Philosophy

1.1 General Features of Thoughts

Let me review the general features of thoughts according to Frege. Thoughts are the senses that are expressed by sentences. They are imperceptible, non-spatial, non-temporal entities. Nevertheless, they are objective entities (and not subjective entities such as ideas), i.e. they are “independent for their existence and nature from any person’s thinking them or thinking about them”¹. A person is related to thoughts by grasping them, while he/she is related to ideas, feelings, etc. by having them. Thoughts are either true or false if they can be expressed by using only terms which refer. Under this condition they always have a truth-value and it remains the same (relative to the actual world). Finally, thoughts are abstract objects with a special kind of reality, since there is no reciprocal action concerning thoughts (Thoughts, p. 29).

One central feature of thoughts is the compositionality of sense. Thoughts are composed of the senses of the meaningful parts of the relevant sentence. They can be analyzed in a sense expressed by an unsaturated expression and - if the unsaturated expression is a one-place predicate -

¹ Burge 1992, p. 634.
The epistemic criterion:
Sentence A expresses the same thought as sentence B if and only if an ideal subject cannot believe that A is true and at the same time believe that B is false (and vice versa).

The ideal subject has to know all conditionals "if A then B" which are true only on the basis of logical evidence and standard language competence. Logical evidence does not include any knowledge of "informative" identities. An ideal subject only knows an identity if it is part of standard language competence. Such an ideal subject can also be called an ideal rational subject, because it cannot believe any contradiction if the contradiction can be discovered only on the basis of logical knowledge and standard language competence. To discover a classical Fregean "hidden contradiction" one needs additional world knowledge. One has to know that the entities referred to by the terms 'a' and 'b' are identical, e.g. one has to know that the morning star is the same as the evening star. If Charly lacks this knowledge, the following sentences can nevertheless all be true:

(1a) The morning star is identical with the evening star.

(And therefore: “The morning star is F” ↔ “The evening star is F”)

(1b) Charly believes that the morning star is a planet with a shorter period of revolution than the earth.

(1c) Charly believes that it is not the case that the evening star is a planet with a shorter period of revolution than the earth.

Both the logical and the epistemic criterion allow for the same kind of examples of "contradictory", but still rational beliefs:

(2a) The G is F ↔ The H is F.

(2b) A believes that the G is F.

(2c) A believes that it is not the case that the H is F.

According to Frege these groups of sentences are not incompatible because the sentences "The G is F" and "The H is F" express different thoughts although they fulfill condition 2a. The fact that they express different thoughts is determined by the epistemic (or as well by the logical) criterion of thought identity, i.e. if 2b and 2c are true and A understands

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5 To ascribe contradictory, but still rational beliefs it would be sufficient to have the following version of 1c: (1e*) Charly does not believe that the morning star is a planet with a shorter period of revolution than the earth. Since I would not like to discuss cases of agnosticism concerning an attitude here (which still makes 1e* true) I prefer the stronger version 1c.

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3 Frege's Antipsychologism

Frege's antipsychologism concerning thoughts has two core aspects: First of all, Frege argues that thoughts are objective entities that exist independent of any mind. The second aspect of Frege's criticism of psychology is based on his aim to characterize only those features of language which are relevant to logic, these being the thoughts expressed by sentences. With a few examples he illustrates which aspects he counts as irrelevant to logic and not involved in thoughts expressed by sentences (Thoughts, p. 9):

(i) Thoughts do not involve intonation, the atmosphere or the mood of an expression, e.g. the difference that you have between a use of 'horse' or 'steed' or 'nag' or 'prad'.

(ii) Furthermore, words like 'still' in 'Alfred has still not arrived' that are used to give us hints do not express a part of the thought.

(iii) The difference between sentences which result from changing the verb from active to passive form and at the same time transforming the accusative into the subject is irrelevant for the classification of thoughts.
In general Frege claims that “all constituents of sentences not covered by the assertoric force do not belong to scientific exposition; but they are sometimes hard to avoid, even for one who sees the danger connected with them.” (Thoughts, p. 9)

With ‘scientific exposition’ Frege means a description at the level of thoughts since science only deals with thoughts leaving aside all aspects of psychology and aesthetics. Having this rough characterization of those psychological aspects in mind which Frege would like to put aside, I would like to show that Frege introduces different levels of classifying sentences which are all logically relevant but which are distinct from the level of thoughts. While analyzing the specialities of language, Frege noticed that his level of thoughts is not enough to account for all logically relevant aspects of language.

2 Levels of Classifying Sentences in Frege’s Philosophy

2.1 Thoughts and their Parts

We already mentioned that thoughts are composed of senses, and a standard simple thought, e.g. the one expressed by “Socrates is a philosopher” is composed of the sense expressed by the proper name “Socrates” and the sense expressed by the predicate “is a philosopher”:

(I) The principle of compositionality has to be understood as follows:

The thought expressed by a sentence is determined by the senses of the expressions which constitute the sentence.

(II) An important observation in Frege’s philosophy is that the same thought can be expressed by different sentences even if the thought components associated with the corresponding parts of the sentences are different.6

(2a) Socrates is a philosopher.

(2b) Being a philosopher is a property of Socrates.

The thought expressed by 2a is composed of and determined by the sense of “Socrates” (σ₁) and the sense of “is a philosopher” (σ₂), while the thought expressed by 2b is composed of and determined by the sense of “Being a philosopher” (σ₃₁) and the sense of “is a property of Socrates” (σ₃₂). The senses of the syntactically corresponding parts of the sentences σ₁ and σ₂ as well as σ₃₁ and σ₃₂ are different. It is also clear that σ₁ and σ₂ are different senses.7 Nevertheless, 2a and 2b express the same thought. How is this possible according to Fregean compositionality?

(III) The analysis of a thought is not determined by the thought:

Frege only claims that the parts of the thought determine the thought but not that the thought determines its parts. Frege explicitly denies this direction of compositionality and he introduces the possibility of analyzing one thought in different ways.

“This <possibility, A. N.> will be surprising only to somebody who fails to see that a thought can be split up in many ways, so that now one thing, now another, appears as subject or predicate. The thought itself does not yet determine what is to be regarded as the subject. If we say ‘the subject of this judgement’, we do not designate anything definite unless at the same time we indicate a definite kind of analysis;” (On Concept and Object, p. 49)

The thought expressed by one unambiguous (and nonindexical) sentence can be characterized in different ways. Since we have no direct access to thoughts but only via sentences, these ways can be e.g. characterized by different ways of analyzing one of the sentences expressing the thought: The sentence “Socrates is a philosopher” can be analyzed such that “Socrates” is the subject (as in 2a) or such that “Being a philosopher” is the subject of the sentence (as in 2b). Frege introduces the notion of assertion ("Aussage") to characterize the difference between 2a and 2b. They express the same thought, but they are different assertions for an assertion is the result of one way of analyzing a sentence and thereby analyzing the thought expressed by it. We can characterize this level by looking at one of Frege’s examples where he illustrates that a thought has to be completed by an analysis to determine what the subject of the sentence is which the thought expresses, e.g. the thought expressed by “There is at least one square root of 4” can be characterized in many different ways. Here are four ways of expressing the same thought, in which different features relevant for distinguishing different ways of analyzing sentences are involved (On Concept and Object, p. 49-50):

(3a) “There is at least one square root of 4”

(3b) “The concept square root of 4 is realized.”

(3c) “There is something that has the property of giving the result 4 when multiplied by itself.”

(3d) “The number 4 has the property that there is something of which it is the square.”

7 “Socrates” as used in 2a is a saturated expression and therefore the reference of the expression is an object, while the reference of "is a property of Socrates" is a concept. Since the expressions have different references and sense determines reference, the senses (σ₁) and (σ₄) must be different.
2.2 Analyzing the Logical Surface Structure: The Level of Assertions

If we compare 3a and 3b then according to Frege the analysis shows that we have different assertions because of the difference in logical structure. The structure of the Fregean reference of the sentences is the following:

3a: second order concept - first order concept
3b: object - first order concept
3c: second order concept - first order concept
3d: object - first order concept

According to this structural analysis 3a and 3c, on the one hand, and 3b and 3d, on the other, are equivalent, i.e. each pair consists of sentences making the same assertion. The level of assertions can be described as follows: Two sentences are used to make the same assertion if and only if they express the same thought and have the same logical surface structure. The logical surface structure is determined by the reference of the expressions which are the result of analyzing a sentence into an unsaturated expression and the respective saturated expressions.

2.3 Analyzing the Concept-Structure: The Level of Definitions

Let us now compare 3a and 3c in more detail since both sentences have the same logical surface structure. To receive 3c from 3a we simply have to substitute a complex expression by its definition. Therefore we have definitionally equivalent sentences with the same logical structure:

(3a) "There is at least one square root of 4"  
(3c) "There is (at least, A. N.) something that has the property of giving the result 4 when multiplied by itself."

A parallel example is discussed by Dummett, Bell and Bermúdez:

(4a) 13 is prime.
(4b) 13 is greater than 1 and, for any number n, if n divides ( ) then either n = ( ) or n = 1.

Bell claims that 4a* and 4b* designate different concepts. But this is not consistent with Frege's explicit views on definitions:

"We shall call the simple sign the definiendum, and the complex group of signs which it replaces the definiens. The definiendum acquires its sense only from the definiens. This sense is built up out of the sense of the parts of the definiens." (Frege, "Logic in Mathematics" 1914, in: Posthumous Writings, 208.)

Dummett accepts that 4a* and 4b* are synonymous but he claims that 4a and 4b express different thoughts. His argument is based on the following principle that Bermudez calls principle K: If one sentence involves a sense (σ1) that another sentence does not involve, then these sentences express different thoughts.10

We have already presented a Fregean counterexample to this claim:

(2a) Socrates is a philosopher. σ2 (σ1)
(2b) Being a philosopher is a property of Socrates. σ4 (σ3)

2a and 2b are examples parallel to the explicitly mentioned Fregean examples; they express the same thought, although they are not composed by the same senses. Therefore we cannot ascribe principle K to Frege. He accepts the following principle of sense-constituency:

Even if two sentences s1 and s2 express the same thought, they can have different sense constituents.

Furthermore, Frege explicitly makes claims that imply that 4a and 4b express the same thought:

"We have to distinguish between a sentence and the thought it expresses. If the definiens occurs in the sentence and we replace it by the definiendum, this does not affect the thought at all. It is true we get a different sentence if we do this, but we do not get a different thought." (Frege, "Logic in Mathematics" 1914, in: Posthumous Writings, 208.)

10 Dummett ascribes this principle to Frege. But it is only seemingly implied by the principle that one cannot grasp a thought expressed by a sentence without grasping the constituent senses expressed by the parts of the sentence. Since Frege notes different ways of analyzing sentences (and thereby thoughts), a difference in constituent senses need not entail a difference in thoughts expressed. This is noted by Bermudez 2001; Kommerling 1990 argues also against this principle.
According to this quotation, Frege holds the principle that definitionally equivalent sentences express the same thought:

A sentence $s_1$ and a sentence $s_2$ express the same thought if they are definitionally equivalent, while two sentences $s_1$ and $s_2$ are definitionally equivalent if and only if $s_2$ is the result of substituting all tokens of an expression in $s_1$ by a definition of that expression (or vice versa).

This is compatible with principle K if we presuppose that definitionally equivalent sentences involve the same constituent senses. But we had to give up principle K for the reasons already mentioned. Therefore contrary to what Dummett claims, principle K cannot give us a reason for holding that $4a$ and $4b$ express different thoughts. Frege's principle of compositionality is misunderstood if it is interpreted as implying principle K. Frege accepts the following as a sufficient condition for thought identity, but he does not accept the corresponding necessary condition:

If sentences $s_1$ and $s_2$ involve the same senses then they express the same thought.

And obviously he thereby accepts the converse (without accepting principle K):

If sentences $s_1$ and $s_2$ express different thoughts then $s_1$ involves at least one sense that $s_2$ does not or $s_2$ involves at least one sense that $s_1$ does not.

Furthermore, Frege accepts the following principle of sense constituency:

Even if two sentences $s_1$ and $s_2$ express the same thought and have the same logical surface structure, they can have different thought constituents.

We have characterized two additional levels of classifying sentences according to Frege's remarks: The first is the level of sentences which express the same thought and have the same logical surface structure. I call this, according to Frege, the level of assertions. The second is the level of definitionally equivalent sentences where this criterion implies that these sentences are making the same assertion. I call this the level of definitions. Although both additional levels of classifying sentences are more fine-grained than the level of thoughts, the classifications are logically relevant.

The level of assertions includes distinctions between e.g. first-order and second-order concepts which are obviously relevant to logic. Furthermore, we have the level of definitions which is logically relevant, because definitions play an important role in the systematic construction of a logical frame.

### The Sense Expressed by the Use of Proper Names

One important point I wish to develop in this paper is the claim that we must distinguish different ways of understanding sentences to account for Frege's remarks on singular terms. According to Frege, communication has the following basic structure: The speaker grasps a thought which he expresses by uttering a sentence and the listener grasps the same thought by hearing the sentence.

**Frege's Basic Model of Successful Communication:**

- **Speaker** utters sentence $1$ which expresses thought $1$.
- **Listener** hears sentence $1$ and grasps thought $1$.

One presupposition of this basic model is that a sentence expresses exactly one thought, i.e. that the sentence has a determined relation to a thought. But Frege noticed that there are several aspects of natural language which do not allow for such a determined relation in the case of sentences containing proper names and indexicals. These aspects will be explained in the following by introducing different ways of understanding a sentence using proper names and indexicals.

There is a philosophically central way in which we can use two sentences which are neither definitionally equivalent at the level of definitions nor at the level of assertions, but which express the same thought. Such pairs of sentences are an important tool for realizing a project of sentence reduction with the aim of developing some kind of theory reduction. A Fregean example is the following pair: (A) There are just as many Fs as Os. (B) The number of Fs is identical with the number of Os. Both sentences express the same thought. But it is obvious that they have different logical surface structures, because A is an existence claim and B is an identity statement. Furthermore, the sentences are not definitionally equivalent, because definitionally equivalence presupposes a determinedness of logical surface structure which is not the case. This example confirms not only that we have separated two additional levels of sentence classification which are more fine-grained than the level of thoughts, but also that examples like A and B are important for the programme of reduction for an interesting form of reduction is dependent on essentially different sentences expressing the same thought.
The paradigmatic example involving "Phosphorus" and "Hesperus" as two proper names denoting the planet Venus illustrates, firstly, that we need the level of senses to characterize the content of utterances, e.g. we have to distinguish different modes of presentation of one object, and, secondly, that the epistemic situation is an important aspect of thought identity. It is clear that if someone believes that Hesperus is not the same as Phosphorus, then the sentences "Hesperus is F" and "Phosphorus is F" express different thoughts. What should Frege say if someone knows that Hesperus is identical with Phosphorus? For a person who has this knowledge the thought expressed can be the same although they need not be. If this person associates the same sense with the word "Phosphorus" as with the word "Hesperus", e.g. the sense expressed by "the star which is the lightest in the evening sky", then both sentences express the same thought because the same sense constituents are involved in the thoughts expressed. It is possible for someone who knows that Phosphorus is identical with Hesperus to grasp this mode of presentation in combination with understanding the word "Phosphorus" even though this is not the sense usually associated with and used to introduce the word. The conclusion is that the sentences (6a) "Phosphorus is F" and (6b) "Hesperus is F" express different thoughts not absolutely but only relative to a specific understanding of the sentences, i.e. relative to a way of combining the words with senses. Ways of understanding a sentence are different ways of relating an expression with the relevant sense expressed. One feature of proper names and indexicals in natural language is that they can be related to many different senses depending on the epistemic situation of a subject. The linguistic meaning does not determine the sense grasped by such terms. In an ideal language Frege demands that each proper name express exactly one mode of presentation. But he admits that in natural language this is not the case and sometimes causes problems.

"So we must really stipulate that for every proper name there shall be just one associated manner of presentation of the object so designated. It is often unimportant that this stipulation should be fulfilled, but not always." (Thoughts, p. 12)

Now I would like to discuss the problematic cases of sentences containing proper names or indexicals as presented by Frege in 'Thoughts'.

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14 The fact that this belief is false is irrelevant. If someone correctly believes that Jupiter is not the same as Saturn and uses the sentences "Jupiter is F" and "Saturn is F" then he/she expresses different thoughts because sense determines reference.

15 In this example it is irrelevant that the belief is true. If someone falsely believes that Saturn is identical with Jupiter and uses the sentences "Jupiter is F" and "Saturn is F" then he/she may express the same thought (if the same mode of presentation is associated with the two proper names) or he/she may express different thoughts (if different modes of presentation are associated with the two proper names).
A central aspect concerning the relation between a sentence and the thought expressed by an utterance of it is the way the proper names and the indexicals used in the sentence are understood. Although Frege does not say this, we may add that \(7a\) and \(7b\) express the same thought if the singular terms ‘I’ and ‘Dr. Gustav Lauben’ are both understood in such a way that they express the same sense, whatever that sense may be. The only constraint that Frege has concerning the sense is that it determines the reference.

Now Frege’s main aim in this paragraph is to figure out that, although \(7a\) and \(7b\) express (in modern terms) the same singular proposition, they can be understood such that they express different thoughts. This is possible in a special epistemic context in which someone, Rudolf Lingens, is only partially informed about the utterance context of \(7a\):

> “But it is possible that Rudolph Lingens does not know Dr. Lauben personally and does not know that it was Dr. Lauben who recently said ‘I was wounded’. In this case Rudolph Lingens cannot know that the same affair is in question. I say, therefore, in this case: the thought which Leo Peter expresses is not the same as that which Dr. Lauben uttered.” (Thoughts, p.11; My italics, A. N.)

Frege uses the phrase “in this case” twice to note the fact that the utterances \(7a\) and \(7b\) express different thoughts is not true absolutely but true relative to a way of understanding, characterized by the epistemic context of a rational and language-competent subject.

**Speaker (Dr. Gustav Lauben)**

\[\text{utters} \rightarrow \text{sentence 1} \rightarrow \text{thinks in the utterance context and the epistemic context epc 1} \rightarrow \text{thought 1} \]

\[\text{“I was wounded”} \]

**Listener/Speaker (Leo Peter)**

\[\text{utter} \rightarrow \text{sentence 2} \rightarrow \text{thinks in the utterance context and the epistemic context epc 2} \rightarrow \text{thought 2} \]

\[\text{“Dr. Gustav Lauben was wounded”} \]

Although the sentences 1 and 2 can be characterized by the same singular proposition and only two distinct, but in this case extensionally equivalent singular terms are used, the utterances can express different thoughts. Here it is important that one of the singular terms is the indexical “I”. But before we discuss the special problems of indexicality (e.g. which thought is expressed by sentence \(7b\)), we should have a look at further arguments for the special role of proper names.

### 5.2 Nonstandard epistemic contexts: The example of Herbert Garner

The function of the next paragraph in “Thoughts” is to illustrate the dependence of proper names on an epistemic context in extreme cases. Let us first have a look at the setting of the example:

**Herbert Garner’s epistemic context (epc3):** He believes that Dr. Gustav Lauben is the (only) person who was born on 13 September 1875 in N. N. He has no further information/beliefs about Dr. Gustav Lauben.

**Leo Peter’s epistemic context (epc4):** He believes that Dr. Gustav Lauben is the (only) person living in the house ABC. He has no further information/beliefs about Dr. Gustav Lauben.\(^{16}\)

Frege first argues that the utterance expressed by one person and understood by another person can express different thoughts relative to the different epistemic contexts of the two persons. He then additionally shows that relative to the same epistemic context of one subject as speaker and listener two utterances can express different thoughts even if the only difference between the two sentences uttered is that they contain two incomplete versions of the same proper name.

**Sophisticated examples of nonsuccessful communication on the basis of an understanding of the sentences:**

**One utterance can express two different thoughts:**

**Speaker (Herbert Garner)**

\[\text{utter} \rightarrow \text{sentence 1} \rightarrow \text{thinks on the basis of language conventions and the epistemic context epc 1} \rightarrow \text{thought 3} \]

\[\text{“The (only) person who was born on 13 September 1875 in N. N. was wounded.”} \]

**Listener (Leo Peter)**

\[\text{hears} \rightarrow \text{grasps} \rightarrow \text{sentence 2} \rightarrow \text{thinks on the basis of language conventions and the epistemic context epc 2} \rightarrow \text{thought 4} \]

\[\text{“The doctor who is the only doctor living in a house known to both of them was wounded.”} \]

\(^{16}\) It is sufficient to suppose that Leo Peter does not know that Dr. Gustav Lauben is the (only) person who was born on 13 September 1875 in N. N. This is what Frege says in the text. Choose a more radical epistemic context to stress the point.
Frege admits that one may argue that in any case we no longer have any reason for saying that Herbert Garner and Leo Peter speak the same language. To prevent such criticism Frege constructs an extreme case of which the speaker and the listener are one subject using different versions of the same proper name without knowing that this is so.

(ii) Two utterances which can be characterized by the same singular proposition and furthermore use different incomplete versions (e.g. 'Dr. Lauben' and 'Gustav Lauben') of the same complete proper name ('Dr. Gustav Lauben') can express two different thoughts:

<table>
<thead>
<tr>
<th>Speaker (Herbert Garner)</th>
<th>Listener (Leo Peter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>utters</td>
<td>hears</td>
</tr>
<tr>
<td>sentence 3</td>
<td>sentence 4</td>
</tr>
<tr>
<td>('Dr. Lauben was wounded')</td>
<td>('Gustav Lauben was wounded')</td>
</tr>
</tbody>
</table>

Frege claims that these utterances express different thoughts and he explicitly stresses that this difference in thought is dependent on the difference in epistemic context.

4 Indexicality and 'I'-Thoughts

There are at least three problematic questions for Frege’s philosophy of language concerning indexical utterances like “I am wounded” uttered by Dr. Gustav Lauben: 17

(i) The problem of utterance completion: What is the Fregean proper name which completes the predicate ‘is wounded’ in Lauben’s utterance? Which word-type is the expression of a thought?

(ii) The problem of content completion: Which Fregean sense completes the sense of the predicate ‘is wounded’ to yield the thought expressed by Lauben’s utterance? Which thought does Dr. Gustav Lauben express by making his utterance?

(iii) The problem of successful communication: Which thought does Leo Peter grasp when he hears and adequately understands Lauben’s utterance ‘I was wounded’?

Ad (i): Frege says that the thought is expressed not only by the mere wording but by an indexical sentence in combination with the circumstances. The relevant entity is the reference of the word “I” in the utterance context, i.e. Dr. Gustav Lauben. I argue - against an interpretation of Künne that this can be adequately understood without presupposing hybrid proper names.

Ad (ii): Often the mere wording, which can be made permanent by writing or the gramophone, does not suffice for the expression of the thought... If a time-indication is conveyed by the present tense one must know when the sentence was uttered in order to grasp the thought correctly. Therefore the time of utterance is part of the expression of the thought.” 18

Frege is interpreted by Künne to introduce hybrid proper names. Each occurrence of a hybrid proper name consists of a token of ‘I’ and Dr. Gustav Lauben in propria persona: “The proper name used in Gustav’s utterance of (1) is not the (type)-expression ‘I’, but the (type-)expression every occurrence of which contains an ‘I’-token produced by Gustav and Gustav himself.” 19

In the text Frege uses the German phrase “der bloße Wortlaut”. This is translated by “the mere wording”. It is unambiguously used to talk about word-types. And Frege is extremely careful and consistent in using his words. In the same paragraph of ‘Thoughts’ the expression ‘Wortlaut’ is always used to talk about word-types. This is noted by Künne who corrects Frege’s translation at one place. 20 Furthermore, if we read Frege very carefully in this passage, he only claims that the thought is not only expressed by the sentence-type, but by the sentence-type in combination with the circumstances while the relevant entity is the object which is the reference of the indexical expression. If we look at the sentence ‘I am wounded’ as uttered by G. Lauben then the thought is expressed by the unsaturated word-type ‘( ) is wounded’ and by the saturated word-type ‘I’ in combination with the speaker in the utterance context, i.e. Gustav Lauben in propria persona. If we would like to characterize the Fregean proper name as a hybrid proper name, then it consists of the word-type ‘I’ combined with its reference, Dr. Gustav Lauben. We can think of this expression as the word-indexed by its reference in the utterance context. This is equivalent to thinking of the Fregean proper name simply as the token of ‘I’. Therefore, it is sufficient to ascribe to Frege the position that while dealing with indexical sentences he became aware of the fact that he could not ascribe thoughts...

19 Künne substitutes the word ‘verbal expression’ for the incorrect translation of ‘Wortlaut’.
20 Künne substitutes the word ‘verbal expression’ for the incorrect translation of ‘Wortlaut’ in the phrase: “The same verbal expression [‘Wortlaut’] containing the word ‘I’ in the mouths of different men will express different thoughts of which some may be true, others false.”
to sentences but only to utterances. It is not an important part of Frege's view on indexicality that he seems to introduce hybrid proper names, since it is completely equivalent for all Fregean claims to distinguish types (i.e., the word 'I') and tokens (the utterances of the word 'I').

Ad (ii): The thought expressed by the indexical utterance depends on the way of understanding the utterance.

We have already explained that 'I was wounded' uttered by Dr. Gustav Lauben and 'Dr. Gustav Lauben was wounded' uttered by Leo Peter do not express the same thought given the epistemic context of Rudolf Lingens and 'Dr. Gustav Lauben was wounded' expressed the thought: 'The doctor, who is speaking to you at this moment was wounded'. Harcourt suggests that the Fregean proper name that he seems to introduce hybrid proper names, is such that it can be combined with the token 'I' as a token of the word 'I' in combination with its reference in the context. This remark seems to contradict the distinction made in the published paper 'Thoughts', which is why some people tend to take this remark as an aberration in an unpublished manuscript.

This remark seems to contradict the distinction made in the published paper 'Thoughts', which is why some people tend to take this remark as an aberration in an unpublished manuscript. I would like to argue that Frege's remarks are consistent if we take into account that he distinguishes different ways of understanding sentences. 'I was wounded' uttered by Dr. Gustav Lauben is understood by Rudolf Lingens in so far as he saw Lauben making the utterance, but does not know his name. Therefore, he does not know that the person named Dr. Gustav Lauben is the same as the speaker of the utterance containing 'I'. The thought he grasps is consequently different. The sentence 'I was wounded' uttered by Dr. Gustav Lauben is understood by Rudolf Lingens in so far it expresses the following thought: 'He who is speaking to you at this moment was wounded'. However, it is possible that the two sentences, which express different thoughts as understood by Rudolf Lingens, can express the same thought as Frege claims in his remarks of 1897?

This is possible relative to another epistemic background. If Rudolf Lingens heard the utterance 'I was wounded' made by Dr. Gustav Lauben and he knows or is informed about the fact that the speaker is Dr. Gustav Lauben, then the utterance 'Dr. Gustav Lauben was wounded' can express the same thought, if in both cases the same mode of presentation is associated with the different singular terms 'I' and 'Dr. Gustav Lauben'.

This interpretation is confirmed by the following passage in 'Thoughts':

It is not an important part of Frege's view on indexicality that he seems to introduce hybrid proper names, since it is completely equivalent for all Fregean claims to distinguish types (i.e., the word 'I') and tokens (the utterances of the word 'I').

In a discussion of Künne's paper Edward Harcourt shows that Künne's solution to the problem of utterance completion is insufficient, because it leads to redundancies concerning the determination of the reference. Harcourt suggests that the Fregean proper name that we are looking for is simply the token of 'I' characterized as a token of the word 'I' in combination with its reference in the context. In this paper I show that this is not only systematically unsatisfying but is explicitly claimed by Frege if we read him very carefully. Harcourt 1993, p. 301-312.

22 Dummett 1981.


The difference between sense and linguistic meaning in Frege's philosophy of language first worked out in Perry 1977.
above. Analogously, there is a difference between the linguistic meaning of an indexical and the sense expressed by its use. The linguistic meaning of 'I' can be characterized by the description "the speaker of the utterance." But the sense expressed may be characterized by a different description (when a public thought is expressed) or, in the case of expressing a so-called private thought, the sense of a use of 'I' is a nonidentification of EGO-mode of presentation.

4.1 The Privacy of I-Thoughts

"Now everyone is presented to himself in a special and primitive way, in which he is presented to no-one else. So, when Dr. Lauben has the thought that he was wounded, he will probably be basing it on this primitive way in which he is presented to himself. And only Dr. Lauben himself can grasp thoughts specified in this way. But now he may want to communicate with others. He cannot communicate a thought he alone can grasp. Therefore, if he now says 'I was wounded', he must use 'I' in a sense which can be grasped by others, perhaps in the sense of 'he who is speaking to you at this moment'; by doing this he makes the conditions accompanying his utterance serve towards the expression of a thought." (Thoughts, p.13-12)

In this paragraph Frege admits that the word 'I' uttered by one person, e.g. Dr. Gustav Lauben, can be associated with different senses. He distinguishes a private and a public sense although in principle he allows for more than one public sense. One public sense could be characterized by the description 'he who is speaking to you at this moment'; another public sense could be characterized by 'he who is waving his hand at this moment'. The private sense that can be associated with a use of 'I' can only be grasped by the speaker of the utterance. From a systematic point of view we can call this private sense the EGO-mode of presentation. It is simple (more complex), it is not based on any kind of identification (since it is immune to error through misidentification in Shoemaker's sense) and it is necessary in the case that if x is presented to y by the EGO-mode of presentation the relation is identical with y. The private thought that is associated with 'I was wounded' can be characterized by the EGO-mode of presentation realized by Lauben and the sense expressed by 'being wounded'. What exactly is the feature expressed by privacy? It is not the case that there is only one person with epistemic access to the private I-thought, because everyone can ascribe a private I-thought as Frege himself does while describing the situation:

"So, when Dr. Lauben has the thought that he was wounded, he will probably be basing it on this primitive way in which he is presented to himself." (Thoughts, p.13; My italics)

tender. A mode of presentation of the listener which fulfills these conditions is called contextually corresponding.

If we accept this - what seems to be undeniable - then we have to give up the Fregean dogma according to which communication is successful and only if speaker and listener grasp the same thought. Then we do not have to claim, as Frege must, that private I-thoughts cannot be communicated. If Lauben has a private I-thought and wants to express this private thought by uttering ‘I was wounded’, then I can only understand him correctly (not using ascriptions) if I grasp the thought which I would express by “You were (resp. He was) wounded”. Successful communication with indexical expressions is based on the fact that the speaker and the listener know that they are related to the same object with contextually corresponding modes of presentation. In combination with the word ‘I’ this is only possible if the listener relies on a different kind of relation to the same object (if he is not relying on the indirect relation based on ascriptions).

To summarize: Frege’s philosophy is essentially based on the notion of thoughts. While dealing with natural language, Frege discovers that he additionally needs more fine-grained classifications of sentences. He introduces the classification of sentences at the level of assertions (the logical surface structure) and of definitions. These differences are explicitly not differences in thought content, but they are also not psychological differences. Frege discovers here aspects which are logically relevant, although he did not invent a framework to account for them. Furthermore, while investigating sentences containing proper names or indexicals, Frege noticed that natural language does not have a sentence-type semantics. To account for proper names and indexicals we have to distinguish different ways of understanding sentences. Some of the relevant features for determining the relation between a sentence and the thought expressed are the linguistic conventions, the utterance context, and the epistemic situation of the relevant person. From a systematic point of view these aspects are not sufficient to construct an adequate semantics. In the following I argue that an adequate semantics of singular terms has to give up what I call the dogma of standard semantics.

5 Singular Terms and Theories of Semantic Content

5.1 The Contribution of Singular Terms to Thoughts according to Standard Semantics

Modern semantic positions can be split into two groups: The Fregean dogma accounts accept the constraint that the special cognitive role associated with a use of a singular term should be represented by the semantic content of the utterance containing the singular term. Therefore, they introduce some kind of mode of presentation as a part of the semantically expressed proposition. The Russellian accounts deny this constraint. They claim that the semantically expressed proposition is a singular proposition (including the subject(s) and the property or relation). The special cognitive role associated with a use of a singular term is represented by the pragmatically conveyed content of the utterances. Both views share the following presupposition which one may call the dogma of standard semantics:

An unambiguous utterance (without any deficits, i.e. no missing words, demonstratives are accompanied with gestures if necessary etc.) expresses exactly one semantic content (one thought according to semantics).

I would like to deny this dogma. Although Frege is usually treated as one of the founders of the dogma of standard semantics, a detailed investigation has shown that Frege maintains it only for ideal languages, not for natural languages. We saw that Frege implicitly denied this dogma in the discussion of first person thoughts: He distinguishes the thought one thinks and the thought one communicates while using a first person utterance even if there is only one unambiguous first person utterance. Furthermore, he introduced several levels of classifying sentences which are different from and more fine-grained than the classification of thoughts but which are nevertheless logically relevant. Since according to Frege everything that is relevant to characterize the logical structure of a sentence in natural language should be accounted for in semantics, he implicitly noticed that there is not one clear level of semantic content for an utterance in natural language.

Semantic theories are mainly based on three intuitions: While making a declarative utterance a speaker, firstly, makes a claim about the world; secondly, he transfers the information that a competent and rational speaker can while understanding the utterance without having any special world knowledge; thirdly, he informs others about his cognitive situation. To illustrate this: While using the utterance “I am hungry” I can inform about the state of affairs that Albert Newen is hungry or about the linguistically associated knowledge that the speaker of the utterance (whoever this may be) is hungry or about my special cognitive situation, i.e. I am disposed to

(i) The meaning of a sentence should characterize the truth-condition relative to possible worlds. This leads to a linguistically driven Russellian semantics of direct reference.

(ii) The meaning of a sentence should characterize the knowledge that competent and rational speakers associate with a sentence independent of contextual information. This leads to a word-type semantics as proposed e.g. by Kent Bach.
(iii) The meaning of a sentence should characterize the special cognitive situation of the speaker. This leads to a Fregean cognitive semantics.

All these three intuitions are strongly anchored and there is no absolute criterion for favoring one of them. While dealing with informative identity statements, a Fregean cognitive semantics seems to be adequate, but when dealing with modal arguments a Russellian semantics of direct reference seems to be the only acceptable view. Which intuition seems to be the correct one depends on the context and the communicative situation. Therefore, there is no one-one relation between an utterance and its semantic content. Depending on the context and the communicative situation, i.e. the intentions of the speaker and the interests of the hearer, one may change the focus to the kind of information that is literally transferred by an utterance. I would like to defend the following proposal: One can account for the three semantic intuitions in different communicative situations by distinguishing several ways of classifying utterances. The contribution of the singular term to the semantic content depends on the level of classifying utterances which is determined by the communicative situation. One model which accounts for these claims is a vector theory of meaning. Before developing the general idea of this theory of meaning, I wish to introduce several ways of classifying utterances.

5.2 Ways of Classifying Utterances

(a) I am f. (uttered by Mach)

(b) Mach is f.

(c) The speaker of the utterance is f. (The definite description is used attributively and the sentence is uttered by Mach)

(d) You are f. (addressed to Mach)

(e) He is f. (while pointing at Mach)

(f) The author of ‘Die Analyse der Empfindungen’ is f. (The definite description is used attributively)

We can classify these utterances (i) by their truth-conditions, i.e. truth-conditions relative to possible worlds according to standard semantics:

(a), (b), (d) and (e) express the singular proposition <Mach; being f>

(c) expresses the proposition <the speaker of the utterance in the possible world w; being f>

(i) expresses the proposition <the author of ‘Die Analyse der Empfindungen’ in a possible world w; being f>

(ii) by the linguistic knowledge that is associated with an utterance by a competent speaker:

(a) and (c) are equivalent concerning the linguistic competence.

(iii) by the cognitive role the thought expressed plays, e.g. in motivating actions:

Relative to this standard all utterances express different thoughts.

An unambiguous utterance alone does not determine the content expressed. Which level of classifying utterances is the relevant one depends on the communicative situation. An utterance does not have just one semantic content but rather (at least) three kinds depending on the way of classifying the utterances.

5.3 The Vector Theory of Meaning of Singular Terms

The general idea of a vector theory of meaning is that we presuppose that a singular term can contribute different parts to the content of the whole sentence, either the object referred to or a description expressing the linguistic knowledge associated with the singular term or a mode of presentation of the object. All three possible contributions can be part of the semantic content expressed by an utterance containing the singular term. Which one is relevant depends on the utterance context and the communicative situation, the intentions of the speaker and the interests of the hearer. To symbolize this view we can introduce a vector which contains at least these three contributions. This vector is constructed on the basis of the utterance context and the epistemic background of a speaker/thinker. For singular terms used referentially the following elements are determined on the basis of those conditions: 1. the object referred to, 2. the linguistic meaning, and 3. the relevant mode of presentation.

Using a Fregean example, we can characterize the meaning of the singular term ‘I’ as used in the sentence ‘I was wounded’ uttered by Dr. Gustav Lauben by the following vector containing the three elements as possible contributions to the content expressed:

Dr. Gustav Lauben; ‘the speaker of the utterance’; EGO-mode of presentation

The vector is constructed according to the convention that the first element is the object referred to, the second is the description expressing the linguistic meaning that a competent speaker associates with the singular term independent of any specific knowledge about the context, the third is a mode of presentation of the object.
The vector theory can also account for proper names. Using a Fregean example we can characterize the meaning of the singular term 'Dr. Gustav Lauben' as used in the utterance 'Dr. Gustav Lauben was wounded' by the following vector containing the three elements as possible contributions to the content expressed:

<Dr. Gustav Lauben; 'the person named Dr. Gustav Lauben'; 'the (only) person living in the house ABC'>

The first element of the vector is the person. The second element characterized by the description is the linguistic meaning which a competent speaker associates with the proper name independent of any specific knowledge about the context, the third element is a mode of presentation of the object which is expressed by the definite description and which is the relevant one according to the epistemic context.

One of the advantages of this theory of meaning is that it can easily account for empty names. Empty names have no reference but they are not without meaning. The meaning vector contains only two of the possible elements, because there is no reference, but it need not be empty: If the empty name is used in a conventionally established way, it has a linguistic meaning and if someone uses the name by associating a mode of presentation (i.e. by having a relevant epistemic background) the third element in the vector is also realized. Only the first component of the vector is empty.\(^3\)

The vector theory of meaning has the further advantage that it integrates the standard views of semantics. On the basis of the vector, which is determined by an utterance context and an epistemic context, the communicative situation is the relevant factor for determining which component of the vector contributes to the content of the utterance. If the relevant component is chosen then the classical views of compositional semantics can do their job. The important difference regarding classical semantics is the denial of the dogma of standard semantics according to which an unambiguous utterance (without any deficits, i.e. no missing words, demonstratives are accompanied with gestures if necessary etc.) has exactly one semantic content. According to different criteria of adequacy for semantics, we can distinguish different levels of characterizing utterances which are equally relevant to semantics although at least some levels do involve aspects which are traditionally classified as pragmatics. Therefore, there is no strict separation between semantics and pragmatics. The core ideas of this systematic proposal is inspired by a careful interpretation of Frege, who was not only a pioneer in logic but also in the semantics of natural languages.

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31 More details are developed in Newen 1996.