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Frege on the Tolerability of Sense Variation: A Reply to Michaelson and Textor

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In several passages, Frege suggests that successful communication requires that speaker and audience understand the uttered words and sentences to have the same sense. On the other hand, Frege concedes that, in many ordinary cases, variation in sense is tolerable. In a recent article in this journal, Michaelson and Textor (2023) offer a new interpretation of Frege on the tolerability of sense variation according to which variation in sense is tolerable when the conversation aims at joint action, but not when the conversation aims at joint thought. We maintain, contra Michaelson and Textor, that whether sense variation is tolerable does not depend on the conversational purpose, whether it be theoretical or practical. Rather, whether sense variation is tolerable depends instead on the conversational background. This picture offers what we take to be a more plausible reconstruction of Frege's own view.

Keywords: Frege; sense variation; linguistic communication; theoretical and practical reasoning

1 The Problem: Sense Variation

In several passages, Frege seems to endorse a simple transfer model of linguistic communication: a speaker entertains a thought, utters a sentence expressing that thought in the common language of speaker and audience, and thereby conveys the thought to the audience. A thought is what Frege calls the *sense* of a sentence. The sense

of a sentence is determined by the senses of the expressions from which it is composed. The speaker and audience agree on the sense expressed by a sentence because they agree on the senses expressed by the expressions that compose it. The sense of a *name*, for instance, is grasped by “everyone who is sufficiently familiar with the language” (Frege, 1891/1997: 153). Speaker and audience derive the shared sense of the sentence from the shared senses of its parts. This explains how “[m]ankind has a common store of thoughts which is transmitted from one generation to the another” (Frege, 1891/1997: 154).

The transfer model accordingly suggests a picture on which UNIQUENESS holds.

UNIQUENESS: “to each sign in the language, there should correspond a unique sense” (Michaelson and Textor, 2023, 183).

Yet, Frege acknowledges that *sense variation* occurs across a community as well as sometimes within a given conversation.

SENSE VARIATION: Speaker and audience take an uttered sentence to express different thoughts and the individual words to have different senses.

One prominent illustration of sense variation occurs in the infamous footnote of *On Sense and Reference* (1892/1970). According to Frege, speakers use an ordinary proper name such as ‘Aristotle’ with different senses: *the student of Plato* and *the teacher of Alexander the Great*. Even so, he maintains, such variations in sense “may be tolerated” so long as the referent is the same. But, even when the referent is the same, the variation is “to be avoided in the theoretical structure of a demonstrative science” (Frege 1891/1997: 153, footnote B).

Another prominent example of sense variation discussed by Frege is the Gustav Lauben case from *Thought* (1918/1984). Frege considers several assertions of sentence (1) below. In most of these cases, Frege envisions UNIQUENESS is satisfied. However, in the final assertion Frege considers, the speaker (Rudolph Lingens) understands (1) as saying the same thing as (2) but the audience (Herbert Garner) understands (1) as saying the same thing as (3).

1. Dr Gustav Lauben was wounded.
2. The doctor who lives in that house was wounded.
3. The man born on 13 September 1875 in N.N. was wounded.

In this passage Frege says, “[W]e must really stipulate that for every proper name there shall be just one associated manner of presentation of the object so designated. It is often unimportant that this stipulation should be fulfilled, but not always.” (Frege 1918/1997: 333).

2 Sense Variation in Thinking and Acting Together

Michaelson and Textor (hereafter M&T) offer a new interpretation for how we should understand Frege’s cryptic remarks about just when sense variation is tolerable in a given conversation. On their view, failures of UNIQUENESS are:

- *intolerable* when speaker and audience *aim to think together*, but
- *tolerable* when the aim is to *coordinate action*.

We will take these points in sequence.

M&T point to Frege’s example of a jury to argue that if the interlocutors have a *theoretical* aim, then variations in sense are intolerable (Michaelson and Textor, (2023); 190-1, citing Frege (1918-9/1997)). A jury aims not merely at a practical objective but to *think together*. They aim to know whether the accused is guilty. Their purpose would be frustrated without common thoughts. M&T illustrate this using the exchange between Lingens and Garner, now imagined as jurors deciding on Lauben’s guilt. Lingens knows Dr. Gustav Lauben only as the doctor who lives in that house, while Garner knows Dr Gustav Lauben only as the man who was born on 13 September 1875 in Dresden. Here is the target question the truth of which Lingens and Garner, qua jurors, are deliberating: “Is the accused, Dr. Gustav Lauben, guilty?”

According to M&T, even if the accused, Lauben, satisfies both descriptions, Lingens and Garner *pursue different questions* when respectively asking “Is the accused, Dr Gustav Lauben, guilty?”. One is a question about the person born on 13 September 1875 in Dresden; the other is about the inhabitant of the ground floor at Zwetschgengasse 48. To engage in a genuine project of joint inquiry, the jurors, as the thought goes, must be able to appreciate the relevant evidence in the same way. Evidence that the man who was born on 13 September 1875 in Dresden is guilty may not constitute evidence that the doctor who lives on the ground floor of Zwetschgengasse 48 in Jena is guilty.

To appreciate this point, let's anticipate Lingens' and Garner's reasoning here in more detail. Suppose Lingens and Garner in their capacity as jurors possess shared background evidence that *the guilty party is whomever was wounded in that house* (i.e., on the ground floor of Zwetschgengasse 48 in Jena). They acquire new evidence in the courtroom, communicated to them through the sentence "Dr Gustav Lauben was wounded". Lingens and Garner, however, understand this sentence as expressing different thoughts. The thought Lingens understands in conjunction with his background evidence allow him to validly conclude that the doctor who lives in that house is guilty. The thought that Garner understands (even in conjunction with the same background evidence) does not allow him to validly derive this conclusion.

Table 1

	Lingens	Communicated Sentence	Garner
P1	<i>the doctor who lives in that house was wounded.</i>	'Dr Gustav Lauben was wounded.'	<i>the man born on 13 September 1875 in N. N. was wounded.</i>
P2	<i>if anyone in the house was wounded, then that person is guilty.</i>		<i>if anyone in the house was wounded, then that person is guilty.</i>
C	<i>the doctor who lives in that house is guilty.</i>		<i>the doctor who lives in that house is guilty.</i>
	Valid		Invalid

In sum: M&T take the jury example to be representative of how sense variation is intolerable when conversational aims are theoretical. It is intolerable because (as in the jury case) it thwarts the shared objective of evaluating the same evidence together in the same way to reach a conclusion.

3 Intolerable Sense Variation in Joint Action

M&T by contrast think that sense variation is *tolerable* if the conversational purpose is merely to coordinate action. They offer the Lauben exchange as a *representative example*: “We take the idea here to be that the Lauben case is a representative example of when variation in sense *does not matter*” (193, our italics.) As they see it, variation in sense purportedly ‘does not matter’ because the sense variation that features in this case would matter if at all only in connection with the conversational aim of coordinating *action* – for example, at getting help for the wounded.

Reconstructing, it seems the idea is that if the aim of the conversation is action—say helping Lauben, rather than, e.g., assessing the truth of whether Lauben is guilty—then it does not matter how the parties represent Lauben, so long as the man is helped.

Against M&T, we believe that the same arguments against tolerating sense variation in conversations with a theoretical aim apply to conversations aimed at coordinating action. First, we will show that sense variation in cases of coordination action (viz., where the conversational aim is a practical rather than purely theoretical) is actually more problematic than M&T think, and this turns out to be so *even in the very example they use to suggest otherwise*.

Second, on closer inspection, it’s much less clear than M&T think that sense variation is *intolerable* when the aims of a conversation are purely theoretical. Putting these points together: distinguishing between the theoretical and practical aims of a conversation isn’t as illuminating as M&T think in giving a charitable interpretation of Frege’s idea that sense variation ‘may’ be tolerated.

In paradigm cases of coordinated action, a speaker influences their audience’s action by providing them with some information relevant to what the audience ought to do in the circumstance. Let’s consider a cartoon case. In order to convince an audience to tie a shoe, a speaker may utter ‘your shoe is untied’. The audience learns a piece of information, *that their shoe is untied*. This information combines with the audience’s other beliefs and desires (etc.) to lead them to conclude that they ought to tie their shoe. The audience then forms the intention to tie their shoe.

Now let's consider a case of a conversation with a practical aim involving sense variation. Suppose the conversation has the following practical aim: Lingens wants Garner to aid Lauben, and utters, 'Dr Gustav Lauben was wounded'.

Table 2

	Lingens	Communicated Sentence	Garner
P1	<i>the doctor who lives in that house was wounded.</i>	'Dr Gustav Lauben was wounded.'	<i>the man born on 13 September 1875 in N. N. was wounded.</i>
P2	<i>If the doctor who lives in that house is wounded, then I ought to go to the house to help.</i>		<i>If the doctor who lives in that house is wounded, then I ought to go to the house to help.</i>
C	<i>I ought to go to the house to help.</i>		<i>I ought to go to the house to help.</i>
	Valid		Invalid

What the failure of UNIQUENESS implicates in this example is that, *if* Garner formed the intention to go to help Lauben, he would do so only through invalid reasoning. And furthermore, note that Garner's reasoning above will be invalid regardless of whether Garner's background information included a belief that Lauben does *not* live in that house, or whether it merely includes a lack of information about where Lauben lives. The general lesson here is that *sense variation can frustrate the purpose of a conversation with a practical aim in the same way it can frustrate the purpose of a conversation with a theoretical aim.*

4 Tolerable Sense Variation in Joint Thinking

So we should resist M&T's line on the tolerability of sense variation when the conversational purpose is to coordinate action. But should we agree with them that sense variation is *intolerable* when the conversational aim is purely theoretical, and thus, when interlocutors are 'thinking together'? Here again we are sceptical.

To see why, consider now a further twist on the original Jury example. The case differs because both Garner and Lingens know that the doctor who lives in that house is identical to the man born on 13 September 1875 in N.N..

Table 3

	Lingens	Communicated Sentence	Garner
P1	<i>the doctor who lives in that house was wounded.</i>	'Dr Gustav Lauben was wounded.'	<i>the man born on 13 September 1875 in N. N. was wounded.</i>
P2	<i>the doctor who lives in that house is identical to the man born on 13 September 1875 in N. N..</i>		<i>the doctor who lives in that house is identical to the man born on 13 September 1875 in N. N..</i>
P3	<i>If anyone in the house was wounded, then that person is guilty.</i>		<i>if anyone in the house was wounded, then that person is guilty.</i>
C	<i>the doctor who lives in that house is guilty.</i>		<i>the doctor who lives in that house is guilty.</i>

	Valid		Valid
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Notice that the conversational aim here, as with the original jury case, is purely theoretical; the interlocutors are no less ‘thinking together’ to a common theoretical purpose than in the initial jury example. However, the variation in sense seems ‘tolerable’ in that Lingens and Garner are able to validly reach the same conclusion when thinking together about the question at hand, given the evidence they share. Although speaker and audience associate different senses with ‘Lauben’, they also both believe that *the doctor who lives in that house* is identical to *the man born on 13 September 1875 in N. N.*¹ When combined with the conversational *common ground*², the two Lauben thoughts have the same entailments.

We suggest that this accounts for the fact that sense variation in this case is tolerable. The variation in sense seems ‘tolerable’ in that Lingens and Garner are able validly reach the same conclusion when thinking together about the question at hand, given the evidence they share. Although speaker and audience associate different senses with ‘Lauben’, they both believe that these senses are equivalent, that *the doctor who lives in that house* is identical to *the man born on 13 September 1875 in N. N.* When combined with the conversational *common ground*, the two Lauben thoughts have the same

¹ This thought—that *the doctor who lives in that house* is identical to *the man born on 13 September 1875 in N. N.*—is either a complex of or determined by the senses of ‘the doctor who lives in that house’, ‘is identical to’, and ‘the man born on 13 September 1875 in N. N.’. The thought is *about* Lauben and not about the senses. Crucially, it is distinct from the thought that the senses of the expressions present the same man. Thanks to a referee for this journal for querying this issue.

² Following Stalnaker (2002), we assume that the ‘common ground’ is what is taken for granted by the interlocutors. The speakers may take for granted propositions that are not true or that they do not believe. In cases of false common ground that also feature sense variation, we take it that something is intolerable (with respect to the conversational aims) but it’s not sense variation *per se*, but the falsity of the common ground.

entailments. We suggest that this accounts for the fact that failures of sense are tolerable. Analogously, it is commonly known that *the teacher of Alexander the Great* is identical to *the Student of Plato*.

Common ground can also explain why sense variation is *sometimes* tolerable in conversations with practical purpose. Above, we gave an example of intolerable sense variation in a conversation with a practical aim. The intolerability can be remedied by adding collateral information to the common ground, namely *that the doctor who lives in that house is identical to the man born on 13 September 1875 in N. N.*

Table 4

	Lingens	Communicated Sentence	Garner
P1	<i>The doctor who lives in that house was wounded.</i>	'Dr Gustav Lauben was wounded.'	<i>The man born on 13 September 1875 in N. N. was wounded.</i>
P2	<i>If the doctor who lives in that house is wounded, then I ought to go to the house to help.</i>		<i>If the doctor who lives in that house is wounded, then I ought to go to the house to help.</i>
P3	<i>The doctor who lives in that house is identical to the man born on 13 September 1875 in N. N..</i>		<i>The doctor who lives in that house is identical to the man born on 13 September 1875 in N. N..</i>
C	<i>I ought to go to the house to help.</i>		<i>I ought to go to the house to help.</i>
	Valid		Valid

In the presence of this collateral information, each party's practical syllogism become valid.

On our account, Frege would tolerate sense variation in which a speaker asserts the thought that P and the audience understands P^* provided that a nontrivial common ground entails the equivalence of P and P^* . In this case, any deduction that can be made from the thought that P can be made from P^* . This suggests sense variation may be intolerable in two different degrees.

Degree 1: The common ground does not entail the equivalence of P and P^* .

Degree 2: The common ground entails the inequivalence of P and P^* .

The cases considered above involve intolerance in the first degree: the speaker or the audience fail to believe that *the doctor who lives in that house* is identical to *the man born on 13 September 1875 in N. N.*

Frege himself develops this example into a case of intolerance in the second degree. As Frege (1918/1984: 333) develops the example, Garner comes to believe information incompatible with the thought that *the doctor who lives in that house* is identical to *the man born on 13 September 1875 in N. N.*

It is precisely this type of case in which difference in sense "must be recognized". We think this strongly suggests that the tolerability of sense variation depends on the informational background, the common ground, rather than the conversational purpose. M&T had cited the exchange between Lingens and Garner as a representative example of tolerable sense variation. However, we now see that Frege's own use of the example shows that whether sense variation is tolerable depends, in part, on the background beliefs of the speaker and audience. Suppose that it is common ground that *the doctor who lives in that house* was wounded if and only if *the man born on 13 September 1875 in N. N.* was *not* wounded. Then it will obviously cause problems if the speaker expresses the thought that *the doctor who lives in that house* was wounded and the audience comes to believe a different thought, that *the man born on 13 September 1875 in N. N.* was wounded. According to the common ground, what the speaker and hearer believe cannot both be true. This shows that (contrary to M&T) Frege's example of the exchange between Lingens and Garner is not a representative case of tolerable

sense variation. Rather it is a representative case of how common ground can make sense variation intolerable.³

5 Conclusion

Our critical examination of M&T's diagnosis of Frege on the tolerability of sense variation suggests the following conclusions:

- (i) Sense variation may lead to communication break downs regardless of whether the purpose of the conversation is practical or theoretical; and
- (ii) Given a suitably enriched conversational background, either the practical or theoretical aims of a conversational can be often achieved despite sense variation.

This suggests, contrary to M&T's view, a model on which the tolerability of sense variation depends on whether the conversational common ground supports the equivalence of the two thoughts rather than on the conversational purpose.

Our approach also makes sense of Frege's claim that sense variation is intolerable in the context of a deductive science. In a deductive science "there are no gaps in the chains of inference" and as a result:

³ For our solution to work, the speaker and hearer must both be able to grasp the mediating proposition in the common ground. That isn't an assumption that would be controversial for Frege, given his anti-psychologism. Of course, Frege (1918/1984: 332-3) does think there are *some* senses—first personal senses—that can be grasped by only one person. Nonetheless, in order to communicate, Frege thinks that the speaker must attach a sense to the first-person pronoun that can also be grasped by the audience such as is expressed by 'the person who is now speaking'. For successful communication, the audience may understand the utterance of the first-person pronoun to have a different sense, say expressed by 'the G'. Communication will be successful so long as it is common ground that 'the person who is now speaking is the G'.

each axiom, assumption, hypothesis, or whatever..., upon which a proof is founded, is brought to light; and so we gain a basis for deciding the epistemological nature of the law that is proved. (Frege 1903/2013: 138)

Frege wanted *Begriffsschrift* to provide a framework in which every step in a valid argument applied rules specified in advance rather than relying on intuition. One way to interpret this is that the mathematicians and logicians had been relying on “background information” (knowledge, beliefs, or presuppositions) that were not specified in advance. The point of a deductive science is to reason without these logical gaps. Since tolerable sense variation in other contexts relies on unarticulated common ground, it will not be tolerable in the case deductive science. We take two lessons from this. First, outside of the context of deductive science, invalid inferences can be tolerated so long as the corresponding inferences invoking collateral information are valid. Second, the tolerability of such inferences lacks the sensitivity to conversational purpose suggested by M&T’s account. That is, Frege would certainly not advise the engineer (in the practical case) or the physicist (in the theoretical) to wait for the completion of his logicist project before relying on arithmetic. Our view simply translates these principles to cases of communication.

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References

- Frege, Gottlob (1891/1997) 'Function and Concept', in Michael Beaney, ed., trans. *The Frege Reader*: 130–48. Blackwell.
- Frege, Gottlob (1892/1970) 'On Sense and Reference', in P. T. Geach and Max Black, eds., trans. *Translations from the Philosophical Writings of Gottlob Frege*, 56–78: Basil Blackwell.
- Frege, Gottlob (1903/2013) *Gottlob Frege: Basic Laws of Arithmetic*. P. A. Ebert and M. Rossberg, and C. Wright, eds., trans. Oxford University Press.
- Frege, Gottlob (1918-9/1997) 'Negation', in Michael Beaney, ed., trans. *The Frege Reader*: 346–61. Blackwell.
- Frege, Gottlob (1918/1984) 'Thought', in Michael Beaney, ed., trans. *The Frege Reader*: 325–45. Blackwell.
- Michaelson, Eliot and Textor, Mark (2023) 'Tolerating Sense Variation', *Australasian Journal of Philosophy*, **101**: 182-196. [doi: 10.1080/00048402.2021.1951311](https://doi.org/10.1080/00048402.2021.1951311)
- Stalnaker, Robert (2002) 'Common ground', *Linguistics and Philosophy*, **25**: 701–21. [doi:10.1023/A:1020867916902](https://doi.org/10.1023/A:1020867916902)