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# Thinking Fregean Thoughts

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# *Abstract*

Frege's exposition of the notion of thought has delivered a Platonist reading as the dominant interpretation of his work. On that reading, the direction of explanation is *from* thoughts, as third realm entities, to subjects' grasping, judging and reasoning, but the relation between thoughts and subjects' cognition is left unexplained. The present work parses through Frege's arguments for positing thoughts, beginning with the primacy of truth and ending with the two roles thoughts are purported to play. On this reading, the direction of explanation is from reality to subjects' cognition and reasoning, but by way of the only possible means of epistemic access subjects have to reality; namely, thoughts.

I put forth that there are two distinct accounts for the objectivity of thoughts; one which is based on their intersubjectivity, qua thinkers' shared cognitive and reasoning capacities, and another, based on their veridicality, qua their truth as determined by whether they accurately represent reality. These two accounts are explained by showing that for Frege it is the *truth* of thoughts that is considered timeless and mind-independent, while the *being* of a thought is explained by the possibility of its being shared amongst thinkers in discourse. The tools for such discourse are reviewed by considering various features of natural and what Frege calls logically perfect languages. The above two roles for thoughts are then mapped onto senses of sentential components in two capacities; (1) as their

cognitive values, and (2) as their semantic values. It is thus argued that although Frege's analysis is packed with Platonist metaphors, the outlook he ultimately puts forth is explicable in terms of the role thoughts play in thinkers' cognitive relation to reality.

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## INTRODUCTION

It is arguable that in all philosophical literature, no attempt to explicate the connection between language and cognition is more substantive than in Frege's writings. He puts forth the notion of *senses*, which can be composed as *thoughts* and are distinct from both the realm of mental as well as that of physical objects, concluding that they belong to a *third* realm. Such a realm and the nature of its occupants have been the topic of conjecture as regards the keystones of Frege's philosophy. His writings suggest a Platonist interpretation expounded on by Dummett (1991, 325) and Burge (1992) among others. At the same time, it is widely accepted that he has made significant appeals to epistemology in the notions he puts forth.

While Frege tells us that thoughts are objectively true or false and objectively inferable or not from one another based on nothing but the laws of logic, he also proposes that thoughts can be shared by subjects, or as Bell (1987, 41) puts it, they are *inter-subjective*. Scholars have inquired into the relation between objectivity and inter-subjectivity of Fregean thoughts and made attempts to explain that relation in the context of the received Platonist interpretation. But a number of philosophers have expressed skepticism towards a strictly Platonist reading of his writings and have seen the relation between the metaphysical and epistemological aspects of his views in a different light. Among the latter, Carruthers (1984) argues that on Frege's analysis, 'there is no prospect

of any convincing argument for a belief in eternal Thoughts'. Ricketts (1996) opines, 'Frege's classifying thoughts as *unwirklich* [causally inert] […] is not intended to provide any substantive explanation of or grounding for the intersubjective objectivity of judgment'. As well, Weiner (1995) argues insistently against Burge's Platonist reading. The reason for such divergent views is that Frege's exposition produces a tension between the grounding of his notions and the roles they play. Even among those with the received reading of his work, this tension has culminated in a puzzle of the sort Burge (1992, 634-f16) aptly expresses: 'How could mere reasoning give one any ground for believing that a realm of entities is one way rather than another, when that realm is so independent of that reasoning?'

The present work begins by explicating the two roles that Frege assigns to thoughts; (1) as sharable contents; and (2) as truth-bearers. In the first two chapters, I review his explanations of these roles and how each role gives us a different account of thoughts' objective status. I explore what sort of ontology or 'being' for thoughts is revealed from Frege's remarks for each of these roles. In this work, I discuss a way of understanding Frege's notion of thought which explains where these two accounts of objectivity meet and why.

In chapter 1, I review the arguments Frege brings forth to reject all reliance on token acts of thinking to explain his notion of a thought, while at the same time presupposing the possibility of shared cognitive capacities for thinkers. I explain what is meant by the

'being' of a thought in this context. In the following chapter, I review the remarks widely interpreted as touchstones of Frege's realist interpretation of thoughts, namely their independence and atemporality, to see what is at stake in these critical features. A second and distinct account of objectivity of thoughts is exposed and explained based on those findings.

In Chapter 3, I enumerate Frege's arguments for an anti-psychologistic view of laws of thought, where he at once discards all psychological, idealist, relativist as well as internalist views of those laws. Some of Husserl's added arguments against psychologism shall also be included, on the understanding that they are consistent with Frege's views. The chapter ends with some observations about the implications of his view of logical laws in the framework of the dual roles thoughts play.

The attention is subsequently turned towards Frege's remarks regarding the expression of thoughts by means of language in Chapter 4. In that chapter, some of the important aspects of Frege's examination of the different features of natural languages and his reasoning in that regard shall be expounded on. This review shows important elements in the role he assigns to thoughts, particularly in the contrast he draws between natural and what he calls *perfect* or logical languages.

Chapter 5 contains a deeper investigation towards an understanding of senses and sense

variance. I argue that Frege's notion of sense has been somewhat misconceived over the course of philosophical analyses. This breakdown is then followed by a discussion of sense variance given Frege's views about the identity of thoughts.

Chapter 6 directs the reader's attention to the objections Kripke has famously put forth against Frege's view of senses. The goal is to recognize that some of the problems Kripke points to, are caused by the tension between the aforementioned dichotomy in Frege's account. The findings in this paper are aimed at what I view as the relation between the roles that Fregean thoughts play, specifically in contrast with the Platonist understanding defended by Burge. The attempt is to show a way that the two accounts of objectivity of thoughts can come together, which both coheres with Frege's own remarks to explicate the notion of thought, and provides an understanding of their role in our cognition and reasoning.

## CHAPTER ONE – THE INTER-SUBJECTIVE OBJECTIVITY OF THOUGHTS

In this chapter, I shall review Frege's emphasis on the primacy of truth in his analysis of thoughts and examine the arguments he puts forth for positing them. Thoughts, on Frege's view, are the senses of assertoric sentences.[1] In *Thoughts* (TH) Frege enumerates the reasons why this notion cannot be applied to either physical objects or any subject's mental content. I explain why it is that when he lays the ground for positing thoughts, they cannot be conceived in any other way but as contents shared among thinkers.

This exposition of Fregean thoughts is followed by the analysis of a distinction, which as I shall argue, is implicit in his arguments. I explain how Frege takes general cognitive and reasoning faculties subjects share as the standard for subjects' relation to thoughts, while rejecting any reliance on particular acts of thinking for setting such norms. By explaining the particular vs. general distinction in subjects' capacities for thinking, I argue that Frege's claims about the intersubjectivity of thoughts can be consistent with his anti-psychologist outlook.[2]

From the maxim that the being of a thought is grounded in the capacities people share

[1] I have started with an exposition of *Thoughts* before an examination of *Senses* for reasons which become apparent when we review Frege's famous Context Principle.
[2] A more detailed discussion of Frege's anti-psychologism shall ensue in the third chapter of this paper.

in grasping the same thought, I explain the notion of intersubjective objectivity that emerges. I shall discuss how this account of objectivity of thoughts can only follow from the presupposition that subjects have shared faculties of cognition, making it possible for thoughts to be intersubjective.

### 1.1 - The Primacy of Truth

To understand what thoughts are, Frege tells us, we must ask the question: *What sort of content can truth apply to?* In a 1919 note to a historian of science he charts this route. He states:

> What is distinctive about my conception of logic is that I begin by giving pride of place to the content of the word 'true', and then immediately go on to introduce a thought as that to which the question 'Is it true?' is in principle applicable. So I do not begin with concepts and put them together to form a thought or judgement; I come by the parts of a thought by analyzing the thought. (ND, 253)

Taking the notion of truth as primary is as paramount in Frege's famous *context principle* (FA, xxii) as it is essential to his project of analyzing *Number.* By the word 'Truth', we are to understand the 'proper, unadulterated sense' of it; namely, that which is the aim of sciences. (TH, 59) In his writings, Frege specifies the general features of what he considers the proper notion of truth.

For start, he emphasizes that truth is independent of our recognition of it. He does not refute that 'thinking takes its rise from experience'. (L2, 143) Nor does he deny that the recognition of truth can be causally grounded. What he calls attention to is the fact that it is just as possible for such causes to lead to error and superstition as it is for them to lead to correct results. Moreover, the possibility of error is nearby not only for one subject at one time but for humankind throughout an epoch in history. Human fallibility is what leads Frege to the conclusion that empirical causes 'have no inherent relation to truth whatsoever'. (L1) This outcome seems puzzling. How can the proper conception of truth be inherently unrelated to the empirical causes which lead us to recognize what is and isn't true?

Frege's claim is better understood by means of the arguments he puts forth for why truth cannot be applied[3] to either the mental or the physical realm, and why it can only be applicable to the sort of contents which he calls *thoughts*. In his overview of the notion of *thought,* he lays out the constraints on truth-evaluable contents.[4] These constraints expose a sharp divide between cognition, *i.e.* grasping and judging such contents, and mental contents which are the result of perception, feelings and sensations; content which

[3] I am using the notion of *applying* truth to a content to mean that the question 'is it true?' can be asked about that content. For example, the notion of truth *cannot* be applied to a sentence that is in the form of a command, e.g. 'Open the door!'

[4] Frege points out that the way he uses the word 'thought' may not be the same as it is sometimes understood—as an act of thinking. He maintains that an act of thinking is mental and private, and its truth cannot be evaluated, whereas a thought is a truth-evaluative content. (L2, 147)

he labels as *ideas*.

On one hand, Frege rules out the possibility of an unmediated application of truth to physical objects. (L2, 129) He calls attention to the fact that the relation between objects and our consciousness is indirect:

> Physical, chemical and physiological occurrences get in between the tree and my idea [of the tree]. Only occurrences in my nervous system are immediately connected with my consciousness—or so it seems—and every observer of the tree has his particular occurrences in his particular nervous system. (TH, 71)

On the other hand, he refutes the application of truth to the contents of perception. In particular, he does away with a common theory according to which, as representations of the world, perceptions are construed as being *true* if they *correspond* to reality and false otherwise — similar to the way a picture may be said to be true of the objects it depicts. (TH, 59-60) In summary, Frege offers the following compelling reasons for rejecting *the correspondence theory of truth*:

- Correspondence is a *relation* between two things, while the word 'true' is not a relation-word.
- An idea is fundamentally different from an object and thus, the two cannot be compared.
- It is possible for two things to correspond partially, but '[Truth] does not admit of

degrees'. (L2, §131f) That is to say truth is bivalent, hence, there is no partial truth.

- In order to define truth in terms of correspondence of ideas to reality, it needs to be specified *in which respect* they correspond. Such an explanation requires further specification which would begin a vicious regress.

Now that we have reviewed Frege's rejection of a common theory for applying truth to subjects' mental content, let us point to three general reasons Frege rules out such an application altogether.

First, an idea can only be in the mind of its owner. That is to say, each subject has his or her own ideas. As Frege states, 'It is so much of the essence of any one of my ideas to be a content of my consciousness, that any idea someone else has is, just as such, different from mine'. (TH, 67)

Secondly, Frege maintains that we cannot come to know facts and advance science if it is the contents of particular subjects' consciousness which is taken as true or false. He argues, if we take one subject's mental content as true as equally as another's, no disputes about truth could ever be settled. (L2, §133f)

Frege sees that indirect reference to pain is par for the course in ordinary communication. He brings an example of two physicians talking about a patient's pain, each of them indirectly referring to the pain that patient experiences, not to the pain itself. (TH, 73) We can even add that if it were physically possible for two separate patients to experience the same pain, each patient alone has direct access to his or her pain and there is no way to

ascertain qualitative identity between their pain sensations. Frege sums up the conclusion in this way: 'It is indeed sometimes possible to establish differences in the ideas, or even in the sensations, of different men; but an exact comparison is not possible, because we cannot have both ideas together in the same consciousness'. (SR, 30) Thus, thirdly, not only is it the case that no two subjects can share a numerically identical idea, but also drawing a qualitative identity between an idea that is owned by one subject and one that is owned by a different subject is unachievable.

So far, we reviewed Frege's explanations showing that our relation to objects and states in the world is not direct and unmediated. We also surmised that on his view, our perception as representations of those objects and states is not suitable for taking on truth values. Since truth is not applicable to either mental content or physical objects and events, Frege argues, there must be truth-bearing contents, namely thoughts, which are neither mental nor physical. Moreover, such contents must be accessible to subjects.

Frege uses the expression 'grasp' as a metaphor used for the purpose of drawing a contrast between our relation to thoughts and ideas. (TH, 74f) He explains that we cannot 'have' a thought in the way we have sense impressions. He describes grasping a thought as a mental process, but one which cannot be understood from 'a purely psychological standpoint'. (L2, 157) He even calls this process 'mysterious', deferring the need for a better understanding of how the act of grasp— which is mental, puts us in a relation to a thought— which is not mental. (*Ibid.*)

It is further explained that the process by which one comes to believe a thought to be true may occur immediate to the time of one's grasp of it. However, even if one event 'follows so directly upon the other [such] that they seem to fuse into one act [...] Years of laborious investigations may come between grasping a thought and acknowledging its truth'. (NG, 151)

It is important to recognize that whether a thought is false can also be a matter of dispute and does not belong to one subject's mental life. (L2, 150) Frege explains that false thoughts are indispensable to attaining knowledge and that in many instances, it is by means of considering false thoughts and having doubts about them, that we arrive at the truth of their negation. (ND, 273)

What is critical to understand at this point, is that in both scientific and everyday discourse, it is by means of grasping thoughts that it becomes possible for subjects to share such contents. It is only through the act of grasping thoughts, that they can be in the position to agree or disagree about their truth value.

A general maxim regarding truth evaluable contents (thoughts), for which we have reviewed Frege's arguments heretofore has come to light. We shall call this the Intersubjectivity Maxim (IM):

> *IM*: For a content to be truth-evaluable (*i.e.* to be a thought), it must in principle be *possible* for thinkers to grasp it.

Here we can see that Frege does not only consider that subjects can be in a particular relation to thoughts, but that he also sees the notion of thought bearing a particular relation to the thinking subject. The latter relation can be deduced from the claim that it must be possible for subjects to grasp a given content, which can also be understood as saying that a thought *must* be sharable. Recall that this claim was argued for by showing that it is the only way that subjects can be in a position to establish truth, and consequently, the only way that science can move forward.

An added observation is that Frege takes it as given that members of a linguistic community must have the background knowledge that others can also grasp the contents they can grasp; *i.e.* that IM is true. They exchange beliefs, presupposing that it is possible for others to consider the same thought as they do, and thus agree or disagree on whether that thought is true or false. In that light, *private* contents (or private language) is not playing any part in their discourse with others.

### 1.2 – General Capacities of Cognition

It was argued in his introduction to the notion of *thought*, that it is at the core of evaluating the truth of any content to be sharable by thinkers. This was underscored by the arguments against applying truth directly to the physical world, or to the contents of

any particular subject's consciousness or *ideas.*[5] We found (as stated in *IM*) that what can pass as a thought depends on whether it can be grasped and evaluated by thinkers. At the same time, Frege tells us that any thinker or group of thinkers may be ill-equipped to grasp a thought, or be in error of some sort in doing so. (L2, 143) The anti-psychologist stance attributed to Frege (discussed in detail in Chapter 3) is directly related to not relying on particular acts of thinking in our understanding of Frege's notion of thought, as it brings what is subjective into what must remain objective.

Now, let us consider Frege's statement that, 'To the grasping of thoughts there must then correspond a special mental capacity, the power of thinking'. (TH, 74) By mentioning 'a special mental capacity', Frege invokes normative considerations in that relation. Thoughts are the only possible candidates for bearing truth because they are sharable. But this role hinges on what cognitive and reasoning capacities thinkers generally possess, or in some sense 'share'. If a particular thinker in a particular act of thinking; *e.g.,* grasping a thought, does not possess the appropriate faculties of cognition or does not utilize them, they cannot think correctly; *e.g.*, grasp a thought correctly. Clearly, every thinker does not use their capacities for cognition and reasoning correctly and appropriately in every act of thinking.[6] It is thus important to separate subjects' capacities for cognition

[5] I have used the word 'content' in its ordinary sense, as the information contained. Frege may have used the term in this way, but sometimes (Cf. *Begriffsschrift*) by the 'content' of a sign, he means its referent.

[6] We shall make more headway into what it means to think 'correctly', which has to do with 'the goal of truth' by the end of Chapter 3.

in particular or token acts of thinking from the general faculties of cognition and reasoning thinkers must possess in order to share thoughts.[7]

The impetus for drawing a distinction between a particular or individual act of cognition vs. the possible exercise of cognitive and reasoning faculties associated with thinkers in general, is based on the finding that thoughts are not dependent on the former, but they cannot be posited without presupposing the latter. Our shared faculties of cognition and reasoning may not be fully functional at all times, or they may not be fully incorporated in all acts of thinking by any individual subject, no matter how competent that thinker may be, as we humans are all fallible. Nonetheless, Frege's notion of thought is dependent on the *possibility* of thinkers exercising their full cognitive and reasoning capacities.

Based on the interpretation presented here, when Frege speaks of logic as laws of truth which hold for all thinking (L2, 139), he is speaking of the kind of thinking which utilizes the rational functions thinkers are generally capable of. Again, this sort of thinking which we can call correct thinking or norm-governed thinking (N-Thinking for short), may or may not be realized in every token act of thinking.

Moreover, Frege's remarks suggest that the rational capacities thinkers generally share, should not be confused with what we may consider 'normal'. Although on occasion Frege

[7] Here, I should mention Robert May's suggestion in his comments that the distinction I am invoking here is parallel to Noam Chomsky's, between competence and performance in speakers' linguistic abilities. This analogy seems apt, but I do not believe my lack of expertise allows me to elaborate further.

speaks to the underlying assumptions about what 'normal' humans do, he explains, what is normal to one community may not be normal to another. (L2, 143). Normal capacities of cognition can depend on the community, the era, or human history, whereas what we are considering as the general capacities of cognition are the optimum rational faculties which are possible across communities. It is therefore not each act of grasp and judging which determines whether a thought is sharable or not, but the possible capacities of the mind.

The reliance on the general capacities of the rational mind is implicit in Frege's arguments, but he has also made an explicit remark to that effect. He states,

> 'Neither logic nor mathematics has the task of investigating minds and contents of consciousness owned by individual men. Their task could perhaps be represented rather as the investigation of *the* mind; of *the* mind, not of minds'. (TH, 74)

Burge (1998) and Chalmers (2002) are among those who have expressed views about Frege's reliance on an *ideal* reasoner, in particular when it comes to logical truths. On the interpretation presented here, I differentiate between *general* and *ideal* capacities of cognition. Ideal thinking/reasoning may be understood as maximally rational in the sense of *ideal* where no limits are placed on the inferential steps necessary to grasp and judge the truth of a thought. As I see it, Frege's view of grasping, judging, and inferring is that they require exercising cognitive abilities which are possible for thinkers, rather than

limitless abilities, otherwise they would not be able to exchange information and advance in science.

Without presupposing that thinkers can possess rational faculties, whereby linguistic communities can have discourse, Frege's conception of *thought* can hardly get off the ground. The understanding of general capacities of cognition is related to Frege's view of thoughts as sharable among thinkers. A thinker who exercises these optimal cognitive capacities in a particular instance[8], is acting as a *competent thinker* (*N-thinker* for short), and that instance of thinking can be considered an instance of *competent thinking* (*N-thinking* for short).[9]

To harken back to the constraint laid out earlier and given the distinction we make here between general and particular capacities of cognition, it is more accurate to state the Intersubjectivity Maxim as follows:

***IM*:*** For a content to be truth-evaluable (*i.e.* to be a thought), it must in principle be *possible* for thinkers exercising N-thinking to grasp it.

[8] When I use the label 'N-thinker', I am not speaking of a thinker who is competent in every instance of thinking, as that is an unrealistic expectation of any rational thinker. By N-thinker, as I say above, I mean a thinker who does N-thinking or norm-governed thinking in a particular instance. In that sense, competent thinkers are N-thinkers in token acts of thinking. The presupposition which is discussed here is that competent thinkers are capable of N-thinking. I thank G.J. Mattey for insisting that I further clarify this important point.

[9] Up to this point, we have not yet fully reviewed the roles of thoughts and have yet to discuss 'the goal of thinking'. As shall be explained in Chapters 2 and 3, thinking correctly is related to thinking in accordance with the laws of truth. In that sense, competent thinking is norm-governed, which is why I chose the abbreviation 'N-thinking'.

In order to give a logical formulation of ***IM*,*** we may think of candidates such as the epistemic operator ***K*** or the doxastic operator ***B***, such that if we want to express that a thought ***p*** is known by competent thinker ***nt***, we use $K_{nt}p$, and to express that a thought ***p*** is believed (or taken to be true) by a thinker ***nt***, we use $B_{nt}p$. However, for reasons which shall be explained below these operators cannot accurately express a competent thinker's act of grasping a thought.

Recall that a thought is the sort of content about which we ask the question, 'is it true or false?'; a question to which we do not always have an answer, or if we do, it may not be the correct one. The thought is already expressed as the content of the question. As was also mentioned earlier, Frege differentiates between grasping a content and judging its truth value. (TH, 62f) He states that the assertoric form of sentences expressing judgable contents makes it easy to miss that distinction. As he puts it, 'An advance in science usually takes place in this way: first a thought is grasped, and thus may perhaps be expressed in a propositional question; after appropriate investigations, this thought is finally recognized to be true'. (TH, 62-3)

The distinction between grasping and judging a thought makes the use of the epistemic or doxastic operators unsuitable for the purpose of formulating ***IM****.* There is no requirement that subjects who grasp ***p*** must also take ***p*** to be true or false; *i.e.* $\neg\Box(B_{nt}p \vee B_{nt}\neg p)$. Moreover, even if thinkers take ***p*** to be true or false, it is not inferable that they have advanced to the knowledge of ***p*** or its negation; *i.e.* $\neg\Box(K_{nt}p \vee K_{nt}\neg p)$. It is also not

required for a thought to be consistent with a subjects' other beliefs or knowledge of other facts, in order for that subject to grasp that thought. Indeed, it is not even possible for us to come to the realization that a thought is inconsistent with our other beliefs, without having grasped it first. In the absence of a ready operator, let us use $C$ to stand for cognizing or grasping a judgable content. $C_{nt}p$ thus stands for a competent thinker $nt$ cognizing or grasping a content $p$. We shall use $\phi$ for a set containing truth-evaluable contents. The maxim for the inter-subjectivity of thoughts can be stated as:

$$\Box\,[p \in \phi \;\leftrightarrow \Diamond C_{nt}\, p\,]$$

Competent subjects are generally presumed capable of exercising their cognitive faculties lest something gets in the way. If we take this presumption as the basis for the set $\chi$, containing subjects who have general capacities for cognition, for reasons stated earlier, this set of competent thinking subjects (*N-thinkers*) is not well-defined. Any subject may in one instance or another be considered an *N-thinker*.

Furthermore, the possibility of cognition is not to be understood as its *eventuality*. What is being claimed is that a thought is the sort of content that competent thinkers are in principle capable of grasping whether or not such mental acts actually occur for every thought. Hence, the modal operator '$\Diamond$' in the formulation above is understood as a

epistemic possibility, broadly construed[10], rather than a metaphysical possibility.

Although grasping and judging thoughts are distinct events, they are closely linked to one another. Discoveries begin by grasping questions about the truth of a thought. When '[a scientist's] investigation has turned out in favor of [a] hypothesis [...] he ventures to put [it] forward as true'. (L2, 138) In this way, it is a necessary condition for a thinker to stand in the grasp relation to the content of her inquiry, for her to then be able to judge it as true or false.

To formulate the relation between grasping and judging a thought ***p***, we can use the following tools. We can say that an *N-thinker*, after having already cognized or grasped ***p***, *i.e.* $C_{nt}p$, can then believe either ***p*** or $\neg p$; *i.e.* $B_{nt}p \vee B_{nt}\neg p$. In light of Frege's arguments, a thinker who believes that either ***p*** or $\neg p$ are true, is necessarily one who has grasped ***p***. This can be expressed as follows:

$$\Box ((B_{nt}p \vee B_{nt}\neg p) \rightarrow C_{nt}p)$$

At the same time,

$$\neg (B_{nt}p \rightarrow p) \wedge \neg (B_{nt}\neg p \rightarrow \neg p)$$

This is simply stating that even if an *N-thinker* takes ***p*** to be true or false, that would have no bearing on ***p*** being true or false.

[10] I use the qualification 'broadly construed' since we are using a new cognitive operator ***C***, which is distinct from doxastic operator ***B***, and epistemic operator ***K***.

### 1.3 – Intersubjectivity

As was reviewed, on Frege's outlook, since we do not have access to the mental contents or *ideas* others have, such content cannot be truth-evaluable. For that same reason, it is not possible to empirically ascertain whether or not the same thought is grasped by different subjects. It is therefore not possible to support the intersubjectivity of thoughts by means of empirical evidence, since we cannot see inside each subject's mental contents to ascertain whether they are all grasping the same thought. The claim about thoughts being intersubjective is put forth by Frege based on the view that the alternative is untenable. The argument is that if thoughts were not shared by subjects, that is, if each person was judging the truth of a different content, '[a] contradiction between the assertions of different people would be impossible [and any] dispute about the truth of something would be futile'. (L2, 133f) Moreover, advances in science would not be possible and worse yet, meaningful communication would be unachievable, since as Frege puts it, 'everyone would remain shut up in his inner world.' (TH, 75) We concluded that for thoughts to be shared, it must be presupposed that thinkers have shared abilities of cognition. This was the basis for distinguishing competent thinking, which we called N-thinking, from any particular case of thinking.

These considerations bring forth an emerging notion of objectivity of thoughts which is grounded in their intersubjectivity. We can state the basis for such objectivity in inferential steps, by laying out two simple arguments:

*Premise 1*: If thoughts were not inter-subjective (shared), we could not share knowledge and make advances in science.

*Premise 2*: We do share knowledge and make advances in science.

*Conclusion1*: Thoughts are inter-subjective.

And,

*Premise 1**: If mental contents belong to individual subjects, they are subjective.

*Premise 2**: Thoughts are shared among subjects (from Conclusion1); thoughts do not belong to individual subjects.

*Conclusion 2:* Thoughts are *not* subjective; hence, thoughts are objective.[11]

To help his readers imagine what is posited as a thought, Frege likens the act of understanding the same thought by different speakers as their grasping an object, such as a pencil. With this metaphor, he explains that a thought is not changing when different people grasp it, but instead *it* makes changes in the subjects' minds. David Bell explains this point vividly:

> [ ] one and the same thought can be the content of indefinitely many different mental act tokens. As these mental acts can be performed by indefinitely many different thinkers, we have here one of the ingredients of Frege's account of the objectivity of thoughts, *i.e.,* of their intersubjectivity.

[11] There are implicit premises of the sort: 'x can either be subjective or objective (if x is not subjective, x is objective)', or that 'contents either belong to individual subjects or they are shared; *i.e.* they are either private or public'.

(Bell 1987, 41)

### 1.4 – The 'Being' of a Thought

If we accept the conclusion that thoughts are intersubjectively objective, it seems that we must *prima facie* accept the existence of thoughts as well. On many occasions, Frege has made remarks to that effect. He states that our thinking does not 'generate' thoughts. He argues that if thoughts only 'existed' when someone was thinking it, we would arrive at the absurd conclusion that thoughts come into existence when we think them, cease to exist and then come into existence again. He likens that to the view that a tree exists only when it is seen. (L2, 148-9) He also describes a causal chain of events, whereby a thought being grasped by a thinker brings about changes in her inner world. Those changes might in turn cause that thinker to act. He calls said process as that of a thought becoming 'actual'. (TH, 77) All these descriptions suggest the existence of an entity, namely a thought, which is dormant unless it is grasped, at which time it becomes an active cause for subsequent events.

On the other hand, it is not clear if Frege refers to these descriptions of thoughts as metaphors used for the purposes of exposition. He states,

> The metaphors that underlie the expressions we use when we speak of grasping a thought, of conceiving, laying hold of, seizing, understanding, of *capere, percipere, comprehendere, intelligere*, put the matter in essentially the right perspective. What is grasped, taken hold of, is already there and all we

do is take possession of it. (L2, 149)

He also adds, 'Of course, all metaphors go lame at some point'.

Frege posits thoughts as contents which we can possibly grasp and share, but these contents do not have to be 'spatial or material or actual'. (*Ibid*.) Given all this, how are we to understand the ontological status of thoughts?

In *Negation*, (NG, 143-7) Frege runs through several arguments aimed at convincing the reader that as long as we are not speaking of fiction, false sentences and questions, express thoughts, just as true sentences do. He explains that in raising a question, one is grasping a thought 'since the sense of an interrogative sentence (question) is always also inherent in the assertoric sentence' and it is on that content (thought) which one must decide. He claims, a question by its very nature separates the act of grasping a sense from judging it. Indeed, if it was not possible to grasp the sense of a question, it would not be possible to answer it. And by the same token, how can we say a sentence is false, if there is no sense corresponding to it?

In the throes of such arguments, Frege also discusses what should and should not be considered as the 'being' of a thought. First, for the reasons given in the previous paragraph, he puts forth that 'The being of a thought does not consist in its being true'. To discuss this claim, he brings an example of the interrogative sentence 'Is 3 greater than 5?' and asks if this question would have a sense, if the being of a thought were to consist in its being true. As well, he asks, 'is a false thought a thought that has no being?' Through

this discussion, he arrives at an explanation for *the being of a thought*:

> The being of a thought may [ ] be taken to lie in the possibility of different thinkers' grasping the thought [expressed by the same sentence] as one and the same thought. In that case the fact that a thought [expressed by a sentence] had no being would consist in several thinkers' each associating with [that] sentence a sense of his own; [that] sense would in that case be a content of his particular consciousness, so that there would be no common sense that could be grasped by several people. (NG, 146)

The arguments Frege presents in support of the claim that not only true sentences, but also questions and false sentences express thoughts are very similar to what was reviewed in the first chapter. There, it was argued that there is a need for positing shared contents for the purpose of discourse whereby thinkers could agree or disagree on the truth values of assertoric sentences. Here, he argues that such discourse also includes the contents of interrogative sentences, whether the relevant answers are affirmative or negative.

The above citation reveals important clues into Frege's views on the being of a thought; First, that a thought's being is grounded in the possibility of its grasp by different thinkers; Second, that there would be no such being if thoughts were to be construed as the content of thinkers' consciousness; Lastly, and implicitly, that if sharing thoughts was not possible, for instance, if there were no thinkers to share thoughts, there would be no reason to posit the being of a thought. These clues uncover the deeply public nature of

Frege's conception of thoughts.

Now, if the *being* of a thought lies in the possibility of its grasp by members of some linguistic community, where a common language is used to communicate and have discourse, what is the status of a thought's *being* for a community of one? In other words, can there 'be' a purely *solipsistic* thought?[12] On the analysis so far, if by 'a community of one' we mean a subject who does not share or exchange common contents with others; that is to say, who never expresses any contents to others, never needs to understand contents expressed by others, and hence, never agrees or disagrees with others, then the answer is no.[13] Frege explicitly considers a solipsistic outlook on thoughts as the ultimate form of *psychologism*. (GZ, XIX) He states,

> If we could apprehend nothing but what is internal to ourselves, then a conflict of opinion, a mutual understanding would be impossible since a common ground would be lacking. (*Ibid*.)

The arguments Frege brings to claim the need for the being of a thought are supported by the need for members of a linguistic community to have common truth-evaluable contents on which they can agree or disagree. At least on the reading of Frege presented here, these arguments are irrelevant when considered for a community of one.

[12] This question was raised by Robert May in his comments on this paper.

[13] Exceptions to this answer are situations where a member of a larger linguistic community has been isolated due to fluke circumstances; such as the aftermath of an apocalyptic event, or a 'Castaway' situation, etc. The assumption is, were this subject ever join the community again, he would be able to have discourse.

In one of his many writings about Frege's philosophy, Dummett (1973, 680-1) articulates a passing comment which I am paraphrasing here. He suggests that Frege only made thoughts abstract entities in order to save himself the 'embarrassment of senses as being something psychological'. This embarrassment becomes 'more acute', Dummett proposes, when Frege claims that judging the truth of sentences is not psychological either. I believe what Dummett finds embarrassing is to say that it is not a psychological act when someone is considering whether a sentence is true or false. However, Frege acknowledges that a subject's *process* of thinking (including judging) is a mental event which may be explained by psychology. However, the *norms* for such thinking which he conceives as logical laws, cannot be explained by psychology. He makes a crucial distinction between 'what is true' which is not psychological, and 'holding as true', which is. This distinction is, in fact, the main theme of his attacks on psychologism which shall be reviewed in much detail in Chapter 3.

On the reading I have outlined so far, thinking, grasping, judging and inferring are all mental activities. Nonetheless, Frege's approach to thoughts is from a rationalist point of view. These activities are thus understood as exercising general capacities of cognition which are presupposed of a rational mind. When we consider thoughts, not in terms of their particular occurrences belonging to particular subjects (not of minds), but as activities of *the* mind, we can see how thoughts are objective while they are also related to thinkers. On this reading, senses are independent of particular acts of thinking, but not

of thinking in general, and the objective norms for grasping thoughts are associated with shared capacities for cognition, not any individual such capacities.

Considering Frege's remark that it is the possibility of different thinkers' grasping the same thought which stands as the basis for the *being* of a thought, we can add the following two points, to substantiate such a possibility:

(1) At least when it comes to the intersubjectively objective account, the ontology Frege associates with thoughts is dependent on the cognition rational subjects are capable of. Thus, if there were no beings with the cognitive capacity to grasp thoughts, then there would be no reason to posit a *being* for thoughts.

(2) The distinction between actuality and non-actuality of a thought is parallel to the distinction between the possibility vs. eventuality of the grasp of that thought. Any number of thoughts have not been grasped as of yet. For example, languages contain the possibility for forming a very high number of assertoric sentences we have not yet considered. A thought has a non-actual being, if it is possible for thinkers to grasp it, but have not yet done so.

In his review of this work, Robert May expresses a worry regarding the explanation of non-actual thoughts presented here. He asks: How could we know of the possible being of a thought unless it is thought by a thinker, in which case the thought would exist and be actual? He explains that we can only understand a thought if that thought is formed, since non-formed thoughts are beyond our cognitive access. But if thoughts are only

formed if they are grasped, then they would be actual thoughts. I have therefore not explained how non-actual thoughts, which are not yet formed, have a being.

To resolve this shortcoming, May points out that the missing cognitive access to non-actual thoughts can be explained by the access subjects have to senses that make up thoughts, as well as to the rules for composing those senses to form thoughts. May explains, since we can assemble the parts of thoughts, given our knowledge of senses and compositional rules, we can then have access in the abstract to all possible thoughts. He also asserts that this sort of access is parallel to knowing parts of sentences in a given language — *i.e.* the words, as well as the rules for assembling sentences, whereby we acquire access to all possible sentences in the abstract. Just as sentences have no existence outside of the assemblage of words in this way, non-actual thoughts are also not yet formed and have no being. On this approach, May indicates, access to thoughts would be a derivative of access to senses.

In reply, I have mentioned at various points of this work, that many languages contain the possibility for forming a very high number of assertoric sentences which speakers may not have yet considered. In the next chapter, I include an example of inhabitants of an island making up a new word for a new object they come into contact with, thereby providing the opportunity for their community to share new thoughts about it. Invoking knowledge of senses coheres with Frege's view that for us humans, thinking is bound up with language. We have access to senses by becoming competent in one or more

languages. Competent subjects grasp and express thoughts by means of the senses of linguistic expressions they have access to.

Nonetheless, May's objection is that we cannot consider the being of non-actual thoughts without properly explicating the role of language in forming thoughts. To do so, he suggests that the being of a thought is *derived* from the being of their component senses, which are shared in a linguistic community. This is a way of explaining the possibility of an unformed thought becoming a formed one, which can then be expressed and shared, and become actual. If we follow this view, we can express the being of non-actual thoughts using a biconditional in the subjunctive mood:[14]

> If and only if it were possible for competent subjects to form (and thus grasp) a (non-actual) thought ***p***, by assembling shared senses using compositional rules (in the right way), then thought ***p*** would have a being.

In this chapter, we discussed how the fact that communities of thinkers ask and answer questions about the world in order to advance science and have everyday discourse, serves as the basis for intersubjectively objective contents Frege calls thoughts. We also found that it is not the particular acts of grasping thoughts that guides Frege's view of their being, but the *possibility* of such grasp, given thinkers' general capacities of cognition. In the next chapter, we shall discuss a different role thoughts fulfill on Frege's

[14] This bi-conditional will also be mentioned in the context of the discussion on timelessness in next chapter.

view, and we shall explain a different account of their objectivity which emerges from that angle.

# CHAPTER TWO – THE VERIDICAL OBJECTIVITY OF THOUGHTS

In the previous chapter we concluded that the *being* of a thought is only understood in the possibility of its grasp by different thinkers. This account was the basis for the understanding of thoughts as contents that are both intersubjective and objective. In this chapter, we shall see that Frege also posits thoughts as objective in a way that does not have any relation to thinkers or their cognition.

Scholars mention two features which are frequently associated in tandem with Frege's notion of thoughts, namely their timelessness and mind-independence. These two features have generally been linked to thoughts' purported ontological status and are drawn upon to advance a *realist* interpretation of them as abstract entities of the third realm. The reading put forth in this chapter is that it is not the thought itself, but rather its truth, that Frege takes as timeless and mind-independent. Although it is easy to ascribe these features to thoughts as objects, I shall bring the related remarks under some scrutiny to see if they bolster the realist interpretation as claimed.

At the same time, this review will bring an account of objectivity of thoughts into view which is distinct from the account covered in the previous chapter. Using textual references, it will be shown that Frege has also considered thoughts as objective in a way which is reliant on their veridicality. Through this examination, by means of considering

these features, a notion which I call the *veridical objectivity* of thoughts comes to view, thereby exposing a dichotomy in Frege's account of thoughts. I shall put forth what I find to be a possible explanation of how these two roles for thoughts can be understood in relation to each other.

### 2.1 – Mind-Independence

Most facts about the world are independent of any observation, understanding, or assessment by rational beings. Likewise, it is surely possible that there are many facts which no rational being has, or for that matter will, ever come to grasp. We can even imagine humans who came to know some facts but their discoveries were never recorded or passed on to later generations. Nonetheless, if there are discoveries to be made, there is still the possibility that the relevant thought can be grasped, or as Frege puts it, can become 'actual'. He states, '[Thoughts] can be true without being grasped by a thinker; and they are not wholly unactual even then, at least if they *could* be grasped and so brought into action.' (TH, 77)

Frege's rejection of idealism is incontrovertible, since he makes it abundantly clear that the truth value of sentences about the world is not determined on the basis of what any given subject perceives or takes to be true. (L1) (TH, 61) (L2, §138) Although he acknowledges that for us humans thinking cannot occur without ideas and that our ideas help us grasp thoughts, he emphasizes that ideas must always be differentiated from

thoughts. (CO, 100f, 105)

Frege presupposes that thinkers exercise cognitive capacities to grasp thoughts, but he sees no relation between those capacities and what is true of objects and events. He explicitly states, 'A fact is a thought that is true', and 'That someone thinks it has nothing to do with the truth of a thought'. (TH, 74) What's more, he asserts, 'We must remind ourselves, it seems, that a proposition no more ceases to be true when I cease to think of it than the sun ceases to exist when I shut my eyes'. (FA, xviii) Remarks such as these are explicable only in light of the claim that it is not the thoughts that exist independent of rational beings, but the reality that those thoughts represent.

We are told that the truth value of a thought is determined by the appropriate object/concept relation between the relevant *referents* of its component senses.[15] (CO, 44) Thinkers may entertain, agree or disagree on the truth value of any given thought without affecting that value whatsoever. Moreover, the truth of a thought is not dependent on a community's common agreement either, since it is possible for a statement that is widely agreed upon in one era of history to be refuted at a later time. On his view, what determines the truth or falsity of a thought ***p*** is reality or the state of the world, and not whether anyone takes ***p*** to be true. (TH, 74)

On my reading, the following argument would sum up what Frege proposes regarding

[15] As have many before me, I shall use the following expressions interchangeably throughout this paper: *bedeutung*, *reference*, *referent*, and *referred-to object/concept*.

the mind-independence of thoughts:

- A true thought, *i.e.* a fact, represents some aspect of the external world.
- The external world is mind-independent.
- Therefore: The truth of a thought is mind-independent.

The following two claims are clearly distinct: (1) Objects, states and events in the world are independent of all rational beings' observation, understanding and assessment, and, (2) The truth-evaluable *contents* which rational beings come to grasp *about* objects, states, and events in the world are true or false independent of their observation, understanding, and assessment. Frege's remarks often match the claim (2) above. However, the way Frege explains the independence of reality from thinkers' beliefs, make it apparent that Frege sees (1) and (2) to be, for all intents and purposes, the same claim. For instance, he states, '[One] cannot recognize a property of a thing without at the same time finding the thought this thing has this property to be true'. (TH, 61) On my reading of him, Frege defends the independence of the external world from mental contents by arguing for the independence of the truth of thoughts *about* the external world from our grasping and judging. Hence, by defending (2), given the nature of our access to the world, he is defending (1).

Frege not only expresses his rejection of *Idealism*, his views also run counter to various versions of *Mentalism*, including *Internalism.* It is however possible to find Frege's claims to be aligned with a version of *Representationalism*, at least on the minimal interpretation

of it as a theory wherein the mind to world relation is explained in terms of intentionality.[16]

The account of the objectivity of thoughts that is suggested in these remarks is different from the one we found at the conclusion of the previous chapter. What we find in these arguments is that it is not a thought's *being* but its *being true* which is independent of our acts of thinking. The notion of Mind-independence here is understood as a feature of thoughts, only when it comes to whether they are true or false.

At this point, let us consider an example. A sentence such as 'Snow is white' expresses a thought that is grasped by many. So far as science reveals, snow, such as it is — ice-water crystals falling from clouds— has been reflecting sunlight with a wavelength range that if visible by the human eye is the color we call 'white'. Anyone's grasp or lack thereof does not change that wavelength range and even when there were no humans around, say the Ice Age, snow reflected sunlight with the same wavelength.[17] The claim is that, if a thought is true, it is true independent of anyone taking it to be so (and same goes for falsity).

On this understanding of mind-independence, thoughts need not be extant objects. Let us illustrate the event of grasp and its relation to thinkers by way of the following example.

[16] The claims in this paragraph are only mentioned in passing and are not defended. For some discussion on this point, see Chalmers 2004 and Lycan 2019.

[17] There are possible ways that things could have been otherwise. For example, humans could have evolved differently such that their eyes would not see the color which we now call *white*, or wavelengths may have been different if the atmosphere was not composed of the same mixture of gases, etc. Such scenarios are ignored for the purpose of this example.

Imagine that the residents of an island have never seen or heard of snow, but that through some strange weather patterns, they suddenly get a few inches of snow precipitation for the first time. Suppose that excited by the sighting, the islanders make up a name for the stuff and eventually come to express the thought 'S*now is white!*' (Indeed, this may be the order of events when many discoveries or scientific breakthroughs are made.) The received interpretation of a Fregean account of such a scenario is likely to be that this community comes into a relation with an *extant entity*, namely the thought that 'snow is white'.

This interpretation might be the reason some reject the notion of sense, thinking that the more plausible explanation is that the community comes into a relation with the object itself, in this case snow, rather than with the sense of the word 'snow'. But even those who are not followers of Frege would agree that subjects must often express and communicate statements about discovered objects with others. Such a need for instance would prompt the islanders in this story to produce a sentence like 'snow is white'. On the reading presented so far, the true thought expressed by 'snow is white' is the intentional representation of reality. The idea invoked in the passage above is that a thought such as this is actuated by the islanders' ability to exchange the relevant questions and assertions *about* their discovery.

Frege posits thoughts to do the heavy lifting in explaining our epistemic relation with reality. He acknowledges that human beings come to know about objects through

perception, but on his view, those objects are represented to us as contents. These intentional contents are in turn what we share in thinking, grasping and judging. They can be exchanged amongst us both as opinions and scientific knowledge.

Frege does not describe the genealogy of thoughts, only that they get passed on through history and are true or false based on nothing but reality. What is notable in this analysis is that the feature of mind-independence which is crucial to the realist interpretation of thoughts comes down to the mind-independence of the reality they represent.

**2.2 – Timelessness**

In the last section, it was argued that Frege explains the assertion that reality is independent of subjects' cognition by way of putting forth the claim that thoughts *about* reality are true or false independent of that cognition. The view that true thoughts represent reality is crucial in understanding another feature that Frege ascribes to thoughts. In this section, we shall see that neglecting the relation Frege postulates between thoughts and reality can lead to a mis-construal of timelessness of thoughts which mirrors the case with mind-independence.

Let us start by considering Frege's outlook in the passage below:

> A law of nature is not invented by us, but discovered … so the laws of nature, and likewise those of mathematics, <u>have held good at all times</u> and not just since they were discovered. This shows us that these thoughts, if true, are

> not only true independently of our recognizing them to be so, but that they are independent of our thinking as such. (L2, 144-5, underlined for emphasis)

This is a sample of many remarks where Frege refers to the truth of laws of nature and mathematics as timeless. He observes that any such laws, whether or not they are discovered, 'hold good' at all times.

Furthermore, Frege makes it clear that timelessness can only be ascribed to the truth of a content which is in every way a *complete thought*. He asserts, 'Only a sentence with the time-specification filled out, a sentence complete in every respect, expresses a thought. But this thought, if it is true, is true not only today or tomorrow but timelessly'. (TH, 76) (L2, 135) We can consider some examples to give us a better view of what it means to have the time specification of a sentence 'filled out'.

In some sentences, the content expressed by the sentence clearly includes the time; e.g., 'I am writing now', includes the time of my writing. Aside from cases where the time of utterance is specified, Frege was also mindful of tenseless sentences. These are cases where the present tense is used to, as he puts it, 'eliminate any temporal restriction, where timelessness or eternity is part of the thought'. In such instances the sentences may be expressing laws of nature or mathematical truths. (TH, 64) In addition, there are sentences which contain an explicit time-stamp. For instance, Frege states, 'If it is true that I am

writing this in my room on 13 July 1893, whilst the wind howls outside, then it remains true even if everyone should later hold it as false." (GZ, XVII) And as was stated, the component of time must be there for the thought expressed by an assertoric sentence to be complete.

Frege explains that if someone would bring a counter-example to the timelessness of thoughts such as, 'The total number of inhabitants of the German Empire is 52,000,000', it is clear that the time-determination is missing and must be added. For example, we add, 'at noon on 1 January 1897 by central European time'.

Other cases for the specification of time may require a range. For example, the sentence, 'There have been at least five different Ice Ages throughout Earth's history', specifies that during at least five periods within a longer span of time, Earth's history, the phenomenon called the 'Ice Age' has occurred. The point is that any sentence can only express a complete thought, if either explicitly or implicitly, it contains the time associated with its assertoric content. If so, then, such a thought has the same truth value either *through time* and/or *timelessly*. In one crucial respect, namely its association with the *truth* of thoughts, this maxim is akin to what we discussed regarding mind-independence. This interpretation puts remarks such as the following into a sharper perspective:

> It is of the essence of a thought to be non-temporal and non-spatial. In the case of the thought that 3+4=7 and the laws of nature there is hardly any

> need to support this statement. If it should turn out that the law of gravitation ceased to be true from a certain moment onwards, we should conclude that it was not true at all, and put ourselves out to discover a new law. (L2, 135)

Again, there are many remarks confirming the reading that it is the *truth* of laws of nature and mathematics which Frege considers timeless.

An added note regarding false thoughts may be mentioned here. Frege states, '…the thought is either true, in which case it is always, or better, timelessly, true, or it is false and in that case it is false without qualification.' (L2, 147) The statement that falsity comes with no qualification but that truth is timeless may be noteworthy here. This nuanced claim can also be explained by the reading that Frege expounds on the atemporality of what obtains in reality, by ascribing atemporality to the truth of the thoughts representing that reality. We shall say more about this point after considering an objection.

One objection to the reading of timelessness as being a feature of the truth of any thought instead of the *being* of thoughts is the following. If we can conceive of a time when the sentence expressing ***p*** contained names which did not yet refer to an extant object, how can we then say that the truth of ***p*** is timeless? For example, how is the truth of the sentence 'Bert is absent-minded' timeless, when Bert (*de re*) was born in the 1970's?[18] A

[18] I am thankful to Bernard Molyneux for bringing up this point and the example that goes with it.

related concern is to also understand timelessness of the truth of a thought ***p*** at a time when there is no one there to grasp it. We shall discuss these worries by considering the truth of the sentence 'Bert is absent-minded' in three different scenarios.

First, let us look at the case where this thought is grasped in the future. It is not necessary for Bert to stay absent-minded for this sentence to be timelessly true. The time at which it was true is contained in the thought as specified by the copula 'is'. Thus, if in the future, life's experiences turn Bert into the most focused individual, the thought stated above with its specified time would remain true. This can be understood as the sentence containing a time stamp, also expressible by the sentence 'Bert was absent-minded at ___ time', where the blank would be filled in with the time specification. Related to this sort of specification, we see that Frege mentions sentences containing indexicals, where he asserts that all the information must be contained in the thoughts expressed. He states,

> If someone wants to say today what he expressed yesterday using the word 'today', he will replace this word with 'yesterday'. Although the time is the same its verbal expression must be different in order that the change of sense which would otherwise be affected by the differing times of utterance may be cancelled out. The case is the same with words like 'here' and 'there'. (TH, 64)

The second case of considering this example is in the past, when Bert (*de re*) was not born yet. The explanation is very similar to the future case. The thought as expressed today

contains the time of utterance and it is *this* thought that must be considered before Bert's birth. Just as it was cited for indexicals, the expression of the sentence at that time in the past, would be a sentence like the following: 'There will be a specific person named *Bert* and that person will be absent-minded in such and such a time'. Knowledge of future events are of course not at issue here. The claim is only that if this thought is true at the specified time, the timelessness of its truth would not be considered according to the time of encountering it, but according to the time of its being true.

For our last case, we shall consider a time when no rational beings were around to grasp any thoughts, much less about Bert. The question is, how can the truth of a thought be timeless if on the understanding of the *being* of a thought presented in the last chapter, the thought itself has no being. In other words, how can the being of a thought be defined by the possibility of being grasped by different thinkers, but the truth of that thought be timeless and independent of thinkers' grasp? Frege's claim about both the mind-independence or timelessness of a thought such as 'Bert is absent-minded', is a claim about the independence of the reality of Bert's current absent-mindedness from any thinker ever considering, knowing or even thinking about it.

On this point, Frege explicitly remarks on the timelessness of truths which are not yet recognized:

> The astronomer can apply a mathematical truth in the investigation of long past events which took place when – on Earth at least — no one had yet

> recognized that truth. He can do this because the truth of a thought is timeless. (TH, 74)

As I see it, this remark suggests that Frege's idea of timelessness of any thought is not defined in terms of the existence of that thought, but the state of objects and events it represents. The link between the truth of a thought and reality is the basis for the timelessness of its truth, since the reality it can *possibly* represent to thinking minds is timeless.

Frege adds that when subjects grasp a true thought and their grasp and recognition causes them to act, the thought does not change; neither does the timelessness of its truth. There are still others who can possibly grasp that same thought. (L2, 150) Frege thus recognizes a domain of the 'objective but non-actual'. (GZ, XVIII)

If we accept the finding that a thought's being is defined by the possibility of its grasp by competent thinkers (or, in the case of non-actual thoughts, the possibility of being formed and thereby grasped by competent thinkers), then a thought representing the state of affairs in a distant past when there were no thinkers to grasp it, can be understood as non-actual until it is grasped (or in some cases formed) by beings with the cognitive capacities to do so.

Furthermore, thoughts are composed of senses which are linguistically expressed. Without a common language, no thought can be shared whereby it can be judged and

held as true or false. What is true timelessly, can be held as true or not, but only if it is expressible by language. What's more, the events and objects in the past, present, or future are not affected by the *being* of the thought representing them. Only subjects who have developed languages to share those thoughts about the world are affected, since they are the ones who benefit from the being of truth-evaluable contents, when they share them by means of language.

In the last chapter, the being of non-actual thoughts was stated using a bi-conditional statement in the subjunctive mood, which can be summarized here as: If and only if competent subjects could possibly form a (previously unformed) thought ***p*** in the right way, then ***p*** would have a being. Adding the reading of timelessness of the truth of thoughts presented in this chapter, let us consider the following cases:

• For a non-actual thought whose component senses pick out referents which are only extant for a temporary period of time, or the thought itself can only be true in a finite period of time, that thought, complete with its time-stamp, could still be formed, given the appropriate senses could possibly be at the disposal of competent subjects at some point or duration in time.

• For the case of a thought that represents the state of affairs at a time when no one was there to grasp the thought, again, if it is possible for rational beings to form such a thought at some point or duration in time, that thought will have a time-stamp and thus,

its truth will be timeless.

• For a state of affairs which are not representable to us, which is to say such reality cannot be conceived, imagined, or perceived, and no thought, either mock or proper, can thus be formed, then there is no being of a thought to speak of. It is only contents which are within the realm of possibility of being grasped (or formed) that can fulfill their function as truth-evaluable contents.

The reading presented so far in this chapter is that the representation of objects and events in the world by means of true thoughts is a central part of Frege's outlook. As is the case with mind-independence, the timelessness Frege ascribes to thoughts is nothing more than ascribing it to the reality which is represented by their truth. Frege clearly explains, 'All specifications of place, time, and so on, belong to the thought whose truth is at issue; *being true* itself is placeless and timeless.' (GZ, XVII) The relation between thoughts and reality, vis-à-vis their intentionality, bears most prominently on the mind-independence and timelessness as features ascribed to the truth of thoughts.

**2.3– Veridical Objectivity**

We stated above that the usual interpretation of Frege as a realist pertains to his view about the existence of a variety of abstract entities, at the center of which are thoughts, in a realm which is neither physical nor mental; a *third* realm. Such an interpretation easily directs his readers towards a Platonist understanding of his notions, within a strictly

metaphysical framework. The received reading has been that it is thoughts themselves, as *extant entities*, that are timeless and mind-independent, but on the reading we outline here, it is the truth of thoughts that is timeless and mind-independent, while thoughts themselves are contents that are defined as being possibly graspable by subjects. We shall be discussing the contrast between these views in more detail in the last section of this chapter. The claim is that on the interpretation put forth here, a deeper understanding of the notion of thought is gained whereby what is at stake in Frege's outlook can be brought to light.

It was explained that as Frege sees it, our access to reality is indirect. As he explicitly states, it is only by means of the sense that we can relate a proper name to an object. (CSR, 135) When we see an object, our visual experience is 'bound up with thinking and judging'. (L2, 149) And as was mentioned in the first chapter, we express and grasp thoughts as that 'non-sensible something' the cognition of which provides us access to the physical (and still more indirectly to the mental) realm. (TH, 75) Frege is therefore positing thoughts as contents which provide subjects cognitive access to the world, which is to say that acquiring any sort of knowledge requires us to grasp, judge, and infer thoughts.

Let us first interject that Frege differentiates between his use of the word 'judgement' and its ordinary usage where a judgment is an act of judging— 'as a leap is an act of leaping'.

(NG, 126f) Although he occasionally speaks of 'making a judgment' (L2, 2) (IL, 185) or 'the act of judgment' (TH, 62) or defines judgment as admission of truth (SR, 34f), he emphasizes that the word 'judgment' simply stands for a sentence with the True as its referent. The differentiation stems from the fact that judging is an act involving a mental process which occurs at a particular time and place, with a judging subject as its owner, whereas a judgment is 'not an act performed by a definite man at a definite time, but something timelessly true, even if its being true is not acknowledged by any human being'. (TH, 62)

It is also important to note that for Frege, *being true* must not be conflated with *holding as true.* This distinction will be discussed in detail in the next chapter. For now, we should note that Frege acknowledges that subjects' thoughts may change during the course of time. However, he maintains that a thought remains either true or false, even if subjects hold them to be true at one time and false at another. (L2, 145)

Since thoughts are shared by speakers, the act of thinking belongs to psychology, but thoughts do not. Frege states:

> Truth is not part of a thought. We can grasp a thought without at the same time recognizing it as true - without making a judgement. Both grasping a thought and making a judgement are acts of a knowing subject, and are to be assigned to psychology. But both acts involve something that does not belong to psychology, namely the thought. (ND, 273)

Earlier, we reviewed that for Frege human beings' beliefs do not determine the truth of thoughts even if they have the rational capacities needed to grasp and judge them. As well, it was put forth that Frege's view of thoughts as timeless pertains to the timeless truth of any thought that represents reality. We know also that a competent thinker can grasp a thought and be in the kind of relation which is required to take it as true or false, but that such an occurrence does not affect the truth value of that thought whatsoever. In sum, thoughts about objects, states, and events in the world are true or false independent of our beliefs, as well as independent of our acts of grasping and/or judging those thoughts. We can formulate this logically by stating that it is not the case that if a thinker takes (or believes) $p$ to be true (or false) that $p$ is then true (or false), as stated below:

$$\neg \{Bp \rightarrow p\} \quad \& \quad \neg \{B\neg p \rightarrow \neg p\}$$

This important part of Frege's outlook marks him as a *robust realist* (to use a *Quinean* term). What Frege brings forth however, which was not considered before him, is that an aspect of the world at any given time is represented to beings as such by a true thought and the negation of it by a false one. The contents Frege calls thoughts, as I have argued, are purported to be contents we grasp which are true or false depending on whether they represent or misrepresent some aspect of the world. These contents do not belong to individual minds but are sharable amongst minds by means of language.

A thought does not belong to and is not created by subjects. Rather, it is linguistically expressible and understandable by different speakers. When rational beings share a language, they also share thoughts which can be expressed by that language. This is the sense in which Frege calls a thought as 'something impersonal'. He states, 'If we see the sentence '2 + 3 = 5' written on a wall, we have no difficulty at all in recognizing the thought expressed by it, and we do not need to know who has written it there in order to understand it.' (L2, 146)

The truth of any thought is determined by the relation between the referents of its components. Moreover, judgments (*i.e.*, true thoughts) have an objective status in that 'in every judgment, no matter how trivial, the step from the level of thoughts to the level of reference (the objective) has already been taken.' (SR, 34) The notion of objectivity that emerges from the timeless and mind-independence of the truth of thoughts is thus grounded in the independence of reality from subjects' cognition. We shall call this notion the *veridical objectivity* of thoughts, since it is based on the claim that the truth of a thought is determined by whether or not it is veridical in its representation of the relevant aspect of the world.

### 2.4 – Dichotomy of Objectivity

On the account of objectivity of thoughts presented in this chapter, the role of thoughts is explained as intentional truth-evaluable contents; *i.e.* contents which represent the

world and as such, are true or false independent of thinkers' cognition. The grounds for the objectivity of thoughts in this role, as we explained, is the veridicality of that representation. We thus differentiated this account of objectivity of thoughts, their veridical objectivity, from their intersubjective objectivity, explicated in the last chapter.

To review, although our minds are, at least in principle, capable of grasping thoughts, the truth of any thought is independent of our grasp or any rational exercise of the mind. We grasp a thought by way of understanding senses of linguistic expressions, given our competency in one or more languages. If all relevant knowledge is provided to rational beings, they can be in the necessary relation to judge or infer the truth value of a thought once they grasp it. This is dubbed by Frege as 'coming into the right relation with a thought'. Being in the right relation to true thoughts means we are in indirect relation to the world (reality) and what obtains in it. Reality, however, is what it is, independent of anyone's grasp or beliefs. Let us now sum up the dichotomous account of thoughts which is the reading of Frege offered in this work.

On the intersubjective account of objectivity, thoughts are explained as contents which are in principle graspable and thus dependent on subjects' shared capacities of cognition. We said that languages contain the possibility for forming a very high number of assertoric sentences we may not have yet considered. For that reason alone, it is possible that a thought may remain *non-actual* until beings grasp it. The method of exposition Frege chose for explaining the intersubjective objectivity of thoughts was to say that it is

possible for a thought to be non-actual but *be* a thought, if it is possible for thinkers to grasp it, even if they have not yet done so.

On the veridical notion of objectivity of thoughts on the other hand, whether any thought is true is objectively determinable based on whether that thought is drawn from reality, independent of what thinkers, competent or not, grasp or take to be true.

Now, if I am right in understanding Frege's arguments in support of both these two accounts of objectivity for thoughts, it means that there is a dichotomy in how thoughts should be understood. This dichotomy has left his readers debating over the grounding for Frege's notion of a thought. One can observe that on the intersubjective understanding, the explanation starts with what speakers of a language grasp. The idea there, is that they need to be able to share truth-evaluable contents, which is to say that the contents they grasp need to be the same ones, in order to be able to agree or disagree on different matters relating to the world. Hence, the notion of intersubjective objectivity of thoughts has an epistemological grounding. On the other hand, the veridical understanding seems to begin with whether the world is well-represented by a thought in the relevant way or not; which is to say, whether a given thought is true or false. From this perspective, the role of thoughts as the representation of reality is such that their veridicality takes center stage. This account would therefore be independent of any epistemic understanding of thoughts, but only dependent on the way the world is.

There are thus two different roles for thoughts. Thoughts are contents which are

expressible by language and subjects can share them. Alternatively, thoughts are contents that are true or false on the basis of whether they represent reality veridically or not. These two roles do seem to be completely distinct and separate from each other. Yet, as Frege explains it, the same contents are seamlessly performing both roles.

Frege believes that our access to the external world, is indirect through our grasp of thoughts. Our review of his views about the intersubjectivity of thoughts and the presupposition of competent subjects being capable of correct thinking (or N-thinking) by using faculties of cognition which rational thinkers generally possess, show that he is a *rationalist*. He explains that grasping a thought is a mental process, and yet it cannot be understood from a purely psychological standpoint. He presupposes that we are capable of understanding, judging and inferring thoughts. In doing these mental activities, as we shall explore in the next chapter, he presupposes that we are capable of following the laws of truth*, i.e.* logic.

When one grasps the law of gravitation for instance, it is a content the truth of which is completely independent of anyone thinking it. Frege explains that in our grasp of it, 'something comes into view whose nature is no longer mental in the proper sense, namely the thought'. However, he leaves the matter unresolved as to why and how the mind is capable of understanding such contents which on his account are external to it. He states, 'It is enough for us that we can grasp thoughts and recognize them to be true; how this takes place is a question in its own right'. (L2, 157) It is in fact this very question which

leaves his readers unsure of the relation he proposes between the epistemological and metaphysical grounding of his notions. That is why it is important to see what this relation entails and how the import of Frege's views may not be understood properly if we suffice with calling him a Platonist and be done with it.

### 2.5– Platonism or not Platonism

Although the reading that Burge (1992)[19] presents of Frege's remarks on knowledge of the third realm highlights a Platonist interpretation, he also puts forth an important question that he believes has gone unanswered for too long. Burge attributes the absence of a clear answer to his question, to Frege's lack of interest in elaborating on a traditional approach. In this section, I shall discuss how Burge is ambivalent about how far to take the Platonist line he contributes to Frege. As well, I shall contrast Burge's explanation with the view I have put forth so far.

In his paper, Burge (1992) brings evidence that Frege is a Platonist in the proper sense of the term.[20] He sees that doctrine followed not only by positing thoughts and other notions as 'genuinely existing entities', but also regarding them as 'fundamental'. Taking those entities as fundamental, Burge maintains, provides the explanation for the

[19] Given that the referenced paper (Burge, Frege on Knowing the Third Realm 1992) has been heavily cited in this section, I have not included page numbers for every citation.

[20] Note that Burge's explication of Frege's Platonism spans over many of the topics we are not discussing in this paper—*e.g.,* the nature of numbers, as well as self-evident truths. Nonetheless, Burge includes thoughts, or as he puts it, thought contents, in the category of entities that are non-spatial, non-temporal, causally inert, and have a mind-independent existence.

intersubjective objectivity of science and communication, rather than the other way around. He stresses that in most of the body of his work, Frege has posited thought contents among the unqualified members of the third realm and held both logic and sciences as being 'committed' to the entities in that realm. (1992, 633)

Burge also asserts that according to Frege, third realm entities which include thought contents, are not 'in any way dependent on something mental, linguistic, [or] communal', and are therefore not 'derivative, instrumental, or otherwise second-class'. He emphasizes that for Frege, 'someone's thinking a thought has ''nothing to do'' either with its truth or with the thought content', and thereby declares the dictum: 'Independence is independence'. (1992, 641)

The view that takes the intersubjective objectivity of 'cognitive practices' to be grounded in third realm entities is the staple view for a Platonist interpretation of Frege. In many of his writings, Burge has been the messenger for that interpretation. Nonetheless, there are also subtle doubts expressed alongside the strict reading we just reviewed. He states that many of the views he outlines as the Platonist picture of Frege's philosophy, may be put forth in a non-Platonist theoretical framework. He even goes as far as saying some idealists may say such things and that Platonism 'has no monopoly' on positing an objective status for non-spatial, atemporal entities. He does not equivocate on his interpretation of Frege as a Platonist, but in remarks like the following, seems unsure about how seriously Frege's readers should regard that doctrine in understanding his

notions:

> Although I think that Frege maintained a metaphysical view about numbers and other such entities, I do not believe that this view dominated his thinking. His is, for the most part, the relaxed Platonism of a mathematician who simply assumes that there are numbers, functions, and so on [...] his epistemological views are complex, and involve not only Platonic elements, but elements not at all associated with traditional Platonism. (1992, 636)

If the reader finds it challenging to unite the afore-stressed metaphysical notions of unqualifiedly extant fundamental entities of the third realm, with a relaxed Platonism which allows complex epistemological views with vaguely non-platonic elements, rest assured, Burge is aware of the problem. He articulates the matter by asking:

> The problem is that of understanding how reason alone could justify one in believing that a thought is true, when the thought has a subject matter that is as independent of anyone's thinking as Frege indicates it is. How could mere reasoning give one any ground for believing that a realm of entities is one way rather than another, when that realm is so independent of that reasoning? (1992, 634)

These legitimate questions can be asked of anyone who supports a Platonist reading of Frege. Indeed, even more 'fundamental' than the relation between those entities and our

reasoning, is the relation between them and our intersubjectivity. As was asked in the last paragraph of the section before this: How is it that thoughts (as third realm entities) are graspable? Should we be satisfied with deeming this ability as accidental? Even if Frege sets aside dwelling on them, we should not take these matters as given, with no explanation. I am thus in agreement with Burge when he emphasizes the need to address these questions instead of neglecting them.

In his efforts to find a possible answer, Burge is focused on his negative arguments, using textual evidence to refute those who claim Frege's epistemological assessments have any sort of practical or linguistic basis. He states that Frege simply could not add anything to the traditional reply to these questions, so he must've decided to stay silent on them. He opines:

> Questions of "access" to the third realm are on reflection seen to be misconceived. [...] Why was this line not more prominent in Frege's philosophy? [...] He accepted the traditional rationalist-Platonist line about the relation between reason and primitive truths. He did not think it needed substantial elaboration. (1992, 649)

This analysis may not be inaccurate, but it still leaves Burge's readers under-whelmed. In the cited paper, Burge convinces readers that the questions he brings up regarding the incoherence between the metaphysical grounding for thoughts and their epistemological

aspects, are appropriate and important. He asserts that one should not 'short-circuit' these questions. However, he gives the surprising response that 'There is no there there'. Let us take heart in Burge's parting statement, when he says: 'I think [this line of inquiry] may be worth developing.' (*Ibid*.)

Many people, including myself, ponder as to whether Frege intended to say this or that, whether he meant such and such, and if so, why did he not just say so, etc. Burge may indeed be right about Frege's state of mind. Who knows? Frege might even have thought of himself as a Platonist. So then where do I part ways with the reading of a very distinguished Frege scholar?

On the matter at hand, namely his notion of *thought*, I am interested to see how and to what end, the two roles I have thus far described and shown as both explicit and implicit in Frege's arguments for that notion, can be played by the same contents.

Burge goes to some length to explain the Platonist interpretation that thoughts are entities that are absolutely independent of our minds. The arguments at the beginning of this paper showed that if it weren't for the need for subjects to agree or disagree on the truth of these shared thoughts, there would be no need for sharing them. If at the heart of Frege's endeavors is to argue that it is the intersubjective objectivity of thoughts which makes it possible for science to go forward, then it is no small matter that thinkers have the ability to grasp them. Science cannot go forward without our shared faculties.

To remind the reader, we found that thoughts are objective on one hand, in that they are sharable by competent thinkers, and on the other hand, in that they are true or false timelessly and independently of any subjects taking them to be so. Are these two accounts of objectivity related to each other? As I explained earlier, they cannot at least be directly related, since in one role, subjects' cognitive capacities are crucial to grasping thoughts, but in the other they do not have anything to do with the truth of a thought. It is worth asking however, why and by what means these two unrelated roles become intertwined in thoughts.

My suggestion is not the same as the views which take Frege's notions to rely on human practices, although, it is possible to take my reading in that light. I must clarify what is and isn't implied here. I have on occasion mentioned that it is by means of language that human beings are able to express and grasp thoughts. This does not contradict Frege's own remarks. [*Cf.* (SR, 27f)] Nor is it in contradiction with Burge's view that Frege considers thoughts as more fundamental than language and practice. Frege states, 'A thought which to begin with was only suggested by an expression may come to be explicitly asserted by it. And in the period in between different interpretations will be possible.' (L2, 152-3) In this and other remarks, it is clear that a thought as a truth-bearing content is primary to the language which expresses it. That is in line with my reading that language is merely a tool of expression of contents which can be true or false. Those expressed contents can represent or misrepresent the world to subjects.

I have also submitted that if thoughts are not graspable, Frege's arguments for their intersubjectivity will not hold up. In that sense, the intersubjective objectivity which Burge finds Frege to take as given, is implicitly dependent on our shared cognitive faculties. I have distinguished particular acts of thinking from competent thinking in order to clarify that when Frege states that thoughts are not dependent on thinkers' grasp, he means on any particular thinker or thinkers' grasp. At the same time however, the dependence of their intersubjective status on the cognitive and rational faculties that subjects generally share cannot be denied.

Moreover, I find it clear as day, as Burge does, that there is no relation between the truth of a thought and our capacities. Any view that takes our 'practices' as the grounding for thoughts, will most likely run contrary to the account of veridical objectivity I have suggested.

Although Burge mentions both 'intersubjective objectivity' as well as 'scientific objectivity' in his paper, the latter of which I call 'veridical objectivity', he does not dwell on the important distinction between these two accounts. I, however, find such a distinction crucial to seeing the important problem Burge spoke about from the appropriate perspective. Without such a distinction, we cannot tell that intersubjective objectivity depends on shared cognitive capacities, whereas veridical or scientific objectivity does not. Frege expounds on both these roles for thoughts.

I put forth that the only way it can be explained how thoughts can play both roles, is to understand them as intermediary contents in our indirect relation to the world. This view of thoughts has been explained by Frege on a number of occasions cited in the first two chapters. Through the expression of thoughts by means of language, we are in a position to communicate about reality and thereby, gain scientific knowledge. In other words, our only way of *knowing* if the world is this or that way, is by knowing whether the relevant thought is true. Reality, *i.e.* what obtains in the world, is not dependent on the being of such contents; *we* are.

Moreover, the world, represented by means of graspable contents, does not depend on our cognition, which is why the truth of a thought does not depend on our cognition. However, since we can only understand anything obtaining in the world, by grasping the relevant thought, we must rely on our cognition of the contents which put us in relation to the world. Thus, it is not the world that depends on a thought's being and there is no more of a function for that being than the fact that they are our shared means for accessing knowledge about the world.

If we suffice, in our interpretation of Frege, with the outcome: 'Frege is a Platonist' and leave things there, we have neglected what is at stake in his notion of *thought*: that if thoughts are purported to have a being, it is only to play both of their roles for our benefit.

The reading I have put forth thus differs in an essential way from traditional Platonism, at

least concerning thoughts. The direction of explanation, on the Platonist view, starts from these 'fundamental' third-realm entities, called thoughts, to our cognition and reasoning. On the reading here, the direction of explanation starts from what obtains in the world, to that cognition and reasoning, but the route must go through truth-bearing contents in order to reach us. That is why, as I have argued, these contents may be independent of particular acts of cognition and reasoning. However, in order to have any function at all, thoughts must be graspable by competent subjects who have shared cognitive capacities, so that it is in principle possible for rational beings to go beyond their experientially-acquired ideas, to be able to gain *epistemic access* to reality.

# CHAPTER THREE – LAWS OF THOUGHT

*Psychologism* is a term used for the outlook that notions about truth and logic stem from, or are associated with, psychology. More narrowly, the term refers to the view that logical laws are either wholly or partially established on the basis of psychological laws. This view is known to have been inspired by Mill in his *Logic* (1843) and later solidified in the writings of psychological logicians like Erdmann (1870). Frege consistently opposes any admixture of psychology with logic and puts forth arguments to show that logical norms are established independent of how and what subjects think. In this chapter, I will review those arguments, discussing first a distinction which goes to the heart of Frege's outlook on the separation of psychology and logic. Following that review, I list a number of anti-psychologist arguments brought forth by Frege and also by Husserl in his *Logical Investigations* (1901). Husserl who corresponded with Frege on the topic, is also well-known for his rejection of psychologism, although some may find him at times equivocal. Once these arguments are briefly reviewed, I shall attempt to show how Frege's views on logical laws ties in with the dichotomous view of objectivity discussed in the previous chapters.

## 3.1 – Frege's Central Distinction

Frege strongly cautions his readers about avoiding certain conflations and misunderstandings in construing logical norms throughout his remarks on the topic. His

arguments, particularly in a key passage of *Grundgesetze* have a distinct centerpiece; namely, the repeated differentiation between *what is true* and *what is held as true,* and the implications of that distinction on the separation he draws between logical and psychological laws. Here are two sampled remarks on said distinction:

- [⋯]being true is quite different from being held as true, whether by one, or by many, or by all, and is in no way to be reduced to it. [⋯] I understand by logical laws, not psychological laws of holding as true, but laws of being true. (GZ, XV)

- we shall not trouble ourselves with asking how we actually think or arrive at our convictions. It is not the holding something to be true that concerns us but the laws of truth. (L2, 157)

As was spelled out in the first two chapters, for Frege the question of truth is one that involves the realm of referents, objects, the real; which is to say that on his view, *truth* is decidedly not determinable in the realm of the mental. (CSR, 133) In that vein, logical laws should not be understood as describing relations between what he calls *ideas*, no matter how those ideas help our thinking.

On the other hand, Frege states that logical laws are *laws of thought*, and that they apply to all thinking whatever the subject matter. This naturally leads us to wonder whether this

claim is in contradiction with the claim that logic does not apply to norms for 'holding something to be true'. Afterall, we are told, 'logic is a normative science, a science which gives us the answer to the question, 'How must I think in order to reach the goal, truth?''. Frege dispenses with this confusion by pointing out the ambiguity in the word 'law. He states:

> The ambiguity [Doppelsinn] of the word 'law' is fatal here. In one sense it states what is, in the other it prescribes what should be. Only in the latter sense can the logical laws be called laws of thought, in laying down how one should think. (GZ, XIV)

The confusion arising from these two senses of the word 'law' can be quite pervasive; it can even cause conflation in how we understand claims as straightforward as, 'the norm X applies to all thinking', or 'Y is how we ought to think'— essentially the whole gambit of the language of normativity. Frege acknowledges the pervasiveness of this ambiguity to the point of mentioning that we may even drop the expression 'laws of thought' as a label for logic in order to steer clear from the entanglement it causes. (L2, 157)

Husserl articulates this ambiguity as well, at first in passing (1901, §14), but then as a prominent refutation of psychologism credited to a few philosophers, not mentioning Frege. He states:

> Of course the various kinds of presentations, judgements, syllogisms etc.,

> also have a place in psychology as mental phenomena and dispositions, but psychology has a different task in regard to them than logic. Both investigate the laws of these activities, but 'law' means something quite different in the two cases. (Husserl 1901, §19)

One particular instance where Frege's own claims can be misinterpreted due to this very ambiguity concerning laws of thought, is in the reading of this remark:

> 'Any law that states what is can be conceived as prescribing that one should think in accordance with it, and is therefore in that sense a law of thought.' (GZ, XV)

In this claim, Frege can be interpreted as saying that any law, whether a descriptive one or not is a law of thought in a prescriptive sense. Psychological laws also state 'what is'; Can they not be conceived as prescribing that one should think in accordance with them? Why then, shall we not go so far as to say that a psychological law is also a law of thought?[21] As I shall explain, we must be careful in understanding what Frege has in mind in the remark above. Let us say we can state a *logical norm* ***X*** for thinking in this way:

> ***X:*** For any thought ***p*** , if ***p*** is true, one ought to think in accordance with ***p***.

Let us also say that there is a psychological law ***PL*** which is true. Then, by norm ***X***, we

[21] An argument with the same outline was put forth by Jim Hutchinson in a paper he presented at APA 2021 Eastern conference.

ought to think in accordance with ***PL***. However, does 'thinking in accordance with' ***PL*** mean that ***PL*** is a logical norm? This is clearly not what Frege has in mind, since if we take any truth, for instance, that 'I am writing now', following the logical norm ***X***, I ought to think in accordance with it. It is however clear that this truth is not a logical norm for thinking. What Frege must have in mind about a simple truth such as this is more clearly along these lines:

***X'***: For any thought ***p***, if ***p*** is true, one ought to judge ***p*** as true.

This norm can be understood as applying to a psychological law as it applies to any other truth. Frege articulates the point in this way:

> We could, with equal justice [to psychology], think of the laws of geometry and the laws of physics as laws of thought or laws of judgement, namely as prescriptions to which our judgements must conform [...] To explain how thinking and judging take place is certainly a feasible undertaking, but it is not a logical one. (L2, 157-8)

Truths about geometry are not truths about thinking while truths of psychology *can* be. Yet truths about geometry are no less prescriptive than psychological laws in the sense that Frege has in mind.

In order to generalize the norm ***X'*** as a logical norm for thinking, we could state it in this

way:

***LN:*** One ought to think (judge) in a way that one's beliefs are true.

Frege takes the normativity of logic to be analogous to that of ethics. We can thereby use the analogy: 'I ought to act in a way that my actions conform with what is good.' This is clearly distinct from saying that actual thinking always follows laws of logic, any more than the behavior of people always agrees with moral laws. (L2, 157)

On Frege's view, *the way* subjects follow a logical norm is not itself a concern of logic. In other words, when we say 'One ought to think in a way…' in ***LN***, Frege has not specified what that *way* might be, nor does he maintain that logic is concerned with the question of what it takes for us to believe what is true; only that *one should think in a way that one holds true beliefs*.

The central distinction Frege makes between the two domains of psychology and logic hinges on the basis on which their claims are established. Frege states,

> '[..]the laws of logic are first and foremost laws in the realm of *Bedeutungen* and only relate indirectly to sense. If it is a question of the truth of something – and truth is the goal of logic – we also have to inquire after *Bedeutungen'.* (CSR, 133)

As was discussed in the first chapter, Frege emphasizes that the predicate true is not

conferred on or applied to the *ideas* (in the sense Frege uses the word) humans have of objects in the world, but on the relevant thoughts which is something different than the idea. It is the thoughts that are communicated via language, expressed by assertoric sentences. Sentences do not express ideas since an idea, as a phenomenon of the brain, is not conveyable to others. As such, ideas are psychological, but thoughts are not.

An objector may put forth that when we use vision, and state 'what I *see* is ____(enter name or sentence describing an event, etc.)____; why is that not an idea? Frege explains, that if we are using the word 'see' in this way, we are not speaking of the idea but of the thought and judgment which is brought about by seeing. He brings an illustrative example for this point, 'Newton did not discover the law of gravitation because his senses were especially acute.' (L2, 149)

With the recognition that thoughts are distinct from ideas, Frege claims that laws of thought have no attachment to ideas either. What brings us to accept what is true is not part of logic. Logical claims are *established* on the basis of what is true and independent of *how* we actually reach the goal of truth; not so for psychology. If I am right in my reading of Frege, his anti-psychologistic arguments are not affected by advances in the discovery of general laws in psychology because the generality in such advances can only be understood in the descriptive sense, whereas it is in the prescriptive sense of generality that he deems logical laws as 'the most general' laws of thought. For this reason, we cannot deduce that the partition he draws between logic and psychology will stand or fall

based on the generality of their laws.[22]

### 3.2 – Frege's Arguments against Psychologism

Frege is steadfast in rejecting what he calls 'the corrupting influence of psychology into logic' and he brings forth arguments to build a compelling case against the approach which integrates the two fields. As was reviewed above, his differentiation between logical laws as laws of 'what is true' vs. psychological laws as laws of 'holding as true', is central to his refutation of psychologism. The spirit of this differentiation comes through in his comments on the work of B. Erdmann, a prominent psychological logician of his time. According to Frege, Erdmann considers the basis of truth and validity to be a general agreement among those who judge. This outlook is, in his view, a blatant case of conflating truth with 'holding as true'. Frege asserts, 'There is no contradiction in something being true which is held by everyone as false.' (GZ, p. XV-XVI)

Below I shall list a number of arguments Frege has offered to clearly differentiate his views on logic from the views of psychological logicians of his time. Each of these arguments against psychologism shall be briefly explained.

*Argument against logical laws as laws of nature* - The use of the word 'law' in its two senses, descriptive and prescriptive, as explained above, can make the reader conceive of

[22] Some of the contents of this chapter were presented as comments on a paper by Jim Hutchinson titled *'Frege's Radical anti-psychologism'* at APA's 2021 Eastern Division Conference.

a ‘law of thought’ as a natural law concerning thinking as a mental occurrence. But as was reviewed above, Frege conceives of logical laws as guiding principles of thought and not as a description of how we think. He states, ‘From the laws of truth there follow prescriptions about asserting, thinking, judging, inferring.’ (TH, 58) When laws of thought are understood as laws of nature, they are conceived as psychological laws having to do with how we naturally come to think, judge and infer. The view of logic as a science of mental processes, or brain composition is misguided and does not cohere with the role of logic as laws of truth. (TH, 58) Frege brings a number of arguments against this view.

The science of discovering how humans think is only based on what is generally the case by way of observation of empirical evidence. Frege explains that logical laws cannot be based on what is found to be naturally common for human thinking. ‘What is natural for one man may well be unnatural to another.’ (L2, 157) This reading of logical laws would also result in a conditional approach to logical truths. For instance, a mathematical equality, e.g., 2+3=5, would be explained by way of stating that based on what has been observed so far this equality holds. (L2, 145) As well, he states that for those who are being trained in logic, applying a high degree of rigor in logical steps, a very important tool in logical analysis, is not naturally intuitive and only graspable after much learning. (L2, 158)

Moreover, it is not possible to use logic for a proof, when it is based on derivations from laws of nature. (TH, 59) Frege argues that taking laws of nature as the basis of logic does not give us a way of explaining the distinction between our judging correctly or being in

error. He argues, without invoking logic which is independent of us and determined by what is true, we cannot distinguish whether we are following the causes of rational thinking or not. Although he does not deny that a mental process can be influenced by logical guidelines, he argues that something that is non-logical can also play a part in that same mental process. Only after we gain the relevant truths, can we know whether a derivation or an explanation accords with the laws of truth. Moreover, if the aim of logic is to decide whether the result of any mental process is true or false, we can do away with our concern with the process and assign to logic its proper role; which is 'the task of discovering the laws of truth, not the laws of taking things to be true or of thinking.' (TH, 59)

Finally, on this point, Frege tells us that settling disputes about what is natural and unnatural cannot belong in the realm of logic, which is incapable of resolving them. Logicians would have to try on the one hand to investigate how we actually think and on the other, find out if we agree about the laws of truth. (L2, 158) Looking at logic in this way, he argues, would make us lose sight of the real goal altogether; namely, acquiring knowledge of what is true.

*Argument Against Relativism* - Frege brings forth a hypothetical case of beings whose laws of thought are contradictory to ours. To draw a contrast between his outlook and a psychological logician's approach, he puts forward a hypothetical case:

> [W]hat if beings were even found whose laws of thought directly contradicted our own and therefore frequently led to contrary results in practice as well? The psychological logician could only simply acknowledge this and say: those laws are valid for them, these for us. I would say: […] Anyone who understands logical laws as prescribing how one should think, as laws of *being true*, not as natural laws of human beings' *holding as true*, will ask: who is right? […] The psychological logician cannot ask this, since he would whereby be recognizing laws of *being true*, which would not be psychological. (GZ, XVI)

This passage shows Frege's rejection of a relativist conception of logic. He cites logicians like Erdmann to take truth to be based only on an agreement amongst those who judge, thus equating truth with holding as true. Frege emphasizes that the prescriptive force of logical laws stem from their relation to truth, thus showing subjects how one must think in order to attain truth. In that light, he rejects the relativist approach since if laws of logic were dependent on whose thinking is considered, the grounds for holding logical laws as norms for thinking would become as murky and unclear as the psychological descriptions we discover. He clarifies that, 'Anyone who has once recognized a law of truth has thereby also recognized a law that prescribes how judgements should be made, wherever, whenever and by whomever they may be made.' (GZ, XVII)

Frege argues that if we conceive of anything as being true according to what different individuals or communities hold to be true, we must also dispense with the notion of

error, and with it, with science. Moreover, he compares the relativist claim to the liar's paradox. (L2, 144) He argues, when a relativist rejects the assertion that what is true is so independent of being recognized as such, he is contradicting his own claim.

*Argument from Timelessness* - Recall that in the last chapter, we reviewed that on Frege's view thoughts which are true are timelessly true and thus their truth is atemporal. In the same light, logical laws are not the product of any time, but hold of the relation between truths timelessly. Frege explains:

> The laws of truth, like all thoughts, are always true if they are true at all. Nor can they contain a condition which might be satisfied at certain times but not at others, because they are concerned with the truth of thoughts and if these are true, they are true timelessly. So if at one time the truth of some thought follows from the truth of certain others, then it must always follow. (L2, 160)

Logical relations so conceived are laws for determining which truths can be inferred from which. Since truths are (with their time specification included) atemporal, the guiding principles which tell us which truths are inferentially related to them, must also be atemporal.

Taking logical laws as timeless entails that they are not subject to change, whereas psychological laws are dependent on the workings of the mind of humans in a given developmental stage and can therefore change. The latter dependence is again related

to an understanding of the laws as those of 'holding as true' and can only be considered with this sort of qualification: 'the *holding* as *true* [*Fürwahrgehalten*] of things by people conforms on average with [psychological] laws, at present and to the best of our knowledge'. (GZ, XV) Each of Frege's arguments harken back to his main differentiation, but it is noteworthy that timelessness of logical laws is based in the timelessness of truth of thoughts.

*Argument from Constancy vs. Instability of Language* - Language does not stay stagnant. It changes with the passage of time. Since Frege's outlook starts with truth-bearing contents, his observation is that sometimes a thought is not at first expressed but only suggested by a sentence. Only in time, our expressions are changed in a way that thoughts can be properly expressed by them.' (L2, 152-3) Logical laws on the other hand do not change and thus cannot be derived from the grammar of any language. If we base the laws of logic in the grammar of this or that language, we fall into the problem of fixing a language in time.

In natural languages, there are periods of transition where expressions begin or cease to function in the same way. Such fluctuations are, on Frege's view, related to limitations in linguistic expression and not to any deficiency of the relevant thought content, which is timelessly true or false independent of anyone's evaluation. As an example, the logical law 'every object is identical with itself', does not change or have periods of transition. It cannot be the case that there was a period of time where every object was identical with

itself, but after that period this ceased to be true. (L2, 159-60)

Furthermore, since thinking requires knowledge of language, logic can be confused with grammar. But Frege explains that this is a mistake, otherwise all languages would share the same grammar. He states, 'The main task of the logician is to free himself from language and to simplify it. Logic should be the judge of languages.' (LH1, 102-3) Nonetheless, he observes that we can grasp what is logical in the way different languages make it possible to express the same thought. (L2, 154)

Frege did not see the need to give too much weight to linguistic forms of sentences, as may be done by logicians, particularly, in the use of subject and predicate. The latter, he thought, is cause for many logical imperfections, as are many other features of language, which we shall discuss in the next chapter.

*Argument from Generality* - This argument was mentioned in the previous section, but it shall be emphasized further here. Although Frege writes that 'Logic is the science of the most general laws of truth' (L2, 139), he goes to some length to prevent his readers from jumping to ill-conceived conclusions. It is misleading to think that since a psychological law can also be a general, albeit descriptive law about thinking, it can be comprehended as a law of thought. It is true that Frege states that 'logic is only that of saying what holds with the utmost generality for all thinking, whatever its subject matter'. (L2, 139) However, logical laws are conceived as prescribing how one should think as opposed to stating

whether people generally think in this or that way. The latter sense of generality is one which misconstrues laws of thought as natural laws for thinking, which would be psychological. It is also an occurrence of conflating the generality of laws of holding as true with the generality of laws of truth which was talked about earlier. (GZ, XV)

*Argument from Grounds vs. Causation:* Frege argues that conceiving laws of logic as psychological laws means that instead of seeking the reasoning behind any claim, we seek to find the causes which bring subjects to believe that claim. Everything subjects believe can involve psychological factors. We are then unable to distinguish between justifications for a claim and the causes that produce it. This blurring of the lines between grounds for a claim and the causes for a subject to arrive at it, in effect 'puts a superstition on the same footing as a scientific discovery.' (L2, 159) Superstition and error have psychological causes, just as does correct cognition. (TH, 59) For that reason, logical laws cannot be explained in terms of what causes us to think in accordance with them, but rather, by means of stating what truths follow from what other truths.

### 3.3 – Husserl's Added Arguments

It may not be wise to speculate, based on the order of publication dates of Husserl's 'Logical Investigations' (1901) and Frege's notes on Logic (1897), whether and to what extent each philosopher was influenced by the other in rejecting *psychologism*. Husserl's reasoning for this rejection does not begin with the differentiation Frege drew between

'what is true' and 'holding as true', which we shall henceforth call Frege's *T/HT* Distinction. However, as will be cited below, he articulates it as well. His approach, begins with the normative role of logic, bearing the principle that, 'Psychology [...] deals with thinking as it is, logic with thinking as it should be.' (1901, §19)

The first and foremost general claim in Husserl's approach is that theoretical disciplines are the foundation of normative disciplines. He surveys examples regarding the ethical 'should', to show that such cases are grounded in value judgments about 'good' and 'bad', and that every normative discipline draws on certain non-normative truths. Although his line of reasoning presents a contrast with Frege's, there are important similarities, such as pointing out the ambiguity in the word 'law', which was mentioned in the beginning of this chapter. As well, there are passages such as the examples below where it's as if Frege's notions are directly invoked:

> The term 'thought', which in its wider sense covers all intellectual activities, is in the usage of certain logicians by preference applied to rational, 'logical' thought, to correct judgement. That in *correct* judgement, Yes and No exclude one another, is plain, but this is merely an equivalent of the logical law, and not at all a psychological proposition. It tells us that no judgement is correct in which the same state of affairs is at once affirmed and denied: it says nothing regarding a possible coexistence of contradictory acts of judgement, whether in *one* consciousness, or in several. (Husserl 1901, §27)

As well:

> Logical laws have first been confused with the judgements, in the sense of acts of judgement, in which we may know them: the laws**,** as *'contents of judgement'* have been confused with the *judgements themselves.* (1901, §22)

Notwithstanding the similarities between parts of Husserl's reasoning with Frege's, he draws on the works of a number of philosophers. Here, we shall mention a few of Husserl's added arguments against psychologism which appear to be in line with Frege's viewpoint.

*Argument from Necessity* – One of the points Husserl brings, (1901, §19), is that logical laws are not contingent, but necessary. He explains necessity of logic as being tied to its normativity. He also argues that psychological laws, as a branch of natural laws, only tell us *how* thinking occurs and under what circumstances. Such principles are not necessary but contingent since they do not tell us how thinking must proceed in order to result in correct thinking. Again, his approach is based on the view that logic does not tell us what understanding is like, but how it ought to be.

We reviewed a similar argument of Frege's about the understanding of 'laws of thought' in the normative sense rather than the sense that is akin to laws of nature. Husserl adds this important distinction: Laws of nature are contingently true, whereas logical laws are necessarily true. This addition is important in construing the conception of logic as normative. However, when Husserl considers the psychological logician's response to this

argument, the centrality of *T/HT* distinction at the heart of Frege's dialectic about laws of logic becomes more evident.

Husserl cites Mill as responding in this way; that 'thinking as it should be, is merely a special case of thinking as it is', and that psychology must account for all thinking, correctly or otherwise. Mill finds it absurd that laws of correct judgement is excluded from the general laws that apply to all judgment.[23] (1901, §19) Note that on this point, Frege would retort that Mill is neglecting the *T/HT* distinction. Frege's arguments anticipate Mill's point, in that if we consider psychological laws as laws of *holding as true*, we do not have to exclude cases where subjects make correct judgments. In fact, as was listed above, one of the important arguments Frege puts forth is that psychological laws are purported to apply to the way humans come to hold beliefs without distinguishing between the cases where those beliefs are correct or incorrect. As *T/HT* distinction directs, logic only deals with truth, not how any subject comes to hold beliefs. And that is why we need to use logical rules to distinguish correct and incorrect beliefs.

*Argument from Circularity* - In addition to pointing out the ambiguity in the word 'law', Husserl argues that logic does not have the task of explaining the causes or origins of mental events but is only concerned with the 'truth-content' of those events. He points out as well that a logician would not be interested in the natural connections between

[23] Husserl cites *An Examination* by Mill, p. 459f.

mental phenomena, but rather the 'ideal' connections between such, which one 'only exceptionally finds realized in the actual course of thoughts.' (1901, §19)

Husserl creates a dialectic for discussing psychologism, by giving equal traction to the arguments put forward by its proponents. He brings citations from Lipps (1880), who points out the contingency of thinking by individuals influenced by custom, tradition, etc. He mentions one of Lipps's arguments in defense of psychologism:

> That psychology, as distinct from logic, does not deal with the opposition of true and false 'does not mean that psychology treats these different mental conditions on a like footing, but that it renders both intelligible in a like manner' (Lipps, *op. cit.* §3, p. 2). (1901, §19)

Husserl responds to Lipps, by first restating that psychology in its explanatory role uses connections which are causal in nature, adding that while the sciences, including psychology, rely on logical rules, while presupposing their validity. However, he argues, if psychology presupposes logical rules like all sciences, then it cannot itself be the foundation of logical rules. Such a relation would be a circular one.

Husserl also anticipates a different objection; that if we take all sciences to presuppose the validity of logical rules, we must also take logic to abide by that presupposition; hence, the circularity would be a problem for logic as well. He retorts by pointing out that 'presupposing' has two senses; in one, logical rules are premises in proofs, in the other,

they guide us on how to proceed in proofs. He asserts that the role of logical rules must be the latter, since 'as many an artist creates beautiful works without the slightest knowledge of aesthetics, so an investigation may construct proofs without ever having recourse to logic.' (*Ibid*.) Therefore, logical laws cannot themselves be premises in proofs.

*Argument from Vagueness or Inexactness of Psychology* - Husserl puts forth noteworthy consequences of psychologism. One such consequence is that since psychology dwells in empirical findings, it cannot be an exact science. He argues that the laws found by generalizations from experience can only be vague and approximate. He then argues:

> If psychological laws lack exactness, the same must be true of the prescriptions of logic. […] But precisely the laws which are pointedly called 'logical', which as laws of proof make up the real core of all logic - the logical 'principles', the laws of syllogism, the laws of many other kinds of inference, as, e.g. equational inferences, the Bernoullian argument from *n* to *n* + I, the principles of probability-inferences etc. - are of absolute exactness. (1901, §21)

This, Husserl observes, is a serious consequence for the psychologistic logician, since validity of the exact principles of logic cannot depend on the circumstances from which empirical and therefore approximate laws of psychology can be drawn.

*Argument from Apriority* - The argument here is another consequence of holding the grounds of logical laws to be the empirical science of psychology. Husserl points out that

laws of 'pure logic' are known *a priori*, rather than by insights which justifies them based on mere probabilities of being true. He brings examples of the Law of Contradiction, one of Aristotle's syllogisms, as well as mathematical laws, to argue that it is not by our surmising, nor by probability that these laws hold; whereas, laws of nature may only hold by approximation. He asserts that for logical laws, 'We grasp their very truth, so that talk of zone of inexactness, of mere approximations etc., loses all possible sense.' (1901, §21)

In addition to the above arguments, Husserl devotes a long discussion, engaging with the views of Mill and Spencer on the Law of Contradiction, as well as offering a critique of *relativism*. As a passing note, although Husserl is adamant that one must not allow psychologistic arguments fool them and 'must abolish such deceit'! (Husserl 1901, §20), at times, he uses a series of rhetorical questions in the dialectical framework of his discussion that seem to sympathize with the pschologistic account, for instance he states that 'psychology *helps* in the foundation of logic'. (*Ibid*., italics added)[24]

### 3.4 – Objectivity of Logical Laws

In the previous chapter, it was explained that it is the truth of thoughts which Frege expounds on as timeless and mind-independent. We outlined the two roles he assigns to thoughts, relating them to the two ways they are objective. With so much emphasis placed on the two roles that thoughts are purported to play, some readers may deduce

[24] The scope of this chapter does not allow for a detailed review of Husserl's full discussion of psychologism.

from the discussion of logical laws so far that they inform us of the relation between all thoughts, whether true or false. Frege tells us that logic deals only with the relation between truths. To remind, the prescriptive role of logic is to guide reasoners to hold true beliefs about reality, and as we reviewed, it is only true thoughts that represent reality. Consider this passage regarding the contrast between 'intensionalist' and 'extensionalist' logicians, where it is emphasized that logic dwells only in the realm of referents:

> The intensionalist logicians are only too happy not to go beyond the sense […] They forget that logic is not concerned with how thoughts, regardless of truth-value, follow from thoughts, that the step from thought to truth-value – more generally, the step from sense to *Bedeutung* – has to be taken. […] the extensionalist logicians come closer to the truth in so far as they are presenting in the extension—a *Bedeutung* as the essential thing. (CSR, 133-4)

This claim about the relation between logic, truth, and reality, helps us better understand the independence of logical laws from subjects' beliefs. Whether any thinker arrives at the truth or falsity of a thought is a matter that has to do with 'holding as true' not of 'being true', and as was reviewed earlier, the *T/TH* distinction is central to Frege's rejection of psychologism. The passage below is yet another statement of that point:

> Logic is concerned with the laws of truth, not with the laws of holding something to be true, not with the question of how people think, but with the

question of how they must think if they are not to miss the truth. (L2, 161)

The truth of any sentence expressing a thought depends on what objects and concepts its components refer to, and whether the relevant object falls under the relevant concept. Frege is unequivocal about the independence of the truth of thoughts from minds. He makes it clear that for him, 'truth is objective and independent of those who judge; [but] for psychological logicians it is not.' (GZ, XVII)

We found that on the account of thoughts as veridically objective, it is their truth that is mind-independent and timeless. Since logic deals with the relation between truths, logical laws, as laws of truth, are also mind-independent and timeless. Consequently, the objectivity of the truth of thoughts entails the objectivity of logic, so conceived. Frege states,

> The laws of truth, like all thoughts, are always true if they are true at all. Nor can they contain a condition which might be satisfied at certain times but not at others, because they are concerned with the truth of thoughts and if these are true, they are true timelessly. So if at one time the truth of some thought follows from the truth of certain others, then it must always follow. (L2, 160)

In the last two sections, we reviewed the arguments for the independence of logic from psychology and so far in this section, we discussed its grounding in the independence and atemprality of truths. Recall also that in Chapter 1, it was found that the *being* of a

thought is substantiated by subjects' shared capacities for cognition. We may now consider whether there is a relation between logic and said capacities.

Our cognitive faculties, in the best of circumstances, allow us to grasp, judge and infer thoughts, and as was established, the intersubjective objectivity of thoughts depends on those faculties. If we are convinced by the arguments for the roles thoughts play in communication, we must concede that thinkers are presupposed to have the capacity for performing various cognitive functions that allow them to make progress in their knowledge of truths. This is not the same as presupposing that they will, in all cases, perform these functions correctly. Since there is no guarantee that subjects always grasp and judge correctly, or that they can always know what truth follows from which, the possibility of a flawless exercise of these faculties must not be confused with its actual occurrence in every case.

The reader may ask if there is explicit textual evidence that Frege presupposes our cognitive faculties to include the ability to reason, and proceeds with his logical investigations on that basis. In his efforts to establish the foundations of arithmetic, there are a number of remarks that strongly suggest such a reading, particularly when it comes to the need for rigor.

In his *Begriffsschrift*, Frege classifies all truths into those for which logical laws are the sole justification, and those which require facts acquired through experience. Thereupon, he

states his aim is to establish how far arithmetical proofs can be advanced by means of logic alone. He explains that in that effort, he must strive to keep the chain of inferences *gap-free*, in order '[t]o prevent anything intuitive [*Anschauliches*] from penetrating here unnoticed'. (BG, Preface)

In *Grundlagen*, Frege acknowledges that there are universally valid procedures which humans have done by instinct, but that the general principles for establishing truths are outside the sphere of psychology and assigned to logic. He maintains that a proof for a proposition is to give insight into the way one truth follows from another and to pursue the inquiry to the point where the fewest number of 'primitive' truths are relied on. The goal in his investigation into arithmetic is to prove the fundamental propositions 'with the utmost rigour; for only if every gap in the chain of deductions is eliminated with the greatest care can we say with certainty upon what truths the proof depends'. (FA, §4)

It is clear that in a logical investigation of arithmetic, Frege wants nothing left to intuition, natural inclination, or conjecture. Every step must be explicated in a way that relies on nothing but logical laws. Implicit in his consideration of rigor in the chains of inferences and striving to make them free of gaps, there is the goal of making the concepts and conclusions set out in a way that they can be firmly established for any mind that is capable of following each rational step. If we accept that Frege must have presupposed our rational faculties in his overall strategy, we can then tackle the question of the relation between logic and minds from a different angle.

Recall that on Burge's view, Frege follows 'a paradigmatic Platonic direction of explanation: from what is in an abstract realm to what is reasonable.' (1992, 646) Conjointly, Burge puts forth the following puzzle: 'how could Frege believe that reason alone could give one knowledge of an atemporal realm of entities that are completely independent for their existence, nature, and relations to one another, of anyone's reasoning?' (1992, 634)

Burge's interpretation of Fregean thoughts as entities that are absolutely detached and unrelated to subjects and their reasoning, renders the above question unanswerable. Effectively, the puzzle is unresolvable within the framework of holding third realm entities as having no relation to rational beings like us, while at the same time, taking our 'commitment' to those entities as a given. The Platonist explanation, in effect, comes to an end at this point.

At the conclusion of the last chapter, it was deduced that in whatever light we understand Frege's exposition of the notion of thought, there can only be one explanation for how the same contents can play the two roles he assigns to them. We thence put forth that the direction of explanation in his arguments is from reality to subjects' epistemic access, but only by way of intermediary truth-evaluable contents he calls thoughts.

A true thought can be justified by means of logic alone or it can be based on experience. It is also possible that the justification is a combination of the two. Frege explains that

even when the justification for a true thought is purely logical, the human mind may still rely on the activity of the senses to realize its truth, 'since without sensory experience no mental development is possible'. (BG, Preface) Alternatively, when knowledge is *a posteriori*, it may be our perception that provides the initial content of experience, but we only gain knowledge by means of grasping and then judging a true thought that represents the perceived aspect of the world.

The indirect relation subjects have to the world is by means of intermediary truth-evaluable contents they can grasp. Sensory perception provides subjects with the raw material for understanding reality, but logic is interwoven in the truths that they are judging about the world and how those are related to one another. Both logic and sensory experience, are thus involved in our epistemic access to reality, even if it is logic that gives us the prescriptive laws for the goal of attaining truth.

Furthermore, since our knowledge of the world is only possible by means of thoughts, we must understand the relations between objects and states in the world by understanding the relations between truths which represent them. We thus exercise reasoning, when we follow these relations correctly. We use logical laws prescriptively when we do not divert from the general relations between truths which logic lays down. Therefore, it is the indirect relation we have to reality which is the reason we can use logic as our guide for thinking with the goal of attaining truth.

Judging subjects have to be in the proper relation to thoughts, in order to be in the proper relation to reality. Their relation to logic is a further level of access to that reality, since logic is concerned with the laws of truth and subjects are not only learning truths, but also using the relation amongst truths to learn new truths.

It is not a mere coincidence that thinkers can grasp thoughts, judge their truth value and infer true thoughts from other true thoughts. It is rather, that they are using both perception and their rational faculties to gain knowledge *about* reality, in the only way possible; by means of understanding true thoughts and still further, by means of following the general laws of truth.

## CHAPTER FOUR – LANGUAGE

We saw that thoughts, on Frege's account, are purported to be the logical content of assertoric sentences and in that way, 'wrapped up in a perceptible linguistic form.' (TH, 66f) Moreover, these truth-bearing contents are expressible in different languages and thinking is only possible when we have acquired at least one language. Despite this coupling, thoughts are explicated as primary to any language, such that the same thought can be expressed by different languages. Frege maintains that natural languages are not constructed on the basis of any logical blueprint (SK, 288), and that they were made by humans at a stage when they had 'childish pictorial thinking'; so much so, that 'Someone who wants to learn logic from language is like an adult who wants to learn how to think from a child.' (LH1, 102)

Frege further asserts that in natural languages speakers combine thinking with images and feelings. (L2, 154) He is consistent in pointing out inadequacies in natural languages for the purposes of logical and scientific analysis. For instance, languages change and thoughts which may at first be vaguely contained in an expression, can be explicitly asserted in time. He states that through such a transition period, it is possible to interpret different thoughts by a sentence. However, it is not the expressed contents that are fluctuating, but rather, it is the language that is changing. This is why there are difficulties in applying truth to some contents in cases where the expressions are still developing.

(L2, 153)

Frege mentions many obstacles presented by ordinary languages, in that thoughts are not allowed to be properly expressed in a way that they can perform their logical role. In the next section, some of the features of natural language which Frege considers unsuitable for expressing thoughts will be reviewed. Following that, we shall look at what kind of a language Frege takes as a perfectly logical one, using arithmetic as the closest living example of such a language.

### 4.1 – Natural Languages

As was stated, although Frege acknowledges that our thinking is enabled by our skills with languages, he takes natural languages to be inadequate for expressing thoughts in the most logical and truth-centric way. He brings detailed examples to explain what elements in the content of an assertion would not contribute to judging its truth and which elements would. Throughout his writings, he mentions features of ordinary sentences such as coloration, poetic fragrance, moods, feelings, ideas, etc., to say that none of these can be counted as part of the thought expressed. He calls such features 'psychological trappings' of natural languages which are the result of those languages' grammar being a mixture of the logical and the psychological. (L2, 154) He suggests learning different languages to further 'one's logical education', since as he argues, the differences in grammar prompts one to learn about the common logical core of a thought when that same thought is expressed in each language. (*Ibid.*)

A way to examine what characteristics of natural language are seen by Frege as inadequate for scientific and logical uses, is to review his remarks on cases where he considers two sentences expressing the same thought, or alternatively, cases in which the same sentence conveys two different thoughts. Through those iterations we can see what Frege is reaching for, when he wants to 'separate a thought from its psychological trappings'. Here we shall parse through some of these cases.

### 4.1.1 – Allowable Grammatical Variations

Frege asserts that the logical content expressed by an assertoric sentence is also its *conceptual content* which he defines as 'the content that can become a judgment'. (BG, §3) In *Thoughts*, he asserts that the addition of words such as *still* and *already*, as well as changing connectives such as *and* with *but*, do not change the thought expressed. More importantly, he deems variations in surface grammar such as 'changing the verb from active to passive … making the accusative into the subject… [as well as] the dative into the nominative …[as] not trivial in every respect; but they do not touch the thought'. (TH, 64)

By and large, these sorts of grammatical variations illustrate that grammar is not a reliable indicator for logical distinctions, since two sentences can express the same thought even though they differ in grammatical form. (L2, 154-5) An example of one of the ways that the same thought can be expressed in different grammatical forms is the active to passive transformation. Since he emphasizes that a thought is only that content of a sentence which can be judged true or false, active/passive sentences such as 'The Greeks defeated

the Persians at Plataea' and 'The Persians were defeated by the Greeks at Plataea' exemplify two grammatical forms of the same thought. Other examples he brings are the sentences 'M gave document A to N', 'Document A was given to N by M', and 'N received document A from M' all expressing the same thought. Such differences in grammatical form may be for 'stylistic or aesthetic reasons, he explains, or they can direct the attention onto an element in the thought. Still, however consequential it may be for the participants in a conversation, Frege maintains that such variations are of no concern to logic. (L2, 153)

### 4.1.2 – Pejoratives

Frege lays out his notion of thought as being independent of any aspects of thinking which have no part in assigning a truth value to a sentence or using that sentence in an inferential capacity. He asserts that in many instances when a sentence is uttered, it is not only to convey a thought but also to affect the hearer's feelings. At times these affects are cast auditorily in the speaker's tone of voice. Other times, it may be that a particular word is used to evoke an image or emotion. An instance of this sort of affect is the use of pejoratives. An example he brings is the difference between the two sentences 'This dog howled the whole night' and 'This cur howled the whole night'. On his view, these two sentences express the same thought, even though the word 'dog' in the first sentence (***A***) is neutral in its reference, while the word 'cur' in the second sentence (***B***) has an unpleasant association. He states, 'True, anyone who utters the [latter] sentence speaks pejoratively, but this is not part of the thought expressed.' (L2, 152) Frege runs through a

test for the identity of the thoughts expressed in the following way.

First, he considers the main objection to these two sentences expressing the same thought to be that sentence ***B*** tells us something more than sentence ***A***. Following the objection, he considers sentence ***B*** as made up of *two* thoughts; namely, he supposes that ***B*** expresses the thought for sentence ***A*** plus another thought about the dog being a cur (***A′***). Then, he takes sentence ***A*** as true and sentence ***A′*** as false and infers that sentence ***B*** which is made up of ***A*** and ***A′*** (presumably in conjunction with each other) would then have to be false as well. He rejects this outcome and asserts that if sentence ***A*** is true, sentence ***B*** cannot be taken as false. From this, he concludes that ***B*** cannot be expressing two thoughts ( ***A*** and ***A′***) and thus, it must be accepted as expressing the same thought as sentence ***A***. He states,

> '[T]he use of the word 'cur' does not prevent us from holding that the second sentence [in this case ***B***] is true as well. For we have to make a distinction between the thoughts that are expressed and those which the speaker leads others to take as true although he does not express them.' (L2, 152)

As we can observe in the above example, Frege acknowledges that the speaker is leading the hearer to accept the thought ***A′*** as part of ***B***, but that nonetheless, we cannot take ***B*** to entail ***A′*** because it has not been made explicit. Generally, on Frege's view, in cases where a sentence contains a content which is not explicitly expressed and only indirectly

implied, even if that content is in some sense truth-evaluative (refer to the argument above), we cannot take it to be a logical part of the expressed thought.

This kind of approach to the sort of implicature associated with pejoratives is not without objectors. It is notable that Frege's example is of a *conventional* pejorative where competent speakers can comprehend the implications. However, 'The cur howled all night' taken to mean two sentences, is not the problem. His claim is that one cannot take 'the cur howled all night' as false, if one believes that the dog howled all night, even if one cannot concur that the dog is a *cur*.[25]

### 4.1.3 – Ambiguity

A much discussed and important reason Frege holds the view that natural languages are inadequate for logical investigation is the occurrence of ambiguity. The general understanding of ambiguity, which may take various forms, usually comes down to more than one object or concept being designated by the same expression. This is the case where the same linguistic expression is used to refer to more than one referent. In many cases the intent of a speaker is discernable from the context of use, *e.g.* 'Jim has decided to run', could mean different things if Jim is an aspiring politician, if Jim is an athlete, or in various other contexts. There are also cases where the context does not help us reliably choose which meaning is intended, *e.g.,* 'Banks are always crowded in the afternoon',

[25] For more discussion of this topic, *Cf.* (May and Hom 2015) and (Williamson, Reference, Inference and the Semantics of Pejoratives 2009).

uttered in a town where there are both several public river banks and several financial institutions.

For Frege, ambiguity takes a more ubiquitous form. Not only can terms of natural language designate more than one referent, all expressions, be it everyday ones or even proper names, may have more than one sense. This is so because it is possible for thinkers to grasp different senses for the same expression. Consequently, there are instances where confusion abounds.

In short, the referent of a proper name can have more than one way of being presented to subjects, such that proper names can be homonyms. The focus in the sense/reference distinction is that even if an expression has more than one sense, the same referent can be picked out. Frege states that in our ordinary discourse, as long as the reference remains the same, variations of sense are tolerated. (SR, 27f) In the context of discussing Frege's outlook, a term is considered ambiguous when it has more than one sense, even if only one object is picked out.

This sort of ambiguity, resulting from variance in the senses of expressions, is illustrated in Frege's famous *Lauben* example, where he shows that a proper name in a sentence may be grasped differently by different subjects and thus result in that sentence expressing more than one thought. (TH, 65) This example shall be revisited in the next chapter. For the purposes here, it suffices to say that the *Lauben* example confirms that on Frege's view, ambiguity is a pervasive feature of ordinary languages. In a natural language, there

aren't different names corresponding to every way a given referent is presented to each subject. Thus, this sort of ambiguity of names is a matter of course.

The distinction between thoughts according to the way referents are presented to speakers, in part relates to the intersubjectivity of thoughts. However, since a thought is independently true or false based only on what its components refer to, the truth value of the thought they are a component of, is understood in view of the veridical objectivity of the referents and the relation between them, regardless of how those referents are presented to speakers.

What names refer to, is a function of language and thoughts are grasped by speakers on the basis of their knowledge of those referents. Moreover, based on that knowledge, they may also draw different inferences from the same sentence containing that name. Thus, as Frege explains, the presence of ambiguity in natural languages are not conducive to clarity in scientific investigation. The topic of ambiguity in the form of sense variance will be reviewed in more detail in the next chapter.

### 4.1.4 – Empty Names

Recall that grasping the sense of a sentence is distinct from acknowledging its truth or falsity. (TH, 62) According to Frege, by grasping a thought subjects come into a relation to it such that it is then possible for them to judge if it is true or false. However, as he asserts, languages contain expressions which do not have a designation. These

expressions include non-referring proper names. In philosophy of language, names without referents are commonly called *empty names.* As it turns out, Frege does not exclude such expressions from having a sense, despite their lack of referents. He states,

> 'A proper name must at least have a sense (as I use the word); otherwise it would be an empty sequence of sounds and it would be wrong to call it a name. But if it is to have a use in science we must require that it have a *Bedeutung* too, that it designates or names an object.' (CSR, 135)

In addition to empty proper names, there are also complex expressions whose grammatical form seems to qualify them as designators, despite not picking out a referent. (SR, 40) Examples of such grammatically well-formed yet *empty* expressions are: 'the celestial body most distant from the earth' or 'the least rapidly convergent series'. Frege maintains that one can still grasp a sense for these expressions, but that, 'In grasping a sense, one is not certainly assured of a referent.' (SR, 28).

To illustrate the role of empty names in the sentences containing them, consider the example where Frege supposes that a subject mistakenly thinks 'Odysseus' has a referent and 'seriously' takes the Greek mythical figure as being characterized by a predicate. He states, 'The thought remains the same whether "Odysseus" has a referent or not.' (SR, 33) The claim is that a thought is just as graspable when its expression contains a non-referring proper name; but in such cases it is only *as if* the subject can judge whether it is true or false. On that outlook Frege calls the sense of sentences containing empty names,

*mock thoughts* and claims that the sentences that express them, *e.g.*, 'William Tell shot an apple off his son's head' or 'Scylla has six heads', are neither true nor false, but simply *fictitious*. (L2, 129-30)

For fiction, where thoughts do not have truth values, the sense may be enough, but this is not the case for science. (CSR, 134) Since Frege's focus is to present the importance of thoughts in science, he clarifies that mock thoughts are prevalent in poetry and other works of art, and that logicians and scientists are only concerned with *proper* thoughts. He states,

> 'In hearing an epic poem [ ] apart from the euphony of language we are interested only in the sense of the sentences and the images and feelings thereby aroused. The question of truth would cause us to abandon aesthetic delight for an attitude of scientific investigation.' (SR, 33)

Mock thoughts are thus understood as having no import in scientific discourse, since such discourse must, Frege insists, deal with the world of referents rather than imagination and emotions. When the question of truth is central, speakers put aside 'aesthetic' or other non-semantic concerns. In the scientific world, veracity is of the utmost import, and '[t]he thought loses value for us as soon as we recognize that the referent of one of its parts is missing.' (SR, 33) Frege is once again clear that in his analysis of the notion of *thought*, the primacy of truth is never abandoned. He tells us that '[w]e are therefore justified in not being satisfied with the sense of a sentence, and in inquiring also as to its referent.'

(*Ibid*.)

Many empty names are names of fictional characters or mythical figures, either with known origins or having gained currency among speakers over time. These names are known to a linguistic community by way of culture, literature, mythology, etc. Burge (1979, 414) opines that we can gain an understanding of Frege's account of empty names with the view that in almost all cases, they have non-extant but *customary references*.

It is thereby possible to understand mock thoughts as being 'mock true'[26]; *e.g.,* 'I am dressed as Santa Claus!' is 'true' in the sense that my attire has the components of what the mythical character is expected to wear. Again, a mock thought cannot be true on the notion of truth which Frege outlines, however to the extent that it can have an intersubjective sense, it can be 'mock-true'. We thus far know that any expression which is to be of use in science must have a referent. (CSR, 135) Mock thoughts cannot be veridical and thus cannot represent reality. The occurrence of empty names in ordinary languages thus relies on the role of thoughts which is grounded in their intersubjectivity, not their veridicality.

### 4.1.5 – Imprecise Concepts

In a few remarks, Frege speaks to the phenomenon of *vagueness*, a topic which has been much debated since his time. One clear instance where he expounds on this feature of

[26] I borrow the phrase 'mock-true' from Kent Bach.

natural languages, is in a passage about *enumerability* as being central to his view of arithmetic. He states,

> The only barrier to enumerability is to be found in the imperfection of concepts. Bald people for example cannot be enumerated as long as the concept of baldness is not defined so precisely that for any individual there can be no doubt whether he falls under it. (LM, 163)

From this passage, we can observe that for Frege, vagueness is understood as a problem of imprecision of concepts in natural languages. He explains that we are only able to count which (and how many) objects fall under a concept when that concept is clear and precise enough for us to know whether or not any given object falls under it.

As well, Frege speaks of the Sorites Paradox, although not by name, in the *Begriffsschrift*. There, he first defines *heredity* of a property in this way: 'If ***x*** has a property ***F*** that is hereditary in the ***f***-sequence, and if ***y*** follows ***x*** in the ***f***-sequence, then ***y*** has property ***F***.' He then lays out the paradox for the concept of 'heap' by having ***F*** be the property of being a heap of beans and following the procedure of removing beans one at a time, where ***f*** **(*a, b*)** means ***b*** contains the number of beans in ***a*** except one. He explains that if, according to the above-stated definition, the property of being a heap of beans is hereditary in the ***f***-sequence, by removing one bean at a time, we eventually arrive at the result of having the last bean and still calling it a heap of beans. He identifies the culprit to be vagueness in the concept of *heap*, asserting, 'there are certain ***z*** for which ***F(z)*** [standing for ***z*** beans form a heap] cannot become a judgment [*i.e.*, a true sentence] on

account of the indeterminate-ness of the notion of "heap".' (BG, §27)

The reason Frege considers vagueness to be an inadequacy of natural languages, comes down to the precision of concepts for the purpose of following rules of logic. Recall that he views thoughts as either true or false. On this bivalent account of truth, we cannot begin to apply logical rules if there are cases where it is unclear whether an object falls under a concept. This includes cases where the concept is vague.

Frege speaks of instances where a thought is not immediately clear. He asserts that such lack of clarity is not the property of the thought but the result of not having properly grasped or assimilated that thought. (L2, 150) On his view, the thought, which may sometimes bear some psychological or external 'impurities' may be dependent on the 'finer or coarser structure of the concepts involved'. (FA, xv-xvi) In light of his remarks, language must be expressive of a thought as 'purely' as possible. The imprecision of concepts in ordinary languages are thus obstacles in the quest for clarity of thoughts.

* * *

The flaws in natural languages mentioned here are by no means exhaustive of all the instances Frege talks of language getting in the way of clarity in expressing and inferring thoughts. However, from these cases we can surmise many of the norms he lays out for a scientific language. The kind of clarity of expression he remarks on, precludes occurrences of hidden implications, psychological impressions, the need to surmise speakers' intention from the context of speech or other implications, imprecise concepts,

as well as names and complex expressions without referents. This is why Frege aspired to provide the structure of a language which does not have such inadequacies in his *Begriffsshrift* (BG).

### 4.2 – A Logically Perfect Language

Frege tells us why natural languages are not made to follow the guidelines of logic. There may be logical elements in any language, but they are not always transparent and they do not always follow what is demanded by logic accurately. For that reason, he asserts,

> 'Instead of following grammar blindly, the logician ought rather to see his task as that of freeing us from the fetters of language. For however true it is that thinking, at least in its higher forms, was only made possible by means of language, we have nevertheless to take great care not to become dependent on language; for very many of the mistakes that occur in reasoning have their source in the logical imperfections of language.' (L2, 155)

We said that for Frege, the notion of *thought* is paramount across languages. Any thought can be expressed in more than one language. It is thus clear that Frege does not see thoughts as being language-relative. Nonetheless, he acknowledges that our thinking is bound by language. In a 1915 note he writes:

> If our language were logically more perfect, we would perhaps have no further need of logic, or we might read it off from the language. But we are

> far from being in such a position. Work in logic just is, to a large extent, a struggle with the logical defects of language, and yet language remains for us an indispensable tool. Only after our logical work has been completed shall we possess a more perfect instrument. (BL, 252)

With this outlook, Frege seeks to devise a logical language to express thoughts in their purest form, free of confusion and psychological add-ons. As was reviewed in the last chapter, he prefaces his *Begriffsschrift*, dividing truths into two categories of those which are proven by means of logic and those which are supported by experience. We are expected to rely on chains of inference to provide a secure foundation for the former and arrive at new truths from the latter. This kind of undertaking is where the obstacles presented by natural languages are most exposed.

Frege sets out to correct the sorts of defects of natural languages enumerated above in constructing a new language; one that he calls the 'formula language for pure thought'. His aim is to express only the logical content of sentences, hence the name *Begrifflicken Inhalt* (conceptual content). (BG, Preface) By means of this new ideography or formula language, Frege proceeds to put forth arithmetical proofs, following rigorous logical steps of gap-free inferences.

From various remarks Frege makes regarding the requirements of a perfect formula language, the three most prominent features distinguishing it from natural languages are: (1) No sign can be without a referent (SR, 41), (2) Sentences are not structured using

*subjects* and *predicates* but rather *arguments* and *functions* (BG, §3), and (3) Not only each sign must have a unique reference but also a unique sense. (SR, 27n)

The first feature is important in that it precludes the occurrence of empty expressions. This is not only the case when it comes to names of objects, but also concepts. Frege states,

> Logic must demand not only of proper names but of concept words as well that the step from the word to the sense and from the sense to the *Bedeutung* be determinate beyond any doubt. […] Of course, this holds for all signs and combinations of signs with the same function as proper names or concept words.' (CSR, 135-6)

As was explained earlier, empty expressions result in mock thoughts. The rule of eliminating empty expressions guarantees the absence of mock thoughts in logical analysis. In a perfect language, all thoughts are proper, referring either to the True or the False, such that logical rules of truth can be clearly applied to every well-formed sentence.

As we shall see in one of the following sections, Frege deems the symbolic language of arithmetic to be the closest among existing languages to a logical one. One reason for this is that arithmetic does not contain imprecise concepts as do natural languages. Nonetheless, as he points out, even arithmetic is not immune to the occurrence of empty expressions. There are, for instance, combinations of symbols which are well-formed in mathematical analysis and seem to have a referent, but in fact lack one; *e.g.*, divergent

infinite series. (SR, 41) Although Frege admittedly modeled some features of his formula language on arithmetic, the occurrence of empty expressions was an important reason he did not consider it a perfect language.

The second way of dispensing with the inadequacies of natural languages is to structure assertoric sentences with arguments and functions instead of subjects and predicates. Frege states,

> In the first draft of my formula language I allowed myself to be misled by the example of ordinary language into constructing judgments out of subject and predicate. But I soon became convinced that this was an obstacle to my specific goal and led only to useless prolixity. (BG, §3)

The central idea behind replacing subjects and predicates with functions and objects can be briefly explained as follows. Sentences divide into two parts: The part which Frege calls the *function*, and is 'unsaturated'—*i.e.*, contains an empty space to be filled; and the part which is the *argument* to that function, considered to be 'complete in itself'. (FC, 17) In a truth-evaluable sentence, the function receives an object as its argument, resulting in a complete judgable content. Frege admits that it is not simple to explain what he defines as objects as anything but arguments and values of functions. He simply states, 'An object is anything that is not a function, so that an expression for it does not contain an empty place.' (FC, 18)

The following example is brought to clarify the two sentential classifications: In a sentence like 'Cato killed Cato', we can think of *Cato* in its first occurrence as the object, making it the argument for the function 'to kill Cato'. Alternatively, the second occurrence of *Cato* may be taken as the argument to the function 'to be killed by Cato'. Lastly, we can take *Cato* as the argument in both occurrences, in which case, 'to kill oneself' will be taken as the function. (BG, §9)

Replacing subjects and predicates with functions and arguments has a few advantages in logical analysis. For start, there is no chance of confusion about psychological overtones, which as we discussed, can be conveyed implicitly in natural language sentences. Frege observes that in some cases, the place a speaker chooses for the subject in a sentence of ordinary language has some significance in directing the listener's attention. For instance, recall that in ordinary language, the same thought could be expressed despite grammatical variations in cases using active and passive verbs. In such transformations, Frege tells us that even if there may be some difference in the emphasis on one part of the sentence than the other, and even if 'one can detect a slight difference in meaning, the agreement [in the logical content] outweighs [such differences].' (BG, §3) In a formula language these grammatical variations cause unnecessary confusion. Frege clarifies by stating, 'all those peculiarities of ordinary language that result only from the interaction of speaker and listener […] have nothing that answers to them in my formula language.' (BG, §3)

Moreover, an important aim in the *Begriffsschrift* is that sentences with the same conceptual content have a uniform structure, such that there is no variation in the expression of the same thought. Frege explicitly states, 'We need not introduce any distinction between propositions having the same conceptual content.' (BG, Ibid.) Uniformity of structure is thus an added reason why he prefers the use of functions and arguments in place of subjects and predicates.

As for the third feature that distinguishes a perfect language from an ordinary one, Frege prescribes that no sign can have more than one sense and one referent. It is however still allowed for two different signs to have the same referent. The rule brings about a fixed relation between a sign, its sense, and its referent which is an important tool for conciseness and clarity in logical use. (SR, 27 & 27f)

Earlier, we spoke about ambiguity in natural languages, where subjects grasp different senses for a proper name even though the referent is the same. Frege explains that ambiguity of expressions in any sentence makes it possible for that sentence to express different thoughts. Prescribing only one sense for each sign in a perfect language, where signs are also guaranteed to have a unique referent, ensures the absence of homonymy.

The aim of stipulating rules of the sort we reviewed in this section, is to provide the tools of expression that are suitable for scientific purposes. A perfectly logical language must have the advantage of expressing logical content precisely and uniformly, such that 'Everything necessary for a correct inference is expressed in full, but what is not necessary

is generally not indicated'. (BG, §3) Success in using such a language for scientific aims is measured by the ease with which thoughts can be distinguished from one another and the guarantee that the same inferences are drawn from the same sentences. The features of a logical language can make thoughts and their logical consequences more transparent to subjects, such that 'nothing is left to guesswork'. (BG, §3)

The distinction between transparency and opacity can only be central in explicating a perfect language based on the reading that thinkers must be able to follow the steps of reason and be able to share those steps with other reasoners. Here again, we see that Frege lays out an important link between logical languages and thinkers' capacities for cognition and reasoning; in laying out the linguistic rules with the aim of satisfying the need for the transparency of thoughts.

## CHAPTER FIVE – SENSE

Up to this point, we have concentrated on Frege's notion of thought, without paying much attention to the explanation that a thought is defined as the sense of an assertoric sentence composed of the senses of its sentential components. Frege's notion of a *thought* is constitutively related to senses of expressions in at least two ways: (1) A thought is understood as a structured composition of senses of sentential components, and; (2) According to the famous *Context Principle*, senses of expressions are not grasped in isolation but in the context of the containing thoughts. (FA, x) The *context principle* is stated as: 'never to ask for the meaning of a word in isolation, but only in the context of a proposition' (FA, xxii)

Recall that the truth value of a thought is determined by the relation between the referents of expressions in the assertoric sentence expressing it; namely, the relation between objects and concepts. Objects are distinguishable from concepts in that in contrast to the former, the latter are *unsaturated,* grammatically expressed as predicative. (CO, 193) We also learned that a thought is true if the referred-to object falls under the referred-to concept. (SR, 33) (CSR, 173)[27] Frege's remarks on how senses of expressions can be composed to form a thought indicate that senses of sentence parts are explicable in terms of their contribution to the truth value of that thought. This role of senses can

[27] Frege also mentions objects falling in the proper value range, *i.e.* extension of concepts. (GZ, X)

thus be understood as the *semantic value* of expressions in sentences.

In the previous chapter we discussed how senses are related to signs of a language. Frege explains the notion of *sense* as the content associated with linguistic expressions, or signs and that 'It is via a sense, and only via a sense, that a [...] name is related to an object.' (CSR, 135) However, as was clarified at the outset of this paper, senses of names must be distinguished from the ideas those names evoke in the mind of the subject. Here is an example Frege uses to show this point:

> Anyone who hears the word 'horse' and understands it will probably have straightaway a picture of a horse in his mind. This picture, however, is not to be confused with the sense of the word 'horse'; for the word 'horse' gives no clue to the colour of the horse, or to its carriage when standing still or in motion, or to the side from which it is seen and the like. (L2, 152)

Any sign in a language may evoke different ideas in different subjects and even in the same subject at different times. An idea a subject has, is not fixed in the way senses must be, in order to determine if a thought which has that sense as a component, is true or false. On Frege's view, senses contribute to determining truth values given that their structured composition constitutes a thought. When we understand a sign, we are grasping an intermediary content expressed by that sign linking it to its referent. On this outlook, senses can be considered as the *cognitive* value of linguistic expressions.

In this chapter, we will first review Frege's distinction between informative and uninformative identities. This summary is followed in the second section by a reexamination of a received interpretation of the notion of sense whereby a widely known reading of him as a descriptivist is refuted. In the third section, I focus on the understanding of senses as modes of presentation and/or modes of determination of referents to see if there is any significance in this distinction.

We shall examine more aspects of the two roles senses play; namely, as the cognitive value of expressions, and as the semantic value of expressions, by way of discussing various topics in the remainder of this paper with the aim of understanding these two roles and their relation to each other.

**5.1 – Informative vs. Uninformative Identities**

We reviewed that ambiguity is an important reason Frege does not consider natural languages suitable for conveying logical truths. A name which has more than one referent is clearly problematic for scientific use, but a name can also have more than one sense, even when it picks out the same referent. Frege puts forth a third type of relation between names, senses, and referents whereby he illustrates a crucial distinction.

In *Über Sinn und Bedeutung,* Frege compares two sorts of identity statements; one between a name and itself, *e.g.* '*Hesperus* is *Hesperus*,' and one between two different but co-referring names; *e.g.* '*Hesperus* is *Phosphorous'*. These identity statements, Frege

argues, express different thoughts given that any subject can take one as true and the other as false. It is thereby clarified that it is not the relation between names and referents, which determine distinctions between thoughts. Two sentences can have the same truth value but only because they each contain a different but co-referent name, they express two different thoughts. More generally, the sense of each co-referent name is different. As proof, Frege points to the possibility that any speaker may take one sentence as true and the other as false. Let us review Frege's famous example.

The thoughts expressed by the sentences, 'The morning star is the brightest object in the sky', and 'The evening star is the brightest object in the sky', are not the same, since a subject may not know that those are the names of the same object in the sky. In a word, 'The *Bedeutung* of 'Evening Star' [is] the same as that of 'Morning Star', but not [their] sense'. (SR, 27) The reason two sentences that are identical in every way except that each contains a different name for the same referent, express different thoughts, is that the co-reference of those names may be new information to speakers. The received interpretation of Frege's view of senses is that if there is a difference in the information conveyed by any two signs, they express different senses.

The distinction between informative and uninformative identities shows us an important aspect of senses. It shows that if an identity statement contains new information, sameness of reference of its components does not correspond to the sameness of their senses. This claim exposes an epistemological basis for distinguishing between thoughts.

In sum, the way that the distinction between the thoughts expressed by an informative identity and an uninformative one is explained is that as the classification suggests, there is information conveyed in one but not in the other. This difference in the information then results in the possibility that a rational thinker takes one such identity statement as true and the other as false.

Showing how two co-referent names can result in subjects having differing beliefs, goes to illustrate that aside from names and their referents, there must be intermediary contents which account for the distinction between informative and uninformative identities. This distinction Frege has outlined between such identities is a plausible illustration of the possibility of signs having the same referent but not the same sense.

Alternatively, if co-referring names can have different senses and speakers may take sentences containing them as being true or false depending on which sense they grasp, implies that it is also possible for one name to have a different sense from speaker to speaker. The topic of sense variance among speakers is discussed in the next chapter. At this point however, there is a very important take-away from the comparison between informative and uninformative identities that has to do with what we earlier distinguished as the cognitive and semantic values of expressions.

It was laid out in the earlier chapters that truth values of sentences are determined by what is real; meaning that whether a sentence is true or false depends on the referents of the expressions it contains, not their senses. Therefore, if two sentences are identical in

every way except that they contain two different names for the same referent, their truth values must be the same. That means that co-referent expressions have the same semantic value, even if their cognitive values are different. Thus, simply stated, the semantic value of signs is a function of their reference, while their cognitive value only has to do with their senses. Does this mean that we were wrong, when we stated that on Frege's view, senses of sentence parts are explicable in terms of their contribution to the truth value of that sentence? No. Here is why.

Recall that one of the reasons offered for the difference in senses of two sentences containing co-referent names was that any subject could take one sentence as true and the other as false. Thus, each co-referent name was said to have a different cognitive value, possibly rendering different beliefs for subjects. The epistemic value of expressions can thus be said to supervene on their cognitive value. However, since the names in both sentences had the same referent, the sentences were said to have the same truth value, whether or not subjects judged correctly. Thus, the names had the same semantic value.

This explanation illustrates that there is an important difference between the two roles that senses play. On the one hand, they play a cognitive role when based on the sense grasped, they can then play an epistemic role for subjects who are deciding whether or not to hold a sentence as true. On the other hand, they play a semantic role, wherein the truth of the sentence is determined in the realm of the referents of its components and is independent of any subjects' grasp or belief. The dichotomy which was exposed at the

level of thoughts in the previous chapters, is hereby exposed at the level of senses, by means of the distinction between informative and uninformative identities.

### 5.2 – Not Descriptions

Suppose I have known Judy for years as my neighbor from across the street. Suppose further that we hold the view that the sense I grasp for the name 'Judy' is the description 'the woman who lives across the street', since I have seen her arriving and leaving, doing yardwork and other such seemingly routine activities at various times. Let us say now that due to unusual circumstances Judy does not actually live there but has been visiting at those times. Coincidentally one day, my chatty neighbor Pierre tells me that Judy does not live there and has only been visiting and taking care of her sister all these years, and that in fact she lives in another part of town. Now, if on our view, the name 'Judy' were replaceable with the description 'the woman who lives across the street', then the sentence 'Judy does not live across the street' would be identical with the sentence 'the woman who lives across the street does not live across the street'. Clearly, the latter sentence contains a contradiction while the former does not. The new information I receive from Pierre might surprise me, but not because of the inconsistency of the sentence. My surprise would be caused by the new information I am receiving; that Judy whom I thought was a neighbor, is only a visitor. There thus seems to be something amiss about the supposition that when I grasp the name 'Judy', I have grasped the description 'the neighbor across the street', or that such a description gives the sense of the name

'Judy'.[28] We often refer to things in ways which allow us to attach, detach, or withhold new or existing information about them as we see fit. At the same time, each subject may ascribe a description to a referent which another subject may not.

There are no indications that Frege held the view that *in every case* an object must be picked out by means of particular aspects or properties, expressible as descriptions. He did not venture into spelling out a full-fledged theory about *how* speakers acquire or share the meanings of expressions or proper names in particular. Neither does he specify why signs must express senses, only that they do. He does not remark on the psychological origins of grasping of senses and simply relates them to the way language and cognition are intertwined. He only mentions in passing that we may come to learn about referents by means of experience or inference, and at least when it comes to discourse in natural languages, it is tolerable that we are speaking about the same things.

Moreover, Frege points out that it is hardly ever possible that any of us knows every aspect or property of an object. Russell makes a similar point by stating that although objects are determinable in varying ways, 'there is no backward road from denotations to meanings, because every object can be denoted by an infinite number of different denoting phrases.' (1905, 487) The two philosophers have famously used descriptions as examples for the ways an object can be picked out. This similarity of exposition has

[28] This scenario can be modified to cover cases of cluster of descriptions as well; e.g., "…does not live across the street *and* does not have short hair, …" Judy might be wearing a wig *and* … etc.

resulted in the classification of both their theories as *descriptivist*. The understanding of Frege's theory of reference as a descriptivist view has been the mainstream interpretation of that theory in the literature.[29] Kripke's Naming and Necessity is seminal in this interpretation, as he repeatedly names both Frege and Russell as proponents of the description theory of names.[30]

The label has served the pedagogical purpose of offering passing audiences a surface understanding of Fregean senses but is not an accurate one. For start, these two philosophers offer such diverging views that categorizing them as proponents of the same theory of meaning is implausible. Frege posits *senses* while Russell speaks of *sense data*; notions which are not only different but also discordant. Russell describes sense data as subjective and unique to an individual's consciousness, whereas Frege describes senses as objective and sharable among subjects. My aim here is not to analyze the contrast between these two philosophers, but it is relatively unproblematic to point out that the stark differences in their basic concepts make it questionable for their theories of meaning to fall under the same banner.

Although the reading of Frege as a descriptivist does not always mean the identification

[29] One need not look further than the entry for 'Reference' in the Stanford Encyclopedia of Philosophy which reads: 'According to descriptivist theories of proper names, a particular use of a proper name refers when the descriptive content somehow associated with that use suffices to pick out a specific object or individual. On one standard way of working out this sort of view, one associated with Gottlob Frege (1892) and Bertrand Russell (1911), some particular descriptive content is associated with a given use of a name because the speaker associates this content, in her mind, with the name in question…' (Michaelson, et al. 2019)

[30] Kripke's mentions of Frege in *Naming and Necessity* shall be reviewed below. His potent objection will be discussed in Chapter 7.

of senses with descriptions, such a confusion is possible if one is not a careful reader. In particular, by taking senses and descriptions as fulfilling the same functions, it is possible to conflate their co-reference with an identity between them. For that reason, attempts have been made to clarify the differences between senses and descriptions by philosophers like Dummett (1973, 160-2), and Chalmers (2002, 142). To carry on with our discussion of senses and their roles, it is useful to include a list of reasons for dispelling such a misunderstanding:

- Frege could have easily stated that senses are descriptions, but he did not.
- Descriptions are linguistic entities, whereas senses are not. A description is a string of words structured in a particular way to express a sense and denote an object. Frege lays out the distinction between linguistic entities and their sense clearly enough for such a category mistake to be implausible.[31]
- If senses were descriptions, the sense of a description would consist of another description and so on. This would result in a regress problem. Whatever one's view of Fregean senses might be, such an obvious regress could not have escaped his notice.[32]
- Taking senses as descriptions entails that grasping the sense of an expression is an

[31] Frege has also spoken of senses as being referents; *e.g.*, in propositional attitudes. This topic is worthy of a separate paper.

[32] Russell's theory of sense data as well as some of his explanations of our perception of objects makes a descriptivist reading of him immune to the regress problem mentioned here.

act of cognition identical to grasping the relevant description. Frege uses the metaphor of 'grasp' only for senses of expressions.

- As illustrated by the example above, senses are purported to *pick out* an object for any subject in a way that a description which entails one or more aspects of that object may not.

- A description can entail the *de re/de dicto* problem such that the same description may be true of more than one object. (This argument only poses a problem for indefinite descriptions.)

- Descriptions cannot be void of senses of their own. Not only did Frege not draw such a contrast between descriptions and other linguistic entities, it is also not tenable to take descriptions as a senseless part of the sentences they occur in. If that were the case, the composed sense of such sentences could not be fully structured to form a thought.

- Frege states that the same sense is expressible in different languages. (SR, 27) If a sense was a description, for every name that is expressible in other languages, any description attached to that name must be as well. Yet, there is no guarantee that there is such a pairing across languages.

- A description cannot be understood as being *its own* sense, for the reason stated above that linguistic expressions are clearly distinguished from the senses they

express.

- Frege tells us that senses are not clearly explicable. (TH, 66f)

It is important to note here that despite the above-mentioned arguments, we can only communicate our views about senses by means of language; that is, we cannot avoid speaking about the sense of an expression by using other expressions. In this light, it is inevitable that philosophers use descriptions as *examples* of sense, as did Frege.

Clearly, co-reference between names and descriptions are part and parcel of Frege's account. Frege explicitly asserts, 'The designation of a single object can also consist of several words or other signs.' (SR, 26) He tells us however, that when two expressions are co-referent, their senses are not identical. More specifically, if an object can be referred to by two linguistic expressions, be it two names or, a name and a description, the two expressions have different senses.

In *Naming and Necessity*, Kripke speaks repeatedly of Frege along with Russell and others as proponents of the description theory of names. (*Cf.* pp. 27-31, 53, 58-60, 87f, 88f, 127) On this theory, the referent of a proper name can be fixed by means of one or more descriptions. For instance, 'If 'Joe Doakes' is just short for 'the man who corrupted Hadleyburg', then whoever corrupted Hadleyburg is uniquely the referent of the name 'Joe Doakes''. (1972, 28) On this view, Kripke explains, proper names are synonymous and interchangeable with the relevant descriptions in sentences. (1972, 58) He explicitly

states:

> Frege and Russell both thought, and seemed to arrive at these conclusions independently of each other, that [...] really a proper name, properly used, simply was a definite description abbreviated or disguised. Frege specifically said that such a description gave the sense of the name.[33] (1972, 27)

In more recent years, Kripke writes:

> '[with regards to] whether I was right in ascribing a description theory of proper names to Frege (which certainly agrees with his examples)... Gareth Evans [ ] remarked that certainly Frege, like Russell, had generally been understood in this way. This made it important for me to rebut the theory, whether historically it was Frege's theory or not.' (2008, 208)

This last remark, at least to my ears, implies some misgivings about having ascribed a description theory of proper names to Frege so many years ago.

Burge writes that Frege was 'repeatedly' criticized as a descriptivist, but that 'there is no evidence that he maintained any such general theory. That is, there is no evidence that he held a view that if the sense of a proper name (on an occasion of use) were fully spelled out in language, it would in every case be fully expressed in terms of definite descriptions,

[33] To my ears, Kripke's statement that on Frege's view 'a description gave the sense of the name', indicates that he understood senses just as descriptions. However, this is not the reading of the reviewers of this paper. Sennett argues that Kripke could not have taken senses to be identical with descriptions, since that would be obviously false. Mattey and Sennett comment that Kripke only went so far as stating that Frege promoted the description theory of proper names, and that taking his remarks to mean that he identified Fregean senses with descriptions is not a fair reading.

with no admixture of names, indexicals, or demonstratives.' (2005, 41)

The distinction Frege drew regarding co-referring names, relies on the observation that a sentence such as 'Nixon is Nixon' is uninformative, while a statement like 'Nixon is the 37th US president' is informative to anyone who is, for instance, unfamiliar with where Nixon lies in the order of succession of US presidents. On Frege's view, it would only be the truth values of such sentences that are the same, not their senses, on account of the referring expressions picking out the same referent.

Kripke's use of *intension function* notation to symbolize his interpretation of senses is also worthy of note here. Specifically, it is important to see whether it is possible to use these functions in explicating senses without the vestiges of the descriptivist interpretation. Kripke states that if the function $\phi x$ in the phrase '*the* $x$ *such that* $\phi x$', designates the object which $x$ refers to, then $\phi x$ is the intension of the name $x$. He also states that when there is a description of the form '*the* $x$ *such that* $\phi x$' and only one $x$ fits that description, then $x$ is the referent of that description. Note that what is explained in this claim is that in such a case $x$ and $\phi x$ are co-referent. In that light, the intension function $\phi x$ is not a way of expressing the *sense* of $x$, because $x$ and $\phi x$ do not share a sense, they share a referent. Now, if we take $\phi x$, to be a function which is purported to perform the functions that the sense of x must perform, we can be free of the requiring descriptions to express senses. Use of intension functions can thus be an apt substitute for the descriptivist

interpretation of senses.[34]

For now, we shall note that the objections Kripke brings, have import with regards to the semantic values of proper names and descriptions, since on Frege's view, their cognitive values cannot be the same. We shall discuss Kripke's powerful objection with regards to semantic values of co-referring names and descriptions in Chapter 7. Let us now consider another way Frege speaks of senses.

### 5.3 – The Modes

Frege explicitly accounts for senses as containing the *modes of presentation* of the referents of signs. (SR, 26) If we think of *presentation* as a dyadic relation between something that is presented and a subject to whom it is presented, a *mode* of such can be understood as *a way* for this dyadic relation to obtain. As well, in some of his remarks Frege explains the sense as the *mode of determination* of a referent. The use of the two notions of presentation and determination by Frege has compelled some readers to draw crucial distinctions between these two modes.

One way that senses as modes of presentation are distinguished from modes of determination pertains to issues regarding empty names which was briefly discussed in the chapter on *Language*. Beaney (1996) opines that senses can be disambiguated by differentiating between these two modes such that senses as modes of determination of

[34] Intension functions are indeed used by philosophers since Kripke to characterize Fregean senses; *e.g.*, Chalmers (2002)

referents are the 'basic type of sense', whereas in their capacity as modes of presentation of referents they act as the former 'plus something else'. (1996, 168) On his reading, this other 'something' in the content is only provided when referents are extant and the differentiation between the modes is expected to iron out the problem of senses of non-referring names. The idea is that when there are no referents for names, there is no mode of presentation to speak of. Beaney concedes that Frege himself did not distinguish between the two modes due to his overriding concern with senses in logical and scientific contexts, where names are presupposed to have referents. (1997, 27)

A differentiation between these two modes cannot be textually substantiated. There are many cases where both concepts of *presentation* and *determination* are used in reference to subjects' epistemic access to referents. Let us go through some examples.

In one instance, Frege speaks of a name *B* which denotes an indeterminate intersection of a line and a circle. He explains that when the position *B* on the circle changes and ends up corresponding to *A*, the same point is determined in two ways and now has two modes of determination each of which is given a different name. (BG, §8)

In another example, Frege studies the identity between points of intersection of lines *a* and *b* and, *b* and *c*, connecting the vertices of a triangle to the midpoints of their opposite sides. He states that the names 'point of intersection of *a* and *b*' and 'point of intersection of *b* and *c*' indicate 'two modes of presentation' for the same point. (SR, 26)

A third non-geometric example is one concerning a difference between co-referring

expressions 'Ateb' and 'Afla' as proper names for the same snow-capped mountain. Frege explains, 'An object can be determined in different ways, and every one of these ways of determining it can give rise to a special name, whereby different names have different senses.' (L1, 128)

Some readers may reach for a distinction between the two modes as a sign of his mindfulness of two roles senses play — as the cognitive value of expressions and as their semantic value. Although, it was argued above that these two roles are distinct, it is not very likely that Frege made this distinction by means of invoking these two modes. As I see it, in any of the examples cited here Frege could have replaced 'presentation' with 'determination' or vice versa without altering the claim, since both notions confer the manners in which a referent is epistemically accessible to subjects.

When Frege speaks of modes of presentation and determination interchangeably as delivering the right referent to subjects' cognition, he is considering the epistemological understanding of both. Only when such modes are the subjects' means for uniquely picking out the referents of expressions, can those subjects be in the right relation to the relevant thoughts whereby they can consider their truth value. Nonetheless, it is arguable that a distinction can be gleaned between the two modes from Frege's statement that senses *contain* the objects' modes of presentation. One might for instance claim that an object may be presented in different ways to a subject, but the way that a subject is able to determine it, *contains* one or more of those ways. As a case in point, a subject may

update one of the ways a referent is presented (as in the earlier example of Judy) without modifying its relevant mode of determination.

Nonetheless, on my view, there are two ways of understanding the notion of *determination*. On one construal of determination, the sense of an expression corresponds to the way a *subject* determines that referent, in which case the mode of determination of the referent of an expression is its cognitive, or ultimately epistemic, value. This rendering of determination is, as was the case with presentation, a dyadic relation between subjects and referents of signs. A *mode* of determination is a *way* for such a relation to obtain. Many of Frege's remarks suggest this understanding of determination where this notion is used interchangeably with the notion of presentation to explain the sense of a sign.

The second understanding of the notion of determination comes from a non-epistemic reading of senses; that is to say, independent of our knowledge, but rather dependent on the identifying properties of objects. This rendering of determination is distinct from the one mentioned above in that the ways of determining the referent is not variant amongst speakers but independent of them. Moreover, on this interpretation, determination cannot be characterized as a dyadic relation between subjects and referents, but a monadic one involving the object itself. In this rendering, senses are not understood as the cognitive value of expressions delivering the right referent, but as a stricter kind of semantic value which is the way a referent is picked out without reliance on speakers' epistemic access to the world. The semantic values of expressions are not context-dependent either, since the identifying properties by which a referent can be determined

do not change from context to context.

The ‘stricter’ non-epistemic reading of determination suggests a ‘stricter’ semantic value. We shall discuss this topic at a later point when examining Kripke’s objections to Frege. Before doing so, in the next chapter, we shall consider if the sense of an expression can vary from speaker to speaker and whether there is a minimum requirement for what constitutes a sense.

# CHAPTER SIX – VARIABILITY OF SENSES

In the Chapter on Language, it was reviewed that the notion of sense provides a plausible explanation for the phenomena of homonymy, synonymy and polysemy in natural languages. Speakers adapt to such occurrences in their discourse so long as they manage to speak about the same referents in any given context. In the previous chapter, we discussed Frege's illustration of sense variance using the difference between informative and uninformative identities. In this chapter, we will review what is remarked on with regards to sense variance and consider this feature by different lights. We then study an objection which deals with the logical identity of thoughts and see if our findings about sense variance in natural languages apply to arithmetic as well.

## 6.1 – Sense Variance in Ordinary Languages

Frege uses the now famous *Lauben* example to explain that a speaker can grasp the sense of a sign in the language she is competent in, by way of what she knows of its *Bedeutung*. The example has two parts. In the first part, Frege asks us to suppose that a sentence, 'I was wounded' is uttered by Dr. Gustav Lauben (GL). Leo Peter (LP) who heard GL utter the sentence, relates it to others a few days later, saying: 'Dr. Gustav Lauben was wounded'. A third person, Rudolph Lingens (RL) was present on both occasions. Frege imagines a scenario where RL does not know that both sentences (uttered by LP and GL) are about the same person. He claims that if in fact RL does not know that LP is referring

to the same person who uttered 'I was wounded' earlier, we should conclude that the two utterances express different thoughts, despite stating the same thing about the same person. In this first part, the claim is that if it is possible for the bystander to not know that the person referred to in the two sentences are the same, those sentences express different thoughts. This claim is of course no different than what we discussed in the section on informative and uninformative identities, where we found that two co-referent names give us two senses; *i.e.,* two cognitive values which then result in two thoughts.

In the second part of the example, we have a fourth person, Herbert Garner (HG), who happens to hear LP utter the sentence 'Dr. Gustav Lauben was wounded.' However, HG and LP do not have the same information about GL. Here again, Frege reiterates the claim that they therefore must be associating different thoughts with the same sentence. However, he adds here that as far as this proper name is concerned, HG and LP 'do not speak the same language'. (TH, 66)

To clarify this move, Frege acknowledges that it is 'awkward' to claim that LP and HG, who presumably both speak German, do not share a language. He proceeds to remedy the matter by suggesting a different proper name for each cognitive value; one proper name corresponding to the way LP knows GL and another for the way HG knows him. It is then clarified that if we ask LP or HG to judge the truth of these two sentences, it would be possible for either to hold one as false and the other as true. By supplying two names to refer to the same person, Frege aims to elucidate that the difference between the

thoughts expressed 'must be recognized'. (TH, 65-6) This reminds us of the emphasis on the stipulation that signs of a *perfect* language must be unique and that any difference in sense must be reflected in a difference in the sign used. We are in effect learning again that if a proper name has more than one sense, varied senses are not transparent to subjects, unless the senses are distinguished by means of the difference in the signs that express them.

There is still another way that a contrast between two thoughts expressed by the same sentence can be detected. Frege states that HG knows that GL was the only person born on the 13th of September, 1875 in N.N., but LP does not. Now, although both HG and LP take the sentence 'GL is wounded' (Sentence 1) as true; if they are then asked about the sentence, 'The person born on the 13th of September, 1875 in N.N. is wounded' (Sentence 2), they cannot agree on its truth, since they do not share the knowledge of GL's date of birth. Here, we observe that two subjects may consider the same sentence and even take that sentence to have the same truth value, but still grasp different thoughts. This is done by examining what can be inferred. In the last part of the example, HG and LP take the truth value of Sentence 1 to be the same, but they cannot both infer Sentence 2, because one knows the added premise and the other does not. Frege concludes that Sentence 1 expresses two different thoughts. Note however, that we can also deduce the confirmation of the two roles of senses from this part of the example. I shall explain.

As was reviewed, when two speakers have different ways of picking out an object, it

usually results in their grasping different senses. That difference in sense can remain unnoticed or it can come to view when they infer other thoughts. Thus, for a sentence containing a name which has different senses, that name can have different cognitive values in that sentence, despite having the same semantic value. The name GL has different cognitive values in Sentence 1, even though it has the same semantic value. Note that it is not a feature of language that causes these two values to come apart in this sentence, but the fact that speakers HG and LP have different knowledge about the referent of the name GL.

We reviewed, by way of the distinction between informative and uninformative identities, that linguistic inadequacies of a natural language allow the same name to have different cognitive values. However, in a case where the difference in cognitive values is found by means of the inferences allowed, sense variance can only be explained thoroughly in terms of subjects' epistemic access to referents. Speakers cannot know all the varied senses a name expresses, since they seldom know every fact about the referent. Frege tells us that 'Comprehensive knowledge of the *Bedeutung* would require us to be able to say immediately whether any given sense attaches to [a name]. To such knowledge we never attain.' (SR, 27) The stipulation of a unique sign for each sense in perfect languages prevents sense variance and in that way, the possibility of disparate inferences can also be avoided.

Many scholars interpret senses of natural language expressions as variable among

speakers. For some however, the association between names with differing senses, is not a foregone conclusion, since passages like the following seem equivocal on the matter:

> In the case of an actual proper name such as 'Aristotle' opinions as to the sense may differ. It might, for instance, be taken to be the following: the pupil of Plato and teacher of Alexander the Great. Anybody who does this will attach another sense to the sentence 'Aristotle was born in Stagira' than will a man who takes as the sense of the name: the teacher of Alexander the Great who was born in Stagira. (SR, 27f)

The mention of '[different] opinions as to the sense', makes a non-variant reading of sense plausible. On the face of it, it implies one sense, *the* sense, for a name, such as Aristotle, about which subjects may have different opinions. This suggests opinion variance rather than sense variance. However, Frege also explicitly calls it 'variations in sense' in the same footnote. A reader must decide whether for Frege any given name has only one sense or whether there can be more.

May (2006, 112) argues that on Frege's view senses are invariant among speakers and that it is instead their language that varies. He interprets the 'Dr. Lauben' example in support of his view, arguing that this case is in fact where Frege explicitly tells us that the two subjects who grasp different senses for a name, 'do not speak the same language'. He also cites Frege's claim that 'for every proper name there shall be just one associated manner of presentation of the object so designated'. (TH, 66) Both these statements,

taken on their own merits, are interpretable to be contrary to the reading that allows sense variance.

May expounds on what Frege counts as a *language*[35] and deduces that, '*if* speakers speak the same language, then they associate the same sense with any given proper name'. (2006, 121) The idea is that any language must be distinguished by the set of unique senses attached to its symbols. Moreover, variance of sense can only arise due to 'diachronic change of language', which he describes as instances where a word has one sense on one occasion and a different sense on another. Varied senses are then purported to 'obtain between speakers synchronically' only if subjects are speaking *two languages* and on May's view, this is exactly what occurs in the *Lauben* example. (2006, 126)

A way in which this association of sense variance with linguistic symbols may be refuted is in the analysis of indexicals. Burge (1979) calls it a 'basic misunderstanding' to identify the two notions of sense and linguistic meaning by showing their differences in cases which are easiest to see; the senses of indexicals. In these cases, the time of utterance, or who the speaker is, or which direction one points towards, etc., can be considered as part of the thought expressed. Burge points out that Frege took these matters into account in his notion of sense and clearly the senses of indexical expressions such as 'I', 'today', 'there', etc. cannot be identical to their linguistic meaning.

[35] This is a cursory review; for the complete account see May (2006)

We have earlier brought ample textual evidence that on Frege's view senses may vary among speakers of the same natural language. It may be plausible to understand his statement about HG and LP not speaking the same language in view of his assessment that the inadequacies of ordinary languages preclude them from being used for scientific and/or logical purposes. We reviewed above that he devises a logically perfect language in order to be free of such problems. We can thus interpret that statement in the *Lauben* example as an emphasis on the rule for distinct symbols to have distinct senses. If Frege did not deem senses of names in natural languages to be variant, he would not see the need for such a rule.

May also subscribes to the view that for Frege natural languages are 'notorious offenders' of the one sign/one sense rule. He explains that, 'unlike logically perfect languages, such as the *Begriffsschrift*, they will contain homonyms, signs whose symbols agree, but whose senses do not.' (2006, 118) He explains that the inadequacy of natural languages is essentially the result of the occurrence of *homonyms* and that the distinction between these and perfect languages hinges on their adherence to this stipulated rule.

Since May defines a homonym as a linguistic expression with more than one sense, then it may have one sense for one speaker and another sense for another and we can take it to be possible for different speakers to grasp different senses for the same expression. Nothing precludes this from occurring synchronically. On the face of it, the outlook May suggests seems close enough to the understanding of sense variance discussed here.

However, that is not the case. Taking linguistic features as the cause for variation of sense differs from taking cognitive values of expressions as the culprit. Here is why.

The assessment of sense variance put forth by May is *language-relative*, in that such variance results from the general features of language(s), whereas the outlook we were considering earlier is *subject-relative* or *speaker-relative*. The reading of sense variance put forth here involves the possibility that one subject might pick out the referent of an expression in a way that is different from how another subject picks out that same referent. On such a reading, subjects can speak the same ordinary language but have varied epistemic access to the referent of a name and thus grasp different cognitive values for that name. Notably, neither of these two views denies that natural languages have features which result in sense variance. However, the speaker-relative view holds that aside from or in addition to features of language, speakers' differing knowledge of the world contribute to it.

What May suggests as invariance of senses, as I see it, is his rejection of the speaker-relative view. As a consequence, his view cannot entail a distinction between the two roles of senses as cognitive and semantic values. The contrast between May's view and the outlook presented here is illustrated in the interpretation of the last part of the Lauben example. Although the semantic value of GL was the same and although both subjects took the sentence as true as a result, they grasped different senses for GL. This was so because the name GL had different cognitive significance for them, resulting in each

making a different inference. Their distinct inferences had an epistemic, rather than a linguistic basis.

On another note, some philosophers associate variations in sense to speakers' non-cognitive faculties, which Frege occasionally alludes to as ideas. Although, Frege speaks of ideas as sources for knowledge in humans, he states that the same sense is not always connected, even in the same person, with the same idea. (SR, 29) As was put forth in the previous discussions, Frege maintains that it is our cognition of thoughts about reality, not our ideas of it, that enable us to understand the world and exchange information.

Now, even on the speaker-relative reading of variance, most readers agree that Frege does not abandon his normative view of senses. Given Frege's remarks, it is implausible to take senses as being arbitrary, erratic or 'exotic' in the way some philosophers interpret them. For instance, senses are not randomly assigned to expressions as Davidson envisions such that 'hippos can be mistaken for oranges.' (1968, 145)

It was cited earlier that it is not always knowable if a particular sense belongs to a particular expression. Nonetheless, despite the view that speakers can grasp different senses for the same expression, Frege, both explicitly and implicitly, asserts minimum *constraints* for sense variance in expressions of natural languages. For start, His mention of linguistic competence (SR, 27f) and customary senses (SR, 28), indicate an acknowledgement of *conventions* in our use of expressions. But more importantly, Frege asserts that in everyday conversation, 'so long as the reference remains the same, [...]

variations of sense may be tolerated'. (SR, 27f) This remark indicates what Frege deems central to the understanding of the notion of sense; that the ability to agree or disagree about statements depend on whether the *same* referent is considered in the mind of each speaker. In this light, the cognitive and semantic roles of senses can be different from each other, so long as the purpose of the discourse is served.

We can recall that in the example of my thinking that Judy is my neighbor and hearing Pierre's testimony that she is only a visitor, my understanding of the sentence 'Judy does not live across the street' was only possible because the sense I grasped for the name 'Judy' delivered the right referent. Although the name 'Judy' did not have the same cognitive significance for Pierre and me, it had the same semantic value in the sentence above. The cognitive value of a linguistic sign is the mode of determining its referent by subjects or the mode that its referent is presented to subjects. The semantic value is the contribution made by that expression in determining the truth value of the containing sentence. As we said earlier, the semantic contribution of a name involves its referent, where if the referred-to object falls under the referred-to concept, the sentence is true. Only if the referent of the name 'Judy' does not fall under the concept 'the neighbor across the street', the above sentence is false, whether the information each speaker has about that referent is accurate or not.

Science deals with truth-evaluable sentences with extant referents, as it is the referents that determine whether a given sentence is true or false. The cognitive significance of a

referring expression may be different for different speakers of a natural language. Still, that expression, if it has a referent, must pick out that referent by speakers in order for them to be in the right relation to the thoughts that contain them, which as we said above, is when they can judge that thought's truth value. The constraint we have found here is a plausible one when it comes to expressions which have a referent. However, what does this constraint tell us about empty names?

Frege is unequivocal that senses of mock proper names are not the semantic value of expressions and that speakers are grasping senses for a reason that is different from ascertaining truth values of sentences. However, if as we stated earlier, the cognitive significance of expressions is the way that different speakers pick out referents of names, we are still at a loss to understand what the role of senses of empty names may be.

Recall that Burge (1979, 414) gave a plausible explanation of Frege's view of empty names by stating that they provide non-extant but *customary references*. By taking customary referents as the referents of at least common mock names, we can think of them as *customarily presented* to speakers as well as *customarily determinable* by them. Thus, the requirement for subjects to grasp a sense which delivers the 'right' referent, albeit a customary one, can be considered as senses playing a cognitive role. Given these considerations, communication is norm-governed among speakers even for names like *Santa Claus* and *unicorns* which deliver a sense and have non-extant but commonly recognized mock referents. For sentences containing empty names with customary

references or well-formed expressions, the general idea is that they have a cognitive value which functions under a pseudo or mock semantics. Burge's explanation can thus be a plausible one when it comes to the role of senses as mock cognitive values even if one speaker grasps a different sense for a name like *Santa Claus* from the sense that another speaker grasps, so long as the customary referent of *Santa Claus* is picked out.

The interpretation of cases of grammatically well-formed expressions is somewhat different. Such expressions are composed in a way that makes it possible for the sense to be grasped, if only to judge that the referent does not exist. In these cases, if the expression can be understood in the subjunctive mood, as if there *was* a referent, *e.g.* if *the King of France* referred to someone, then given that the expression is well-formed, the referent could possibly be picked out in subjects' cognition. Of course, given that there is no such a referent the process ends with no reference, but the content expressed can be understood as a sense. It is notable that such a process occurs before the speaker can recognize that the referential intension comes up empty. The sense of a non-referring name can therefore function as its cognitive value without also being its semantic value.

Although the sense of an expression may vary from speaker to speaker, Frege's minimum requirement for assigning senses to expressions in natural languages is that they must deliver the right referents to speakers' cognition. If the sense of an expression is explained as only *a* way that its referent is presented, but that way does not uniquely pick out the referent for a speaker, the speaker has not fully grasped the sense. This is so because the

above-stated requirement is not satisfied. If a mode of presentation does not fulfill the role Frege outlines for senses, or does so only partially, then it is not considered the sense of a sign. Frege's claim is that so long as the right object is picked out by each speaker, the way that each speaker determines that object is not consequential in most ordinary cases. We discussed further that a discordance between the cognitive and semantic value of expressions is often an issue when it comes to science.

In sum, Frege's remarks about sense variance in natural languages can be understood in this way: In most ordinary cases so long as the right object is picked out by each speaker, the *mode* in which each speaker *determines* that object, or the *mode* in which that object is *presented* to each speaker, may vary. The reason this variance is tolerated is that in ordinary discourse, any discordance between the cognitive and semantic value of expressions is not as consequential as it is in science. We shall thus state this as a maxim, which we shall call the *Minimum Norm* or the *MN* maxim:

> ***MN***: *At least when it comes to ordinary languages, the minimum requirement or norm for assigning varied senses to expressions, is for those senses to deliver the right referents to speakers*.

This requirement demonstrates a further element as regards Frege's outlook on a normative account of the two roles senses play. If we accept that senses as the semantic values of expressions in a sentence are explicable in terms of their contribution to the truth of the thought expressed, then the semantic role of senses take precedence over

their cognitive role. In other words, if discourse is truth-driven, the role of thoughts and senses in general hinges on providing the right semantic values. The primacy of truth in Frege's outlook is thus confirmed once again.

### 6.2 – Sense Variance in Arithmetic

Frege invented logical notations in the *Begriffsschrift*, including the quantifier notation (BG, §11), thereby axiomatizing propositional and predicate logic. In doing so for arithmetical propositions and inferences, including those that conveyed generality, he tried to demonstrate that arithmetic can be reduced to one comprehensive logical theory. The features of a logical language reviewed earlier, in the chapter titled *Language*, are at least partly embedded in the structure of mathematics, *e.g.,* the use of functions and arguments. According to Frege, 'one would do violence if he were to distinguish between subject and predicate in [mathematics]'. (BG, §3)

In this section, we shall review some of Frege's remarks on the characteristics of the language of arithmetic which he deems conducive to logical analysis. We shall then consider what these explanations reveal about the relation between logical contents and sense variance, and thus be more prepared to consider his criterion for identity between two or more thoughts when it comes to a logically perfect language.

The linguistic form of arithmetical statements is equations and inequalities. On Frege's outlook, the referent of a sentence in arithmetic, just as it is for natural languages, is either the True or the False. For instance, 'what '$2^2 = 4$' means is the True just as, say, '$2^{2'}$ means

4. And '$2^2 = 1$' means the False.' (FC, 13) Frege states that a complex expression such as '$2 \cdot 2^3 + 2$' means the same thing as '18' or '$3 \cdot 6$', and that, 'What is expressed in the equation '$(2 \cdot 2^3) + 2 = 18$' is that the right-hand complex of signs has the same meaning [*i.e.* referent] as the left-hand one.' (FC, 3)

Frege also explains that in arithmetic when two expressions mean the same thing, or have the same referent, they are interchangeable in sentences; for instance, we can replace '$2^4$' by '$4 \cdot 4$'. It is in fact possible to present the same referent by way of *infinitely* many compound expressions. However, although different expressions may have the same meaning, they do not have the same sense. Frege is as clear about the distinction between sense and referent in arithmetic as he is for natural languages. There are many explicit examples of him citing arithmetical expressions with the same reference but different senses. Here are two such instances:

- 'We must distinguish between sense and *Bedeutung*. '$2^4$' and '$4 \cdot 4$' certainly have the same *Bedeutung*, *i.e*. are proper names of the same number; but they have not the same sense; consequently, '$2^4 = 4 \cdot 2$ and '$4 \cdot 4 = 4^2$ have the same *Bedeutung*, but not the same sense (*i.e*., in this case: they do not contain the same thought)'. (FC, 14)
- 'I distinguish from the *Bedeutung* of a name its *sense.* '$2^2$' and '2 + 2' do not have the same *sense,* nor do '$2^2 = 4$' and '$2 + 2 = 4$' have the same *sense.* (GZ,

§3)

Although in both natural languages and arithmetic, two expressions may have the same referent but different senses, a crucial difference between them is that in arithmetic, two different signs cannot have the same sense, even if they are co-referent expressions. In almost all cases, distinct arithmetical expressions have distinct senses. As was explained above, there is different kinds of ambiguity in natural languages. But in arithmetic (insofar as it is akin to a logically perfect language) the difference in senses is transparent, *i.e.* can be detected from the difference in signs. This is in contrast with the opacity of senses in natural languages.

To be clear, again, this contrast of transparency vs. opacity of senses pertains to whether or not we are able to distinguish senses by way of signs —*i.e.* whether or not the sameness or difference in senses is transparent or opaque from the signs used in a language. In natural languages we cannot know whether two signs have the same sense but in a logically perfect language, which to some extent is realized in arithmetic, each sign stands for a unique sense, such that any difference in senses is reflected in a difference in signs.

In some remarks, Frege explains the distinction between the senses of co-referent arithmetical expressions in terms of subjects' cognition. For instance, he states,

> [T]he sense of '$2^3 + 1$' is [] different from the sense of '$3^2$' even though we have the *Bedeutung* as the same, because a special act of recognition is required in order to see this. (LR1, 152-3)

Notably then, Frege's sense/reference distinction in arithmetic, as was the case for natural languages, involves subjects' cognition. This outlook was discussed in the first chapter where we considered why Frege presents an objective view of senses on the basis of the cognitive faculties of thinkers. In this remark we learn that two distinct expressions in arithmetic have two distinct senses, and that in general, if grasping two distinct signs in arithmetic, requires distinct acts of cognition (by thinkers doing N-thinking), they have different senses.

We saw earlier that for some grammatical variations of natural language, as for instance the passive vs. active arrangement of a sentence, the thought remains the same. However, for arithmetic, Frege's view seems to be that even in cases where two expressions like '3+1' and '1+3' are co-referent, a distinction in the arrangement of signs results in distinct senses.[36] Frege emphasized on rigorous logical steps for explaining any inference such that understanding the consequences of each truth can be explained by means of those steps. In that sense, the arrangement of signs in an arithmetical sentence can be important in some cases if they can make a difference in the steps for a proof. A difference in senses can perhaps be understood in terms of the need for different acts of cognition, rendering an identity such as '3+1=1+3' as informative. If this was not so, we would not be able to explain the commutative property of arithmetical identities, a property which is based on a distinction in the arrangement of arithmetical signs.

[36] My thanks to Adam Sennett for raising a question about this sort of difference in arithmetic.

In this section, we discussed how arithmetical sentences which are equipollent (and even have the same components) can express distinct thoughts, given that there are distinct acts of cognition to advance in the logical steps necessary for arriving at their truth or falsity. In the next section, we shall see how the analysis of a particular remark by Frege brings this interpretation under scrutiny.

### 6.3 – Van Heijenoort's Objection

Many of Frege's interpreters have put much effort into spelling out Frege's criterion for identity of thoughts expressed in either a natural or a logically perfect language, given its importance in understanding his outlook. In a short essay, van Heijenoort (1977) cites Frege's examples of such identity in natural language cases like the passive/active shift and other transformations, concurring that: 'Language has means of making now one, now another, part of the thought appear as the subject'. However, he proceeds to show a discrepancy pertaining to the sense/reference distinction, arising from what he views as the criterion for determining when arithmetical sentences express the same thought. He takes this discrepancy to be unresolvable and gathers that given the differences in the remarks he cites, Frege's views regarding a criterion for identity of thoughts are inconclusive.

Van Heijenoort focuses on two important passages, one of which is the excerpt below cited from Frege's *Letter to Husserl*, dated 9 December 1906, which we shall henceforth call *Excerpt 1*:

> Now, to decide whether sentence A expresses the same thought as sentence B, on the assumption that neither of the two sentences contains a logically evident component-having-sense [*Sinnbestandteil*], only the following means seems possible to me. Namely, if the assumption that the content of A is false and the content of B is true, as well as the assumption that the content of A is true and the content of B is false, leads to a logical contradiction, and if we can ascertain that without necessarily knowing whether the content of A or of B is true or false and without using any laws but purely logical ones, then nothing can belong to the content of A, so far as it can be adjudged true or false, that does not belong to the content of B […]. No more, with our assumption, could anything belong to the content of B, so far as it can be adjudged true or false, that does not belong to the content of A. Hence what in the contents of A and B can be adjudged true or false coincides; only this is of concern to logic, and this is what I call the thought expressed by A as well as by B.

Van Heijenoort interprets this passage to clearly explicate the criterion for identity of two thoughts to be logical equivalence between the two sentences expressing them. Moreover, he maintains that such a criterion puts our understanding of Frege's notion of thought on 'slippery ground', since it is incompatible with Frege's sense/reference distinction. He explains that given Frege's logicism about numbers, arithmetical truths are logically derivable from one another, and any denial of one such truth while accepting another leads to a logical contradiction. Consequently, he observes, all logically equivalent sentences of arithmetic, *e.g.*, '2 • 2=4' and '3+2=5', will end up expressing the

same thought. (van Heijenoort 1977, 105-6)

The second passage which van Heijenoort focuses on, is written in the same year as the letter to Husserl. We shall call this passage *Excerpt 2*. Frege states:

> Now, two sentences A and B can stand in a relation to each other such that anyone who accepts the content of A as true must straight away [*ohne weiteres*] accept the content of B, too, as true, and also that, conversely, anyone who accepts the content of B must immediately [*unmittelbar*] accept the content of A (*Aquipollenz*), and here it is assumed that there is no difficulty in apprehending the contents of A and B. [...] I assume of each of the two equipollent sentences A and B that there is nothing in its content that must be at once immediately accepted as true by anyone who has grasped it correctly. [37]

As was stated, van Heijenoort's observation is that in *Excerpt 1*, the criterion is logical equivalence, established on 'purely logical' grounds. In *Excerpt 2* however, he reads Frege's concern to be what can be 'immediately recognized' by subjects. This consequential difference between the two passages, on his view, cannot be coherently explained.[38]

[37] Van Heijenoort cites it directly from a manuscript: *Nachgelassene Schriften und wissenschaftlicher Briefwechsel*, vol. 1, written by Frege in 1906 (1969, 213-4).

[38] Both passages do not differ in any substantial way from other translations; (Frege Reader, Cf. 305-6) and (MLD, Cf. 213) Van Heijenoort mentions a similarity between the two texts; namely between the last

To analyze this objection, we can first sum up Frege's arguments in *Excerpt 1* by way of the following premises[39]:

- If Necessarily [~A & B -> P&~P and A & ~B -> P & ~P] then [Thought A = Thought B]
- If Necessarily [~(~A & B) and ~(A & ~B)] then [Thought A = Thought B]
- If Necessarily [ A iff B ] then [Thought A = Thought B]
- If Necessarily [A & B] or if Necessarily [~A & ~B] then [Thought A = Thought B]

These premises establish logical equivalence (*LE*) between two sentences as a necessary condition for identity between the thoughts they express. Nonetheless, if *LE* is the criterion for identity of thoughts, it must not only be a necessary condition, but a sufficient one as well, so that the above-mentioned premises are also true in the 'only-if' direction. Hence, it must *also* be the case that:

- If Necessarily [Thought A = Thought B] then [A & B] or [~A & ~B] ; *et al.*

The sufficiency of logical equivalence for identity of thoughts can be plausibly drawn from the start of the first passage: 'to decide whether sentence A expresses the same thought

sentence in this second passage and this clause in the first: 'on the assumption that neither of the two sentences contains a logically evident component-having-sense'. This qualification is presumed to address what Frege talked of as 'self-evident'. (For a discussion of the role of self-evident truths for Frege Cf. (Burge, Frege on Knowing the Third Realm 1992).) An additional similarity which van Heijenoort does not mention but is important to note is that in both remarks Frege explains that content such as mood, feelings or ideas should be excluded from what is of concern to logic. The explanation shows that Frege is as much concerned with clarifying what lies outside the determination of identity of thoughts as what is included therein.

[39] My thanks to Bas van Fraassen for suggesting the formulation of this argument and to Rohan French for his review of it.

as sentence B, […] only the following means seems possible to me.' Thereafter, Frege spells out the *LE* condition between A & B. It is thus arguable that at least in this passage, Frege intended to put forth *LE* as not only necessary, but also sufficient for identity between thoughts.

Alternatively, in *Excerpt 2*, the criterion seems to hinge on subjects' immediate recognition of equipollence between the sentences involved. For two thoughts to be the same, it is required that when subjects accept one sentence as true, they immediately recognize the other as true as well. The same goes for falsity. The role of subjects' cognition is thus prominent in *Excerpt 2*.

The reader may interpret an indication of reliance on subjects' cognition in *Excerpt 1*, based on a qualification Frege mentions, namely, 'so far as [a content] can be adjudged true or false'. In addition, for two sentences to be immediately adjudged as equipollent (as mentioned in *Excerpt 2*), those two sentences must not be adjudged as contradictory with one another (as stated in *Excerpt 1*). But still, the difference van Heijenoort detects between the two passages is noteworthy. Frege's announcement in *Excerpt 1* that contradictions are determinable 'without necessarily knowing whether the content of A or of B is true or false and without using any laws but purely logical ones', puts the determination of identity of thoughts outside the purview of the content which can be grasped by subjects, and solely within the boundaries of the relation between truths; not

between what is 'held to be true', but 'what is true'.[40]

In the end of the first letter, Frege asks if equipollent propositions are also 'congruent' or identical. He answers, 'This could well be debated for a hundred years or more. At least I do not see what criterion would allow us to decide this question objectively.' (Ibid.) But in the second letter, which seems to be in response to Husserl writing back in the interim (which apparently with so much of Husserl's correspondence to Frege is lost), he seems to provide the answer which eluded him. This is when he writes the first excerpt above and effectively brings home the point that if two sentences are logically equivalent, the relevant thoughts are the same.

Some philosophers have simply rejected that Frege could have put forth *LE* as the criterion for identity of thoughts, maintaining that subjects' cognition must have the primary role in assigning senses. Peacocke (1988) interprets Frege in this way: "[Thought] *p* is identical with [Thought] *q* just in case: necessarily any rational thinker judges that *p* iff he judges that *q*." Schellenberg (2012) argues that, 'two sentences *A* and *B* have the same sense iff (i) anyone who understands both *A* and *B* and takes *A* to have a certain truth-value is rationally committed to recognize that *B* has the same truth-value and vice versa, and (ii) the understanding of *A* is constitutively connected to the understanding of *B* and vice versa.' She maintains that Frege's criterion is therefore not logical but rather *cognitive*

[40] Refer to the discussion in Chapter 3 regarding this distinction.

equivalence. These philosophers are clearly not convinced that Frege's stated criterion of identity between thoughts in *Excerpt 1* is logical equivalence, since that would be a refutation of the role of subjects in determining such identity.

Moreover, in the last section, we reviewed that a feature of arithmetic is the transparency of the senses of its signs. We saw that any difference between senses of arithmetical expressions can be detected in a difference between signs as well as their arrangements. We also found that a difference in senses, corresponds to a difference in subjects' acts of cognition or grasp of those signs. The interpretation that distinguishes between contents grasped for distinct arithmetical truths, does not cohere with taking logical equivalence as the criterion of identity between thoughts. We may then ask: What is the explanation for the incoherence pointed out by van Heijenoort?

On my view, there are two possible explanations. On one reading, the statement, 'nothing belongs to the content of one sentence insofar as it is the content which is truth-evaluable that does not also belong to the content of the other' is a statement about the judgable content of sentences in the same spirit as his other remarks about the cognitive significance of expressions, or in this case sentences. On such a reading, the cognitive as well as the logical equivalence of sentences, are together necessary and sufficient for identity of thoughts. Such an interpretation is aligned with the reading that Peacocke and Schellenberg approve of.

An alternative way of explaining the incongruity of *Excerpt 1* remark, is to consider it as a

metalogical rule where the content of sentences do not enter into the consideration of generality of relations between truths. In other words, when it is the rules of logic that are at issue, it is not the cognitively graspable content of thoughts but their truth value that should be of concern.

Frege tells us that, 'in every judgement, no matter how trivial, the step from the level of thoughts to the level of Bedeutung (the objective) has already been taken' (SR, 34), and that assertoric sentences are proper names for (refer to) their own truth value. (GZ, §2) He explains that the True and the False are objects which can fall under other concepts. (SR, 34) If each thought refers either to the True or the False, then all logically equivalent sentences are co-referent. If he is considering identity between two signs as two ways of determining the same referent (BG, §8), he may be considering identity between two thoughts in that sense in *Excerpt 1*. Note that Frege has also stated that:

> In logic, one must decide to regard equipollent propositions as differing only according to form. After the assertoric force with which they may have been uttered is subtracted, equipollent propositions have something in common in their content, and this is what I call the thought they express. This alone is of concern to logic. (LH1, 102)

This claim is immediately followed by rules of propositional logic concerning conjunction, modus ponens, negation, etc., using letters to represent propositions and drawing distinctions by way of analysis akin to truth tables. (LH1, 304)

If the second explanation sounds plausible, it is another consequence of the two separate roles thoughts play. The two accounts of the objectivity we have been expounding on in the paper is showing itself in such an approach to identity of thoughts. From the point of view of independence of the truth of any thought from thinking subjects, two thoughts are identical if they have the same exact logical role, which is to say they have the same role when it comes to the relations between truths. On the other hand, from the perspective of the intersubjectivity of thoughts, two thoughts are the same if they are deemed so by a norm-governed act of cognition—*i.e.* N-thinking. In other words, competent thinkers who find one true (false) will find the other true (false), and such thinkers will also draw the same inferences from both, given the same premises. (BG, *Cf.* §3) From the latter point of view, if two sentences present any difference of cognitive significance, they do not express the same thought.

# CHAPTER SEVEN – KRIPKE'S ANALYSIS

In previous chapters, we reviewed Frege's emphasis on the primacy of truth and his arguments using that tenet in support of his notion of sense. It was shown that thoughts fulfill two roles which are demonstrably distinct and whereby two accounts for the objectivity of thoughts come to view. In subsequent discussions, we also examined how these two accounts pan out at the level of senses and the dichotomy of the roles assigned to them. In this chapter, the roles of senses shall be discussed by way of examining Kripke's main objection to Frege. In particular, the differentiation Kripke draws between rigidity and contingency by ascribing the former to proper names and the latter to descriptions, will be analyzed.

## 7.1 – Kripke's Objection

In Section 2 of Chapter 5, it was mentioned that Kripke was influential in promoting the view that to this day takes Frege to be a *descriptivist;* namely, the view that takes senses to be descriptions. In that section, many reasons were offered to show that this interpretation does not cohere with Frege's explications of *sense*. As I also mentioned, Kripke often brings examples of coreference of names and definite descriptions when he speaks of senses, drawing an identity between senses of those names and descriptions. We mentioned that in later remarks, Kripke somewhat conceded that he was rushed into

taking Frege as a descriptivist. (2008, 208) In this section, the focus will be Kripke's lucid examination of the tension in the roles assigned to senses. To that end, a brief review of his central claims on that topic will follow below.

Setting aside complications pointed out by Donnellan, Kripke (1972, 24-5) asserts that by 'the referent of a definite description' he means the object *uniquely* satisfying the conditions in that description.[41] He qualifies this explanation by adding that although it is uncommon, phrases of the form of a definite description can sometimes be used as names. (26) If the referent of a name is the object uniquely satisfying the conditions of a description, Kripke calls that description a *rigid designator*.[42] As he attaches the notion of rigid designation with Fregean senses, he converges on the role of senses as the semantic value of expressions. Note that in his notion of rigid designation, the explanation is not about what each thinker may know of an object, but whether an object can be designated uniquely by satisfying the conditions of a description. The notion of rigid designation is thus strictly related to how reference is fixed and whether it is possible to do so based on an object's unchanging properties. This notion is related to what we spoke of as the non-epistemic or mind-independent modes of determination of objects.

Kripke also expounds on the epistemic role of senses, which is to say he follows Frege's view that references are picked out by speakers' knowledge of them. However, to

[41] Citations with only page numbers in this chapter refer to (Kripke, Naming and Necessity 1972)
[42] We shall explain how he modifies this definition in later remarks.

explicate senses, his strict focus is on descriptions whereby it is the properties associated with an object which are purported to uniquely determine that object for speakers. For example, he states,

> [I]f I use the name 'Napoleon', and someone asks, 'To whom are you referring?', I will answer something like, 'Napoleon was emperor of the French in the early part of the nineteenth century; he was eventually defeated at Waterloo', thus giving a uniquely identifying description to determine the referent of the name. (28)

Kripke's claim coheres with Frege's explanation on the reading that if an expression designates an object, subjects grasp that object's modes of presentation/determination. This is what we earlier described as the way that *subjects* pick out the referent of an expression; namely, the cognitive significance of an expression. We concluded that the modes of determination of an object on the epistemic construal are the ways that subjects have epistemic access to an object; *i.e.* how they know the object.

Kripke's interpretation of sense variance likens the account presented in the last chapter. He takes Frege to hold that different people may differ in their ways of determining what a name designates. Kripke interprets Frege's 'Aristotle' footnote to mark the general 'looseness' of reference in natural language. However, he also observes that the properties that pick out a referent for any speaker, or as he puts it, the descriptions one

gives to substitute for a name, may only be contingently true of that referent. He states,

> Some people may give one sense to the name 'Aristotle', others may give another. But of course it is not only that; even a single speaker when asked 'What description are you willing to substitute for the name?' may be quite at a loss. In fact, he may know many things about him; but any particular thing that he knows he may feel clearly expresses a contingent property of the object… something we could discover to be false. (30)

This simple observation sets up Kripke's main objection to Frege's explication of senses as cognitive values. He brings many examples of speakers taking a description which may have been otherwise, as the way to identify an object. These examples show that not every property known of an object *necessarily* fixes that object in every world. He points out that even a property we thought true of an object in the actual world, may turn out to be false. An example of the latter case is when the mode of determination of an object for speakers is based on a common but erroneous belief.

Kripke then asserts that since senses are associated with the semantic values of expressions, any contingent property that we may know of a name cannot be part of the sense of that name. To put this objection in the terminology we have used so far, Kripke's observation is that when an expression's cognitive value is grasped by way of the accidental or contingent properties of its referent, there are scenarios where that cognitive

value does not correspond to the expression's semantic value. On Kripke's view, such a discord between the cognitive and semantic values of linguistic entities is untenable, given that the reason Frege uses the notion of sense is to play both parts. He complains, 'Frege should be criticized for using the term 'sense' in two senses. For he takes the sense of a designator to be its meaning; and he also takes it to be the way its reference is determined.' (59 & 59f) Again, in the terms we have been using, the two ways of construing an object's mode of determination come apart in scenarios where the epistemic construal of senses does not match the non-epistemic or (if you will) metaphysical reading.

Kripke uses the apparatus of modality to sharpen his objection to Frege's account of sense. The objection is that any descriptivist theory of names, be it simple or cluster, is misguided, since descriptions are contingently associated with names and thus cannot replace them without consequences for the modal semantics of sentences. He puts forth the notion of rigid designators, which he has tentatively contrasted with contingent or accidental descriptions, and now 'quasi-technically' defines as a linguistic entity fixing the same object across worlds.[43] (48) The explanation is as follows:

> In the formal semantics of modal logic, the 'sense' of a term *t* is usually taken to be the (possibly partial) function which assigns to each possible world *H*

[43] *Strongly rigid* designators are those that designate *extant* objects across worlds. (Ibid.)

the referent of *t* in *H*. For a rigid designator, such a function is constant. (59f)

Alternatively, when the sense of a term *t* is non-rigid, accidental, or contingent, such a function can change from one world $H_1$ to the next $H_2$. Kripke takes descriptions to be non-rigid (63 and 106-7) and brings numerous examples, *e.g.*, the famous Gödel case, to show that there is no necessity that descriptions of a referent are true of them in every possible world.

Kripke maintains that since when we refer to objects, we do not begin with asking about transworld identification, but rather, 'we begin with the objects, which we *have*, and can identify, in the actual world. We can then ask whether certain things might have been true of the objects.' (53) Since any description speakers believe about a referent may not uniquely identify them and it is possible that speakers do not even have true beliefs, Kripke does not find it plausible for senses to be explained in non-rigid terms. (106) On his view, a necessary connection between a sign and a sense cannot be established based on speakers' ways of fixing its referent since those ways may not pick out the same referent in other possible scenarios. To understand Kripke's claims and contrast them with the reading of Frege presented here, we shall first review Kripke's outlook in more detail.

**7.2 – Rigidity and Proper Names**

We shall now note a further component of Kripke's analysis which has to do with the issue of identity of reference across worlds. Let us look at an example he brings. He states that for instance it is a contingent property of Nixon that he won the election in 1968. If there is a world in which Nixon did not win that election, the description would not pick him out as the referent of 'Nixon'. Notably, the described property is contingent relative to the name 'Nixon', but if we take 'Nixon' to stand for 'the man who won the election in 1968', then the statement 'Nixon won the election in 1968' is a necessary truth. (40) Why is this important? Well, given Kripke's objection to Frege and his views on the relation between rigidity and semantics, either (1) the name (*e.g.* 'Nixon'), or (2) the description ('the man who won the election in 1968') or both must be taken as rigid, since taking both as contingent will render the sentence semantically indeterminate. In other words, the contingency of any description one may attach to any name is recognizable only if the relevant name is taken to be rigid.

In his example, Kripke takes the name 'Nixon' to refer to the same man in both the actual world where he won the election and the counterfactual one where he didn't. He draws on our intuition to make the argument that, 'When you ask whether it is necessary or contingent that *Nixon* won the election, you are asking the intuitive question whether in some counterfactual situation, *this man* would in fact have lost the election.' (41) In his objection to description theories of meaning, Kripke's point about the contingency of descriptions hinges on his claim about the rigidity of *proper names* across worlds, which

he takes as given. (48)

Relying on intuition, Kripke sees the rigidity of proper names as an implicit rule among language speakers and explains how some exceptions to that rule might come about.[44] Moreover, he takes names as rigid despite the possibility that the properties associated with its referent change over time. For instance, if one takes *Hesperus* as 'the body appearing yonder position in the sky' and Hesperus gets hit by a comet, his point is that *Hesperus* is no longer 'the body in yonder position', but it's still Hesperus. (58)

The cost of taking proper names as rigid, or at least being rigid about doing so, shows up when we consider identity statements. Kripke discusses the case of 'Hesperus is Phosphorus' and argues that identity statements between proper names are necessary truths. (108) He asserts that whether someone saw the planet *Venus* in a part of the sky in the morning and saw it again in the evening and then took the above sentence to be true on that basis, the empirical observation would be irrelevant to the reference of these names; they are what they are, they refer to the planet Venus. (102-5) It is a contingent truth that they are visible in a certain part of the sky at a certain time of day or night.

[44] We can also speculate whether Frege intuitively detected a linguistic demand for the rigidity of proper names when he construed two speakers' differing knowledge of *Dr. Lauben* as a difference in their language. Kripke remarks on cases where there is a shift of reference for a proper name in his discussion of rigidity, opining that those shifts transpire diachronically, which reminds us of May's interpretation of invariance of senses reviewed earlier. Of course, May spoke of all the signs in language, not only proper names. At any rate, if these two views are similar, then the arguments brought earlier apply; namely, that one cannot distinguish between the cognitive and semantic values of names on the view that they are rigid designators.

What's more, if we use these names in the actual world to refer to the same object, then they are numerically identical in any possible world. If the two names *Hesperus* and *Phosphorus* refer to the same planet in every possible world, we can infer that 'Hesperus is Phosphorus' is true in every possible world. This is the argument that Kripke relies on to take identities between proper names as necessary.

We can think of other examples of such sentences, for instance, '*Samuel Clemens* is *Mark Twain*' or '*Clark Kent* is *Superman*', etc. Kripke claims that since these pairs of names are names of the same object, their identities are necessarily true. He further argues that there is no reason to think that necessary truths must be *a priori*. This is illustrated by the idea that although such identities are often discovered by empirical evidence and are therefore known *a posteriori*, they are necessary nonetheless. We shall not dig deeper into Kripke's contrast between apriority and necessity here. Nor is this a good stage for us to examine the relation between apriority and Frege's conception of sense. However, we can review the above claim in view of our reading of Frege so far.

The main distinction Kripke puts forth is between the metaphysical status of rigid designation which he associates with proper names and the epistemological status of definite descriptions. (56) He argues that the basis for fixing the meaning for the speaker community is epistemological, which on our reading corresponds to the cognitive values of linguistic signs. He further maintains that only proper names fix referents uniquely, which on our reading translates to only proper names expressing semantic values. He

further asserts that not just individual subjects, but communities may be wrong about the properties of any object. This claim is consistent with the reading of Frege's views on ordinary languages reviewed so far. Finally, Kripke contrasts the rigidity of proper names across worlds with the contingency of descriptions which he equates with senses and concludes that senses cannot play the semantic role they were intended for.

Kripke brings arguments against various internalist and essentialist views of descriptions to offer inconclusive outlines of what conditions must be satisfied for a description to pick out some referent uniquely. (Cf. Lecture III) But more notably, he arrives at the rigidity of proper names on epistemic grounds. Specifically, he does so by appealing to our intuition and offering a causal story as to how names come to designate an object. He goes into some length about how speakers come to use a name through an 'initial baptism' (96, 162) and the 'causal chain' that follows (93). He explains that designations are passed 'from link to link' within a community of speakers. (106-7) These explanations of what it takes for an object to be named, all have to do with speakers' epistemic access to the world and the implicit conventions in a linguistic community. Kripke also states that necessity is not an epistemic, but a metaphysical notion. But does this mean that identities between names are necessary truths which are based on epistemic considerations?

Kripke's rejection of description theory steered him to take proper names as rigid across worlds, which in turn led him to take identities between names as necessary. His assertion about the necessity of said identities draws upon an intuitive claim; that the objects that

proper names pick out in the actual world are also the objects they pick out in counterfactual worlds. He uses examples to support this claim, showing that ordinarily when we use a name to inquire about the status of its referent in a possible world, we mean the status of the object referred to in the actual world. Let us now examine this explanation.

Kripke's claims both that,

(i) if an object is identical with itself in the actual world, it is also identical with itself in every possible world; and,

(ii) if we take two names to refer to the same object in the actual world, we should take them to refer to the same object in every possible world.

The first claim does not seem controversial on the Fregean view that an object is identitcal with itself. (L2, 159-60) But the second claim uses the first claim, as well as the claim that proper names are rigid designators. However, note that although claim (i) is necessary, since there is no possible world where an object is not identical with itself, claim (ii) is not necessary, since there may be a possible world where a proper name is not a rigid designator. Moreover, self-identity of objects is not in any way dependent on the rigidity of names.

Furthermore, if we accept Kripke's account that a claim about necessity is not an epistemic

claim, we shall run into an inconsistency. Since he relies on epistemic explanations about naming to conclude his claim about the necessity of identity statements between proper names.

### 7.3 – Contrasting Worries

Kripke's observations are insightful in pointing out that there are occasions where we cannot take senses to function as both the cognitive and the semantic value of expressions. However, Kripke invokes modality to reduce senses to playing the cognitive role alone and rejecting their semantic function altogether. The dichotomous modes of determination discussed earlier comes through in Kripke's objection. He takes names as rigid and descriptions as non-rigid to flesh out this dichotomy. We may accept Kripke's claim about this differentiation as being intuitively drawn, but it does not reflect the dichotomy in Frege's account of the distinction between the cognitive and semantic values of linguistic entities.

The apparatus of modality and more specifically using a function which assigns the referent of a term *t* in each possible world *H* was not available to Frege. Nonetheless, the role of senses as cognitive values of linguistic expressions in informative identities, is not to point out that objects are identical with themselves in every possible world. It is to account for the possibility that two expressions —be it proper names or descriptions, can refer to the same object, without subjects' knowledge of their co-reference.

As explained in a previous chapter, Frege often discusses the looseness of natural languages as did Kripke. The role he assigns to senses is that of delivering the right referent in the actual world. We can interpret rigidity as what Frege demands of identity of senses of signs in perfect languages, for the purpose of scientific endeavors. As was also explained, it is important that in science and logic, we do not have sense variance, which is to say every sign refers to one object and does so in one way; *i.e.* has one sense. The demand that Kripke wants to ascribe to names in natural language, making them answer to modal semantics, is the demand Frege speaks of when it comes to signs in a perfect language. In that role, senses are a metaphysical understanding of modes of determination, because they uniquely pick out the right referent without varying among speakers.

For Frege, the understanding of a mode of determination is only about the referent of a sign in the actual world, since it is about subjects' epistemic access to those referents. The ways of accessing what a referent is and what properties it has, may not be the case necessarily and in every possible world. The non-epistemic mode of determination of an object is the way that object can be picked out independent of speakers' doxastic access. We stated that the cognitive value of expressions may vary for different speakers, but they must at least deliver the same referent such that the semantic values of those expressions can be shared.

On the interpretation of sense construed as the modes of presentation/determination of

objects, based on speakers' knowledge of its referent, Frege's minimum requirement for senses of expressions in a natural language is that speakers refer to the right objects such that the cognitive value of expressions corresponds to their semantic value. However, there is no guarantee that the sense of an expression grasped by thinkers corresponds to the way(s) that its referent is *necessarily* picked out. This way of understanding senses faces the objection Kripke brings up. However, according to the non-epistemic understanding of senses which can also be drawn from some of Frege's remarks, the sense of an expression is explained in terms of a way of determining its referent independent of any subject's knowledge, involving only the identifying features of those referents. On that account, we can take senses as ways of determining objects in every world or at least those they exist in. In this role, the sense of an expression would be independent of how subjects contingently refer to objects in the actual world. Frege did not have to take identities between co-referring names as necessary, only that he introduced senses to show that we may take them to be true or false depending on the cognitive values of those names. Kripke thought that there is a contingency to the descriptions and saw the dichotomy in terms of language, between names and descriptions, not between the cognitive and semantic values. That is why he had an outcome like the necessity of identities between co-referring names which he had to justify by way of a long explanation of how things get named. Nonetheless, his insistence of taking names as rigid comes from the recognition of the need for a stricter semantics which requires identity of

reference in every world. This very need is what prompted Frege to come up with perfect languages. For scientific and logical uses, the looseness of natural language made it inadequate. The idea that a speaker of a natural language might pick out referents in a way that is different from the next speaker, could bring forth problems which made scientific reliance on such languages unsustainable.

The need for a stricter semantics in perfect languages is fulfilled by having a unique sense for each linguistic sign. Kripke saw a problem with the looseness of natural languages, as did Frege. However, Frege sought to resolve the problem for the purpose of science by demanding the use of a designed language in which signs have fixed senses. Incidentally, Kripke's solution is related to this strategy, since he asserted that when we want to account for the semantic value of signs, we cannot rely on any linguistic entity which is non-rigidly attached to its referent. Rigidity is thereby a way of resolving the issue and if we want to see what Frege's perfect languages demand of signs, we see that rigidity is an important element.

## References


Beaney, Michael, ed. 1997. *Frege Reader.* Oxford: Blackwell.

—. 1996. *Frege: Making Sense.* London: Gerald Duckworth & Co. Ltd.

Bell, David. 1987. "Thoughts." *Notre Dame Journal of Formal Logic* 28-1: 36-50.

Burge, Tyler. 1998. "Frege on Knowing the Foundations." *Mind* 107 (426): 305-47.

Burge, Tyler. 1992. "Frege on Knowing the Third Realm." *Mind* 101 (404): 633-50.

Burge, Tyler. 1979. "Sinning Against Frege." *Philosophical Review* 88: 398-432.

—. 2005. *Truth, Thought, Reason; Essays on Frege.* Oxford University Press.

Carruthers, Peter. 1984. "Eternal Thoughts." *Philosophical Quarterly* 34 (136): 186-204.

Chalmers, David J. 2002. "On Sense and Intension." *Philosophical Perspectives* 16 (Language and Mind): 135-82.

Davidson, Donald. 1968. "On Saying That." *Synthese* 19 (1-2): 130-46.

Davidson, Donald. 1965. "Theories of Meaning and Learnable Languages." *Proceedings of the International Congress for Logic, Methodology and Philosophy of Science.*

Dummett, Michael. 1973. *Frege: Philosophy of Language.* London: Harper and Row Publishers.

—. 1991. *The Logical Basis of Metaphysics.* Cambridge, MA: Harvard University Press.

—. 1978. "What do I know when I know a language?" *Lecture, Centenary Celebrations.* Stockholm University.

Frege Sources, Edited. 1970. *Translations from the philosophical Writings of Gottlob Frege*. Edited by Peter Geach and Max Black. Oxford: Blackwell.

Frege, Gottlob (Edited Source). 1984. *Collected Papers on Mathematics, Logic, and Philosophy.* Edited by Brian McGuinness. Translated by Max Black et. al. Oxford: Blackwell.

—. 1984 (1848-1925). *Collected Papers on Mathematics, Logic, and Philosophy.* Edited by Brian McGuinness. Translated by V.H. Dudman, Peter Geach, Hans Kaal, E.H.W. Kluge, Brian McGuinness, R.H. Stoodhoff Max Black. Basil Blackwell.

—. 1967. *Frege to Gödel: A Source Book in Mathematical Logic.* Edited by J. van Heijenoort. Translated by S. Bauer-Mengelberg. Harvard University Press.

—. 1979. *Posthumous Writings.* Edited by Hans Hermes, Friedrich Kaulbach and Friedrich Kambartel. Translated by Peter Long and Roger White. Chicago: University of Chicago Press.

—. 1997. *The Frege Reader.* Edited by Michael Beaney. Oxford: Blackwell.

Frege, Gottlob. MLD. "A Brief Survey of My Logical Doctrines." In *Posthumous Writings*, 197-8.

Frege, Gottlob. BG. "Begriffsschrift (1879)." In *From Frege to Gödel: A Source Book in Mathematical Logic*, edited by J. van Heijenoort, translated by S. Bauer-Mengelberg. Harvard University Press.

Frege, Gottlob. BG. "Begriffsschrift." In *Frege 1967*, 1-82.

Frege, Gottlob. CSR. "Comments on Sinn and Beteutung." In *The Frege Reader*, by Michael Beaney, 172-80. Blackwell.

Frege, Gottlob. FC. "Function and Concept." In *Translations from the Philosophical Writings of Gottlob Frege*, edited by Peter Geach and Max Black, 21-41. Basil Blackwell 1960.

Frege, Gottlob. GZ. "Grundgesetze der Arithmetik Vol. 1, 1893." In *Frege 1997*, 194-223.

Frege, Gottlob. IL. "Introduction to Logic." In *Frege 1979*, 185-96.

Frege, Gottlob. LH2. "Letter to Husserl, 1906 (December)." In *The Frege Reader*, by Michael Beaney, 305-7. Blackwell.

Frege, Gottlob. LH1. "Letter to Husserl, 1906 (November)." In *The Frege Reader*, by Michael Beaney, 301-5. Blackwell.

Frege, Gottlob. LM. "Letter to Marty, 29.8.1882." In *The Frege Reader*, by Michael Beaney, 79-81.

Frege, Gottlob. LR1. "Letter to Russell, 28 December 1902." In *Frege Reader*, by Michael Beaney, 255-7.

Frege, Gottlob. L2. "Logic (1897)." In *Posthumous Writings*, translated by Peter Long and Roger White, 128-49 (139-61).

Frege, Gottlob. L1. "Logic (between 1879-1891)." In *Frege 1997*, 1-8.

Frege, Gottlob. LMath. "Logic in Mathematics." In *Posthumous Writings*, 203-50.

Frege, Gottlob. BL. "My Basic Logical Insights (1915)." In *Posthumous Writings*, edited by Friedrich Kambartel, Friedrich Kaulbach Hans Hermes, translated by Roger White Peter Long, 251-2.

Frege, Gottlob. NG. "Negation." In *Frege 1970*, translated by P.T. Geach, 117-36.

Frege, Gottlob. ND. "Notes to Ludwig Darmstaedler." In *Frege 1979*, 253-7.

Frege, Gottlob. CO. "On Concept and Object." In *Posthumous Writings*, by Kambartel, Kaulbach (eds.) Hermes, translated by Peter Long and Roger White, 87-117. Basil Blackwell. Originally in Vierteljahrsschrift fÜr Wissenschaftliche Philosophie 16 (1892), pp. 192-205. (Tr. Peter Geach).

Frege, Gottlob. SR. "On Sense and Reference." In *Translations from the Philosophical Writings of Gottlob Frege*, by Peter Geach and Max Black (eds.), 56-78. Oxford 1952: (First published (1892) in Zeitschrift für Philosophie und philosophische Kritick, V. 100, pp. 25-50.).

Frege, Gottlob. SK. "Sources of Knowledge of Mathematics and the Mathematical Natural Science." In *The Frege Reader*, by Michael Beaney.

—. FA. *The Foundations of Arithmetic.* Translated by J. L. Austin. Blackwell.

Frege, Gottlob. TH. "Thoughts." In *Logical Investigations*, translated by Peter Geach and R.H. Stoothoff, 351-72. (Part 1; In three parts in Beiträge zur Philosophie des deutschen Idealismus I. 1918-9. pp. 58-77, 143-57; III. 1923-6. pp. 36-51.).

George, Alexander. 1997. "Has Dummett Over-salter His Frege? Remarks on the Conveyability of Thought." In *Language, Thought, and Logic: Essays in Honour of Michael Dummett*, by Richard Heck (ed.), 35-69.

Husserl, Edmund. 1901. *Logical Investigations (Prolegomena to Pure Logic).* Edited by Jose Bermudez, Tim Crane and Peter Sullivan. Vol. 1. Intl. Library of Philosophy.

Kripke, Saul. 2008. "Frege's Theory of Sense and Reference: Some Exegetical Notes." *Theoria* 74 (3): 181-218.

—. 1972. *Naming and Necessity.* Blackwell Publishing.

Lycan, William. 2019. "Representational Theories of Consciousness." Edited by Edward N. Zalta. *The Stanford Encyclopedia of Philosophy.*

May, Robert. 2006. "The Invariance of Sense." *The Journal of Philosophy* ciii (3): 111-44.

May, Robert, and Christopher Hom. 2015. "Pejoratives as Fiction." In *Bad Words*, edited by David Sosa. Oxford University Press.

Pappas, George. 2017. "Internalist vs. Externalist Conceptions of Epistemic Justification." Edited by Edward n. Zalta. *the Stanford Encycopedia of Philosophy.* <https://plato.stanford.edu/archives/fall2017/entries/justep-intext/>.

Peacocke, Christopher. 1988. "The Limits of Intelligibility: A Post-Verificationist Proposal." *The Philosophical Review* 97 (4): 463-96.

Perry, John. 1977. "Frege on Demonstratives." *Philosophical Review* 86: 494-7.

Perry, John. 2009. "Hume and Frege on Identity." *Philosophical Studies* 146-3: 413-23.

Ricketts, Thomas G. 1996. "Logic and Truth in Frege." *Proceedings of the Aristotelian Society, Supplementary Volumes* 70: 121-40.

Ricketts, Thomas G. 1986. "Objectivity and Objecthood: Frege's metaphysics of Judgment." In *Frege Synthesized*, by L. Haarparanta and J. Hintikka (eds.), 65-95.

Russell, Bertrand. 1905. "On Denoting." *Mind* 14 (56): 479-93.

Schellenberg, Susanna. 2012. "Sameness of Fregean Sense." *Synthese* 189: 163-75.

van Heijenoort, J. 1977. "Frege on Sense Identity." *Journal of Philosophical Logic* 6 (1): 103-8.

Weiner, Joan. 1995. "Realism bei Frege: Reply to Burge." *Synthese* 102-3: 363-82.

Williamson, Timothy. 2009. "Reference, Inference and the Semantics of Pejoratives." In *The Philosophy of David Kaplan*, by Timothy Williamson, edited by Joseph Almog & Paolo Leonardi, 137-59. Oxford

University Press.

—. 1994. *Vagueness, Routledge.* New York: Routledge.