The Problem of Communication in *De Se* Thoughts

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**Abstract**: The problem of communication in *de se* thoughts is the problem of communication of first-person or self-locating thoughts across the speakers of a conversation. The problem mainly stems from the lack of a proper account of attitude and content — an account that is supposed to explain whether or how the context of linguistic utterances is related to the semantic content of a sentence, assertion and belief. In this paper, after introducing two new semantic items, namely, *almost-impossible* and *almost*-*necessary propositions*, that could be taken as theoretically primitive entities in the semantic framework I wish to draw, I propose an account of modified Lewisian-centered content and attitude based on the metaphysical framework of the Lewisian counterpart-theoretic semantics for quantified modal logic to the extent that the modification relies on those new semantic items. I then show that we can solve the problem by using our modified account.

**Keywords**: Propositional Attitudes, *De Se* Content, Centered Worlds, Counterpart Theory

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1. **Introduction**

Philosophical dogmas are often implicit but always forceful. When the ultimate presuppositions of a philosophical view become *untouchable* (i.e., when it becomes unreasonable to go against such presuppositions) for a person who wishes to hold that view, it is considered a philosophical dogma for that person. Philosophical dogmas, for this reason, are personal and they can never be universal.

Folk psychology as a theory consists of such dogmas for someone who accepts it. For example, the first dogma that comes to mind would be that one has beliefs and desires. This is a philosophical dogma because it is unreasonable for someone to believe that they do not have beliefs. Similarly, it is also unreasonable for someone to desire to not have desires at all. The second dogma would be that for someone to act in a certain way (e.g., to do @), they must change some of their beliefs or desires (or more accurately they must form a further belief or desire in their total mental state); for it is unreasonable for someone to do @ without having a desire, *D*, and forming the belief that if they were to do @, they would satisfy *D*. And the third dogma would be that one has beliefs and desires with uniformly propositional contents. Like the first two dogmas, the third dogma is rooted in folk psychology because it is unreasonable for someone to accept that each propositional attitude they ascribes to themselves by the report ‘X believes that *p*’ — where ‘X’ denotes the person in question— does not indicate a corresponding mental state they are in whose content is identified with that proposition, *p*.

 However, can rejecting the third dogma be truly unreasonable for someone who accepts folk psychology as a theory? I doubt it can because it is one thing to report one’s mental state by an ascription and another thing for one to be in such a state. The crux of the third dogma lies in the following failure of implication: From the statement (*A*) that the content of a belief *is expressed by* a sentence expressing a proposition, it does not follow (*B*) that the content itself *is identical to* a proposition. For expressibility is not the same thing as identity. Because the mediation of the sentence is often ignored both in expressibility and identity, in contemporary philosophy of mind and language the notions of content and proposition are often taken as synonymous. Therefore, the validity of inferring (B) from (A) is independent of how we construe terms like "content" and "proposition." Rather, it hinges on a clear understanding of the distinction between the *expressibility* of a belief by an assertion whose content is expressed by a sentence and the *identity* of the expressed proposition to the actual content of that belief. This mediation of a sentence in expressibility whose assertion is supposed to give the content of a belief can be found in Stalnaker's influential 1978 paper "Assertion". Stalnaker thinks that there can be a difference between what a sentence expresses in general (its semantic content) and what someone specifically conveys by asserting that sentence (the asserted content).[[1]](#footnote-1) Since Stalnaker ignores the mediation of the sentence in identity, he takes both contents to be categorically identical to a proposition (though each is identical to a different proposition). Contrary to the orthodox view, according to which assertoric content is the semantic content of utterance, Stalnaker suggests that sometimes the specific features of a conversation that constitute the context of communication can make them different.[[2]](#footnote-2) However, following Hawthorne’s and Magidor’s argument from the epistemic accessibility (2009, pp.380-84), here I will assume that Stalnaker’s framework that separates these contents is mistaken.

Nevertheless, whatever such semantic items are called (e.g., “contents”, “propositions” or “thoughts”) and however they are characterized (using Fregean senses or ordinary possible worlds), they are taken to be linguistic representations of the world that can be true or false depending on whether the world is as they say as it is. Since the contents of sentences, assertions and beliefs are not concrete particulars that occupy a certain space-time point in the actual world but abstract characterizations that uniformly individuate propositional attitudes corresponding to the relevant mental states, I am inclined to respect the third dogma as I do the first two. Hence, I shall follow the prevailing view that semantic contents of sentences, assertions and beliefs can be characterized through propositions representing (or being identical to) the content of the attitudes one takes toward the proposition in question. The crux of the matter now lies in how we construe the notions of content and proposition. In this paper, I will diverge significantly from those who previously contented themselves with such linguistic entities framed in terms of Fregean senses or ordinary possible worlds. Instead, by drawing on the critiques of Fregean propositions and ordinary possible worlds offered by John Perry and David Lewis, respectively, I propose characterizing contents through centered worlds, or self-locating thoughts, which are demonstrably distinct from both the thoughts produced by Frege's Principle of Compositionality and the sets of ordinary possible worlds. Here, I will depart from the Fregean and standard possible-worlds accounts of content and attitude, and instead adopt the Lewisian account of centered content (akin to Perry's relativized propositions) with a modification based on Lewis’ counterpart-theoretic semantics for quantified modal logic. Building upon Lewis' counterpart theory, I will introduce two novel semantic entities: *almost-impossible* and *almost-necessary propositions*. Through this modification, I aim to demonstrate that all *de se* contents can be described as almost-impossible propositions, which will in turn illuminate the underlying mechanism of first-person thought communication and consequently provide a solution to the problem at hand.

 The paper consists of three sections. In Section 1, I will elaborate on the traditional accounts of attitude and content given Perry’s and Lewis’ rejections and then I will explicate the problem. I argue that the solutions offered by Frege (1956), Perry (1979; 2020), and Lewis (1979) to the problem of communication in *de se* thoughts fail to be successful in understanding the mechanism behind the communication of the thoughts one has about oneself as ‘oneself’. In Section 2, I propose an alternative account of content and attitude based on *ad hoc* modified Lewisian-centered propositions. To develop such an account, I will introduce two new semantic items, namely *almost-impossible* and *almost-necessary propositions*, on which I modify the Lewisian account of centered propositions with the help of his counterpart theory and show that the problem can be solved by this modified account. The last section will draw a general conclusion regarding all these debates.

1. **The Problem of Communication in *De Se* Thoughts**

Isn’t it so strange that a translation of a sentence like ‘*I* am making a mess *now*’ into the language of quantificational logic is not yet available? No, it might not be strange at all because we are ignorant of the logical forms and the truth conditions of the propositions expressed by the sentences containing *indexicals* such as ‘*I*’ and ‘*now’*.[[3]](#footnote-3) We cannot know the logical form and truth conditions of a proposition expressed by a sentence without knowing what proposition is expressed by it. So, the questions then are: What proposition, if any, does the sentence ‘I am making a mess now’ express? What is the semantics *proper* for the attitude ascriptions (e.g., ‘X believes that *p*’) whose contents identified with propositions are expressedbythe sentences containing indexicals? What is believing anyway?

Traditional answers to these questions can be categorized into two camps (call both ‘*the* *traditionalists*’). In the first camp, we have *Fregeans* who hold the *Fregean view,* according to which a propositional attitude, a belief, is a relation between an agent and a proposition conceived as bearers of truth and falsity permanently. In this view, a proposition as an intension of a sentence is an abstract Platonic entity with a logical structure, constituted by senses, and graspable by agents (Frege, 1956; 1960). In the second camp, we have *possible-worlds-theorists* who hold the *Modal view,* according to which an agent takes an attitude, say a belief, toward a proposition if and only if that proposition is true in all of the worlds compatible with the agent’s beliefs (Hintikka, 1969; Lewis, 1979; Kripke 1980; Magidor, 2015). In this view, a proposition is the set of possible worlds in which it is true. Both camps share a common conception about propositional attitudes and their contents by using different sets of theoretical tools we see in truth-conditional and possible world semantics. According to this common conception, propositional attitudes are uniformly analyzed and individuated in terms of their representational contents identified with propositions.

However, the seminal works of Castañeda (1966; 1968), Perry (1977; 1979; 2020), and Lewis (1979) (call them ‘*the* *revisionists*’) pose certain notable challenges to that shared conception through a special category of singular thoughts, namely *de se* contents and *de se* attitudes, or *self-locating* attitudes — the attitudes about *where one is*, *when it is* and *who one is.* Depending on the semantic framework the revisionists employ, they challenge the traditionalists by arguing that (i) the object (the content) of a *de se* attitude cannot be given by a proposition as understood traditionally, (ii) necessary and sufficient conditions under which propositions are individuated should be determined in a more fine-grained way than is provided by the Fregean senses or the sets of ordinary possible worlds, and (iii) indexicality should be a property of the state through which its content is accessed or a property of the centered content the sentence expresses.

When it comes to making sense of the traditionalists challenged by the revisionists, many philosophers (call them ‘the *de se*-defenders’) such as Carpintero (2015; 2017), Cresswell (1985), Ninan (2016), Kaplan (1989), Kölbel (2019), Recanati (2015), Stalnaker (1981;1999), and Torre (2018), agree that *de se* attitudes require special treatment since they pose genuine problems for the traditionalists. However, there is some considerable resistance against the *de se* from some philosophers (call them ‘the *de se*-deniers’) such as Millikan (1990), Cappelen and Dever (2013), and Magidor (2015). The *de se*-deniers generally hold that neither the phenomenon of the *de se* is philosophically interesting nor does it require any special amendment of traditional accounts of propositional attitudes. In this paper, I have no intention to quarrel with the claims of the *de se*-deniers; for there is plenty of research showing that their general criticism of the *de se* does not work in solving various problems at hand (See. Carpintero 2016b; Torre 2018).[[4]](#footnote-4) On the contrary, following the revisionists, I will accept that *de se* attitudes and contents pose notable challenges against the traditionalists and following the *de se*-defenders, I take it for granted that they require special treatment in solving these problems.

* 1. **The Fregean View**

Let us recall the accounts of the traditionalists and start with the first camp. In the Fregean view, attitudes and their contents are characterized by the following three doctrines

1. Attitudes are characterized in terms of a relation between a proposition and the agent who takes the attitude toward that proposition.
2. The truth-values of propositions do not vary across individuals or times.
3. Necessary and sufficient conditions under which propositions are individuated are determined in a more fine-grained way than is provided by their truth-conditions.

Another related doctrine that seems to be a natural consequence of these three doctrines – especially ii and iii – is that indexicality can only be a property of sentences rather than that of the propositions the sentences express. Thus,

1. Propositions themselves cannot be indexical, but the sentences expressing them can.

Now the paradigm example given by Perry against these doctrines is the following one:

“I once followed a trail of sugar on a supermarket floor, pushing my cart down the aisle on one side of a tall counter and back the aisle on the other, seeking the shopper with the torn sack to tell him he was making a mess. With each trip around the counter, the trail became thicker. But I seemed unable to catch up. Finally it dawned on me. I was the shopper I was trying to catch [. . .] I believed at the outset that the shopper with a torn sack was making a mess. And I was right. But I didn’t believe that I was making a mess. That seems to be something I came to believe. And when I came to believe that, I stopped following the trail around the counter, and rearranged the torn sack in my cart. My change in beliefs seems to explain my change in behavior.” (Perry, 1979, p.3)

Perry, unbeknownst to himself, has a belief about himself that the shopper with the torn sack is making a mess. However, this belief does not lead him to rearrange the torn sack in the cart; for he does not believe that he himself is the shopper with the torn sack. Unless he comes to believe in the sentence ‘I am making a mess’ or ‘I am the shopper with the torn sack, who is making a mess’, no change in his behavior in the relevant way is expected to occur since only such beliefs do provide a reason for Perry to act in a certain way, namely, to rearrange the torn sack. By respecting the dogmas of folk psychology, Perry assumes that the change in his behavior indicates a change in his beliefs. When we replace the first-person pronoun ‘I’ with other descriptions uniquely identifying Perry, we lose the grounds on which we explain his behavior. To explain the change in his behavior of rearranging the torn sack, he cannot rely on any belief whose content does not contain the indexical ‘I’ even though any such beliefs contain a singular term uniquely identifying Perry. It seems that ‘I’ is an essential element of his beliefs when it comes to explaining and rationalizing his behavior. It seems that the use of indexical is ineliminable in explaining such a change in behavior. Consider the following sentences and suppose that all are true:

1. The shopper with the torn sack is making a mess
2. John Perry is making a mess
3. John Perry is the shopper with the torn sack who is making a mess

Suppose further that Perry believes in these three sentences. Is this enough for him to change his behavior in a way that he changes when he believes in the proposition ‘I am the messy shopper’? Although Perry could believe in these three propositions, forming these beliefs are insufficient to make him change his behavior and lead him to rearrange the torn sack in the cart. Perry will not change his behavior in the relevant way if he merely believes (a) that the shopper with the torn sack is making a mess, or (b) that John Perry is making a mess, or (c) that John Perry is the shopper with the torn sack who is making a mess or any combination of these sentences. If Perry changes his behavior, then among the other things he comes to believe, he needs to believe either ‘I am making a mess’ or ‘I am the shopper with the torn sack who is making a mess’ or ‘I am John Perry who is making a mess’ or any combination of them. To explain why Perry stops and starts rearranging the torn sack, it appears that the concept represented by the first-person pronoun ‘I’ must be taken into consideration as an essential part of the content of his belief playing a constitutive role in the change of his behavior.

Does, for Perry, the essentiality of the concept represented by the first-person pronoun ‘I’ in the content show that indexicality is an essential property of the thought expressed? I doubt it does. Nevertheless, for some *de se*-defenders such as Kaplan (1989), Carpintero (2016a), and Stalnaker (1981), Perry’s messy shopper example shows that removing the indexicals from a sentence changes the nature of the content expressed by the sentence. As Stalnaker (1981, p.133) explicitly puts it, “there seems to be no way to eliminate the indexical element in the expression or report of the attitude without distorting the content”. Therefore, indexicality is an essential property of the thought expressed. This idea is nevertheless utterly mistaken for Perry.[[5]](#footnote-5) As Perry completely rejects such a view in his recent work (2020), he complains that the conclusions of his papers have often received much less attention than the examples he used to motivate them. He explicitly claims that the main moral we can draw from his previous papers is that we need to revise substantively the doctrines (i) and (iv), keep (ii), and reject (iii) (2020, p.5). In what follows, I will expose Perry’s views on how we should handle these doctrines.

Perry thinks (2020, p.28) that the amendment regarding the first doctrine (i) is inevitable for it misses the singular aspect of the thought. Frege denies singular propositions sometimes called as “Russellian propositions” which are taken as an ordered pair 〈*x*, *F*〉 of an individual, *x*, and a property, *F*. For Russell, singular propositions take individuals as their constituents whereas for Frege propositions do not have individuals as constituents because they all are general or qualitative as invariant, universal, and objective Platonic entities residing in the third realm. For Perry, propositional attitudes do not consist in a relation between an agent and a qualitative or general proposition. Rather than being a relation to abstract objects of some sort, according to Perry, they just consist in having various mental episodes in the brain and central nervous system of an agent at a time and nothing more than that. Besides qualitative propositions, for Perry, a propositional attitude also takes circumstances or singular propositions as its object.

However, even though I accept Perry’s characterization of beliefs (i.e., I can agree with the claim that beliefs are in “the head”, but given the externalist theories of content, I take their contents as being outside the head)[[6]](#footnote-6), I do not see this acceptance as incompatible with Frege’s idea that simply claims the contents as Platonic entities are not in the head. What makes us then think that the contents are abstract characterizations of their states if such contents are actually in the head? Since Perry in the debate agree with the doctrine (ii) that the truth-values of propositions do not vary across individuals or times, I will continue with the controversies on the doctrines (iii) and (iv).

Now let us see the reasons why Perry rejects the doctrine (iii). The doctrine (iii) finds its more precise formulation in Perry’s recent work as follows:

iii\* “If X believes the proposition that S, that belief will lead X to regard S as true. That is, the proposition not only captures the truth-conditions of S, but also its cognitive content or cognitive significance, the beliefs that lead one to regard it as true.”[[7]](#footnote-7)

The reason why necessary and sufficient conditions under which contents of sentences or beliefs are individuated should be determined in a more fine-grained way than is provided by their truth-conditions is that even though it is necessary for *that X* and *that Y* to be the same, that they have the same truth value, it is not sufficient for them to be the same. For (*a*) *that Catalonia is in Europe* and (*b*) *that Catalonia is in the sixth largest continent of the world* have the same truth value and yet are not the same propositions construed traditionally. Although the conditions under which both *a* and *b* are true are the same, they do not express one and the same proposition. One who believes in *a* does not necessarily believes in *b* since one might not know whether Europe is the sixth largest continent of the world*.* Perry rejects the doctrine (iii) and (iii\*) explicitly for the following reasons:

“Belief reports classify beliefs in terms of their truth-conditions, not in terms of the types of the belief episodes that are involved. That is, belief reports are concerned with *what* is believed, not *how* it is believed. The choice of the embedded sentence will often suggest something about how the belief is held, however. If X regards “Cicero was an orator” as true and does not so regard “Tully was an orator,” it will be misleading, but true, to say “X believes Tully was an orator.” (Perry, 2020, p.7)

The point becomes fairly apparent when we see that the indexical ‘I’ used in an utterance discloses more important information about the belief that motivates the utterance ‘I am making a mess’ than when a proper name is used in the utterance. It is because, for Perry, this disclosure is unreﬂected in the singular proposition that serves as its *content* in Kaplan’s sense, *what* is said but reflected in the way of believing that serves as *its character*. Hence, he prefers Kaplan’s account over Frege’s as follows:

“Suppose Fred says, “Cicero was an orator.” I’ll say that Fred *discloses* a belief with the *cognitive signiﬁcance* of “Cicero was an orator” – that is, a belief that leads a competent speaker to regard this sentence as true. I’ll say that Fred *expresses* the belief that Cicero was an orator; that is, a belief with the truth-conditions identiﬁed by the proposition *that Cicero was an orator*. And I’ll say “Fred believes that Cicero was an orator” *reports* his having a belief in that proposition. On Frege’s theory, the aspect of the belief disclosed is the same as that expressed or reported. On the [Kaplanian] singular propositions account, this is not so. Fred would disclose a different belief with “Tully was an orator” but would express the same proposition.” (Emphasizes are original), (Perry, 2020, p.14)

As a result, Perry’s distinctions between *what* is believed and *how* it is believed can be seen as a derivative of Kaplan’s distinction between the content and the character of an expression. We see that for Perry, Frege’s theory misses the aspect of the belief that the Kaplanian singular proposition account does not miss; namely, the cognitive significance associated with the belief rather than that of the proposition expressed as its content. If all singular propositions are such that they are immediately related to their objects just in case they are the contents of belief *de re*, it might be expected that belief *de re* can provide the required significance in constituting the causal patterns that forge the behavior in question.[[8]](#footnote-8) However, given the convincing critiques of Perry, the typical attribution of belief *de se* does not seem to be equivalent to any attribution of belief *de re* and *de dicto*. This failure of equivalency leads us to an open-ended discussion as to whether indexicality is essential to the content of the state or to the state itself. Given the messy shopper example, despite the sameness of the contents of two distinct states of the same kind, one of the states does not result in a certain action while the other does. But with this, it is not certain whether the psychological or representational modes of states are of the same kind. *De se* belief could be a wholly distinct mental state that cannot simply be regarded as a type of propositional attitude as we know it since its content does not seem to be captured by a proposition conceived as permanently true or false. Thus, given the *de se*, a substantial revision regarding the nature of the contents of propositional attitudes, in this account, seems inevitable.

For Perry indexicality is not a property of the content, which we see in his need for an amendment in the doctrine (iv) and we also see that it is not a property of sentences either. But where to locate the indexicality if not in the contents or the sentences expressing them? To give an answer, Perry surprisingly appeals to the critiques of the *de se*. The general criticism of the *de se*-deniers against the essentiality of the *de se* both in the characterization of content and attitude and in the rationalization of intentional action seems to rely on the idea that the purported problems inherited in such expressions and reports are just instances of a more general problem of the failure of substitution of co-referring expressions *salva veritate* in certain contexts. Interestingly, in Perry’s view too, the particular cases of the *de se* are what obtains in Frege’s puzzles in general. But if this is the case, then the solutions offered for Frege’s puzzles in terms of the distinction between sense and reference should be a general solution for the cases of *de se* contents. This means that a similar form of Frege’s distinction must be available for propositional attitudes and their contents. Perry makes a similar distinction between the content of a belief and the belief itself (i.e., in Perry’s terminology between what one believes and how one believes). He argues that *the way* one accesses the content by taking an attitude toward a proposition appears to be cognitively significant. Perry in the end recommends that if one wishes to understand the relation of indexical belief to action, one will need to analyze not *what* an agent believes but *how* the agent believes it—the agent’s ‘belief state’ or ‘way of believing’ (Perry 1979, pp. 16-20). As Perry argues (1979, p.19), “Anyone at any time can have access to any proposition. But not in any way.” Hence, to give a full account of rational action, we need to mention not only the content but also the state through which the content is accessed, which has a cognitive significance. It seems that for Perry the required amendment regarding the doctrine (iv) is to locate indexicality within the states themselves instead of the sentences expressing their contents since the way of believing in a content is indexed only to the believer in a discriminative way. But it is not clear how Perry’s view in this context poses a challenge to the traditionalists since taking the *de se* as an instance of Frege’s Puzzles is also what the *de se*-deniers claim after all (Cappelen and Dever, 2013; Magidor, 2015). I agree with Perry that the way one believes in a proposition has some cognitive significance that is different from the significance of the proposition that sets the veridicality conditions of the belief state in question. But I do not think that we should locate indexicality in the mental states themselves without recognizing the fact that the indexicality of the state comes from its content. In this respect, I am closer to Lewis’s account than that of Perry.

* 1. **The Problem**

Now we can go deeper in understanding the problem we aim to solve. The problem of linguistic communication of first-person thoughts initially stems from Frege’s theory of content as well as his conception of the *mode of presentation*. The problem is put forward by Frege as follows:

 “Now everyone is presented to himself in *a particular* and *primitive way*, in which he is presented to no-one else. So, when Dr. Lauben thinks that he has been wounded, he will probably take as a basis this primitive way in which he is presented to himself. And only Dr. Lauben himself can grasp thoughts determined in this way.” (Frege: 1918, p.298) (Emphasizes are mine).

In Frege’s example of Dr. Gustav Lauben, we see that first-person thoughts can be characterized as private contents that no one but only the thinker of thought can entertain. This shows that such thoughts are graspable only by their thinkers. But if this is so, how is it possible that such thoughts can be communicated to others if they are inaccessible to all but their thinkers? This is one of the aspects of the problem of linguistic communication of first-person thoughts. However, we do not see in Frege why such thoughts are private contents, *ergo* why they are incommunicable. Nor do we see what that particular and primitive way might be. In so far as the problem of privacy and incommunicability of thought content is concerned, what we can best extract from Frege would be to claim that in the case of first-person thoughts, the mode of presentation in question is unique to the thinker who can nevertheless be presented to others and himself under a common description/presentation such that anyone who hears the utterance that “I have been wounded” can understand it as “he who is speaking to you at this moment has been wounded”. Frege’s solution for this problem is simply to deny the communication of the first-person (*de se*) content but assign its communicative function to the sense of its publicly sharable version, which is called *ersatz content* (due to Pagin (2016)). Frege explicitly says the following:

“But now he may want to communicate with others. He cannot communicate a thought which he alone can grasp. Therefore, if he now says " I have been wounded ", he must use the " I " in a sense which can be grasped by others, perhaps in the sense of " he who is speaking to you at this moment", by doing which he makes the associated conditions of his utterance serve for the expression of his thought.” (Frege: ibid.)

This solution of Frege denying the communication of thought content appears to hold that what is communicated in such cases is not the original content held by the thinker but the ersatz content that is different from the original one in the sense of the term ‘I’ and the description ‘he who is speaking to you at this moment’ but is same in its reference (Pagin, 2016, p.272). With a series of thought experiments, Perry (1979) rejected Frege’s ersatz solution because there is no private content that is privileged for the speakers of a conversation. Perry thinks that if we change the order of quantifiers in what Frege said in the above passage, then we can explain the problem without having to explain it away. According to Perry, what Frege had in mind in the above passage is the following claim:

 “For each person, there is a particular and primitive way in which he is presented to himself and no one else . . . and no one else can grasp Thoughts determined in this way.”

Perry then suggests that reversing the order of the quantifiers in this claim will explain the problem. Hence, reversing the order of the quantifiers then will amount to the following claim:

‘There is a particular and primitive way in which every person is presented to himself, and no one else.’

Here, Perry thinks that there is no need for a multiplicity of contents, one of which is private to the thinker and the other is publicly shareable version of it. He claims that there is only one content which is about a particular person having a particular property but two different ways or the states through which the content is accessed. By reversing the order of the quantifiers in Frege’s contention, we allow the multiplicity of ways of accessing the content. Thus, the communication of such thoughts is now possible for the speakers of a conversation. Since the way Dr. Lauben accesses to the content expressed by the sentence “I have been wounded” is not the same way his audience accesses to the same content, the audience will correctly believe that not him but Dr. Lauben has been wounded. Here, Perry again appeals to Kaplan’s distinction between the content and the character. He assumes that the contents of the utterances ‘I have been wounded’ and ‘he who is speaking to you at this moment has been wounded’ are the same but their characters are different; thus, the ways of accessing it are different.

However, I believe that both Frege’s ‘*ersatz solution*’ and the solution of Perry’s ways of believing to this problem is not satisfactory. Here I am happily agreeing with Perry that the belief state in question has some cognitive significance even though I believe this significance eventually is rooted in the content. But unlike Perry, I think we do not have one single content. I think we have two different contents as I argue in section 2 that we have two different singleton centered sets; and unlike Frege, I do not think one of the contents is private and the other is shareable. Both must be sharable if the gossip about Dr. Lauben’s being wounded could spread amongst the members of the army. Frege’s solution is not satisfactory because from the speaker’s belief in the proposition that ‘he who is speaking to you at this moment has been wounded’, it does not follow that he believes in the proposition expressed by the sentence that ‘I have been wounded’. A speaker might believe in the content expressed by the sentence ‘he who is speaking to you at this moment has been wounded’ without believing in the content expressed by the sentence ‘I have been wounded’. There can be a third party in the conversation who is speaking to the same audience and is wounded. Or even worse, one might see his reflection on the mirror as if a third party is speaking to his audience without realizing both that the reflection is himself and he himself has been wounded. I think Frege’s solution seems to “get around the problem” without tackling it. But Perry’s solution provides with us important insights on the nature of the thoughts about oneself as ‘oneself’ except determining the source of the problem. In section 2, I will try to determine this source with my modified account of centered content.

* 1. **The Modal View**

 Now let us turn to the second camp and see that both the Modal view and its Lewisian rejection (i.e., Lewis’ property-based centered contents) are not helpful in solving the problem. In the Modal view, both an agent’s total mental state and its contents are typically described as sets of possible worlds. Hence, in this account, one, *x*, whose total belief state is *S* believes, *B,* a proposition, *p*, if and only if *p* is *true in all worlds in S* (Hintikka, 1969, p.148; Lewis, 1979, pp.514-517; Magidor, 2015, p.250). That is to say:

1. *Bxp* ⟷ ∀*w* ∈ *S* (*S*(*w*) *⊆ p*)

The locution “true in all worlds in S” is taken slightly differently in Hintikka’s formulation from this formulation (A) in that the agent’s total belief state, *S*, is marked by all possible worlds compatible with what the agent believes. One may consider *S* as a set of possible worlds or as a class of Fregean thoughts or as a function from propositions to their truth values — a function that constitutes Fregean judgments. Conversely according to Lewis (1986, p. 585), "the content of a total mental state is the system of belief and desire that best rationalizes the behavior to which that state would tend to dispose one".[[9]](#footnote-9) If the proposition holds in each member of *S*, then it is believed; otherwise not believed by the agent. Thus, in this formulation, the agent does not believe that *p* (e.g., it is not the case that the agent believes that *p*) if and only if in at least one world compatible with *S*, it is not the case that *p*.[[10]](#footnote-10) That is to say,

1. ~ *Bxp* ⟷ *∃ w* ∈ *S* (*S*(*w*) *⊆ ~ p*)

Suppose the only person who has been wounded in the Dr. Lauben example is Dr. Lauben himself. Then, when Dr. Lauben believes in the content, *p*, of ‘I have been wounded’ and asserts that belief to his audience by the sentence ‘I have been wounded’, according to the Modal view, *p* must be included in the set of all possible worlds compatible with what Dr. Lauben believes. When his audience believes in the content of Dr. Lauben’s assertion, then according to Modal view, the audience believes in *p* expressed by the sentence ‘I have been wounded’ because, in all the worlds compatible with what the audience believes, it is the case that the audience has been wounded. But it is not the case that the audience has been wounded because by the supposition the only person who has been wounded is Dr. Lauben himself. The modal view also seems to be unsuccessful in explaining the successful communication between Dr. Lauben and his audience.

 The Modal view, which defines propositions by means of sets of possible worlds, faces another significant challenge. Just as truth-conditions alone are insufficient to individuate propositions, defining a proposition in terms of the set of all possible worlds in which it is true is also problematic. The problem stems from the equal sets of ordinary possible worlds because such equal sets imply one and the same proposition. Even though Lewis acknowledges this issue (Lewis 1979, p.515), he does not propose a solution for it. Nonetheless he uses it as one of the reasons to abandon the Modal view in favor of his account of centered content. Lewis calls this problem “the problem of ignorance of noncontingent matters”. We may put forward the problem as follows:

Let P be the proposition expressed by the mathematical sentence ‘2+6=8’. Given the Modal view, P is necessarily true since it is true in all possible worlds. Thus, P is the set of all possible worlds in which it is true, namely the set of all possible worlds. But let Q be the proposition expressed by Fermat’s last theorem. Then Q is also necessarily true because Fermat’s last theorem was mathematically proved by Andrew Wiles. Hence Q must be the same set of possible worlds, namely all. If P and Q are the same set (i.e., if they are equal sets), then given the Modal view they must express one and the same proposition. Therefore, one who knows P also should know Q. But this is not always the case!

 In the Modal view as in the Fregean view, as Lewis describes it (1979, p.513), “the objects of attitudes are uniform in category” in the sense that attitudes uniformly have propositions as their objects identified as sets of worlds. Those uniform propositional objects of attitudes “facilitate systematic commonsense psychology” (Lewis, 1979, p.514) as we see in the third dogma of folk psychology. Following the third dogma Lewis keeps the categorical uniformity of objects of attitudes by taking such objects as properties rather than propositions. A Lewisian property as an object of an attitude is a more general category than propositions in the sense that all propositions correspond to some properties whereas not all properties correspond to some propositions. Lewis describes his property account of proposition as follows:

“The word "property" also is used in many senses. I mean a set: the set of exactly those possible beings, actual or not, that have the property in question. That means that I shall confine myself to properties that things have or lack simpliciter… I am using the word "property" broadly. I do not limit myself to natural properties, as opposed to gruesome gerrymanders. Nor do I limit myself to intrinsic properties like size or shape; I include also properties that things have in virtue of their relations to other thing…Now I am ready to defend my first thesis: when propositional objects of attitudes will do, property objects also will do. Since I construe properties broadly, this thesis is not very bold. We have a one-one correspondence between all propositions and some properties. Whenever it would be right to assign a proposition as the object of an attitude, I shall simply assign the corresponding property. Since the correspondence is one-one, no information is lost and no surplus information is added. The attitude is equally well characterized either way.” (Lewis, 1979, p.516)

 What I might call the Property-Based-Centered Model of Communication in solving the problem comes originally from Lewis (1979) but in time it has been improved further by many with some substantive revisions (e.g., Kölbel (2013), Pagin (2016), and Kindermann (2016), Here, I will solely consider Lewis’s account of the centered model. Lewis, by consulting the views of Quine (1969), develops his theory of content in terms of centered worlds as opposed to ordinary possible worlds we see in the Modal view. For Lewis, a centered possible world is a pair 〈*C*, *W*〉 of a center *C* and an ordinary world *w* (Lewis 1979, pp. 531–2). A center *C* is characterized as either a space-time point, i.e., a pair 〈*l*, *t*〉 of a location *l*, and a time *t*, or a pair 〈*I*, *t*〉 of an individual *I* and a time *t* (Lewis 1979, pp.531-2). Just as propositions conceived as sets of possible worlds correspond to some properties in the Lewisian account, “a class of centered worlds corresponds to a property” (Lewis, 1979, p.532). As opposed to ordinary possible worlds identifying objective information within logical space, a centered world identifies subjective information within logical space.[[11]](#footnote-11) In his account, if John sincerely utters ‘Some people are benevolent’, he believes (self-ascribes) the property of being an inhabitant of a world in which some people are benevolent. Here John believes (*de dicto*) the ‘boring’ (due to Egan’s terminology (Egan, 2006, p.107)) centered proposition:

1. *pc* = {〈x, w〉: such that someone is benevolent in w}.

If John believes (*de se*) that he himself is benevolent, then on this account he believes the ‘interesting’ centered proposition:

1. *pc* = {〈x, w〉: x is benevolent in w},

Thereby, he self-ascribes the corresponding property of being an inhabitant of a world in which he himself is benevolent. Thus, what happens when one believes a proposition in the Lewisian account is that one locates oneself in a region of logical space, where the proposition holds. The agent’s locating herself in a region of logical space is nothing more than self-ascribing a property corresponding to a centered-interesting proposition. For Lewis, John’s *de dicto* believing in (i) and *de se* believing in (ii) are both *de se* attitudes though they are different *de se* attitudes because in both cases he has a belief about himself: namely, that he inhabits one of the worlds where either (i) or (ii) holds. He thinks that whether *de re* or *de dicto*, all belief can be reduced to the *de se* which cannot be reduced to anything else; hence all beliefs are irreducibly *de se.*

 However, various problems leap to the eye in the Lewisian centered-world account. One is that this account does not seem to be coherent with Lewis’ own idea that the *de se* subsumes the *de dicto*. If a general account of belief *de dicto* were to be an account of belief *de se*, then this would imply that all boring-centered propositions could be reduced to interesting ones. This sounds implausible; for it blurs the line between the *de se* and the *de dicto* (Magidor, 2015, p.265). Another problem is that Lewisian-centered worlds, according to Stalnaker (1981, pp. 145-7), have unwanted philosophical consequences for the communication of *de se* contents across agents. Since believing a proposition is self-ascribing a property, an audience who believes the content a speaker has asserted would self-ascribe the property to himself, not ascribe it to the speaker. This puts a question mark on the transition of information between them. Consider the following possible utterance of Perry to Lewis:

1. Perry to Lewis: I am making a mess now.

Suppose (1) is true and Perry believes in 1, so he self-ascribes the property of being an inhabitant of a world in which he himself (Perry) is making a mess. When Perry-the-shopper meets Lewis-the-shopper in the supermarket and utters (1), for Lewis to believe Perry is to accept the content Perry expresses, but accepting it amounts to self-ascribing it. That means that Lewis, in accepting Perry’s assertion, ascribes to himself the property of making a mess (See. Pagin 2016). But it must be Perry who has the property, not Lewis. The only plausible property that Lewis can have in this scenario is the property of inhabiting a world in which Perry is making a mess at the time of his utterance; not the property of inhabiting a world in which Lewis himself is making a mess at the time of the utterance. This shows that Lewis’ property account is no more helpful either.

1. **Almost-Impossible and Almost-Necessary Propositions**

The semantic mainstream about the notion of semantic content is that the truth and falsity of sentences in contexts are a somewhat reasonable criterion for their semantic content (Hawthorne and Manley, 2012, p.35). Elsewhere (Arslan, 2016, p.358), I motivate this idea by the fact that if two sentences have the same content (i.e., the same meaning), then it cannot be the case that one is false, and the other is true in the same context of utterance. Here, I will keep following this mainstream for the following reasons: First, it is widely accepted that a semantics for a given language *L* assigns semantic contents to sentences in contexts. Second this widely held consensus in turn helps in determining the two fundamental features of a theory of proposition, namely the conditions under which the utterance of a sentence of *L* would be true and the entailment relations between the propositions expressed by sentences that constitute the logical truth and logical consequence (See e.g., Lewis 1970; Kaplan 1977; Barwise & Perry 1983; Chalmers 2006; Predelli 2006; Stanley 2007; Partee 2010; Kölbel 2013). A semantic analysis of attitude ascriptions and their contents for a given language *L* has been done by the philosophers who endorse a particular theory of reference for singular terms found in such attitudes and contents. For that purpose, they use different theoretical tools as theoretically primitive entities in their semantic framework such as those we see in truth-conditional, possible (centered or not)-world, situation-based or two-dimensional semantics. We see that many philosophers (see. Hintikka 1969; Kripke 1980; Stalnaker 1976; Magidor 2015) standardly employ a coarse-grained account of attitude and content in terms of possible worlds as they take such worlds as theoretically primitive in their semantic framework.[[12]](#footnote-12) In addition, we also see that such a coarse-grained account of attitude and content in terms of possible worlds does not help us to solve the problem of communication. Moreover, we see that Lewis’s modified property-based-centered content account against the Modal view is no more helpful either.

Based on Lewis’ counterpart theory, I make an *ad hoc* modification to his account of centered worlds by introducing two new semantic items, namely *almost-impossible* and *almost-necessary propositions*. Based on the modification, I hope to show the reader that all *de se* contents can be described as almost-impossible propositions which in turn help us in understanding the underlying mechanism of communicating first-person thoughts and consequently provide a solution to the problem at which we are currently aiming here. According to the account I defend, almost-impossible propositions are true only in the actual world as each being the singleton set in which only they are true but *at the same time* false in the rest of the worlds. Since the *de se* content is described as the singleton set of the actual world in which only that proposition is true but false in the remaining worlds, I characterize *de se* contents as the singleton sets whose only member is the pair, 〈*C*, *W****@***〉, of a particular center, *C* and the actual world, *W****@***. Following the Lewisian tradition, I will also take a center *C* either as a space-time point, i.e., an ordered pair 〈*l*, *t*〉 of a location *l*, a time *t* and, or a pair 〈*I*, *t*〉 of an individual *I*, and a time *t* and argue that the proposition expressed by the sentence ‘I am making a mess now’ is the singleton set: {〈〈*I*, *tnow*〉, *W****@***〉: *I* is making a mess at *tnow* in *W****@***}. Lewis’s account of centered content may motivate some types of relativism since he takes centered-world proposition as a function from centered worlds to truth-values by taking a truth-value only relative to a center in addition to a possible world. But in fact, as Stalnaker rightly observes it (2014, p.195), this is not what most relativist have in mind. Relativists typically expect from a theory of proposition to explain a phenomenon called ‘faultless disagreement’ between conflicting propositions. I think the account I propose can be used for this purpose by the relativist because unlike Lewis who takes centered-world proposition as a function from centered worlds to truth-values, the singleton set of the centered world I suggest can be taken as the domain of an injective communicative function, *f*, that maps from the center of the actual world in which the proposition is true to the rest of the worlds in which it is false. Ultimately, I hope to show the reader that the challenging problem I discuss here is solvable by this modification I make.

Let us start with the metaphysical framework of Lewis’s counterpart theory on which we base almost-impossible and almost-necessary propositions as the singleton sets. Lewis developed his counterpart theory in his well-known paper titled ‘Counterpart Theory and Quantified Modal Logic’ in 1968. At the time, Lewis observed that sentences with modal operators can be analyzed in terms of quantification over possible worlds. For instance, ‘It is possible that there are pink elephants’ can be analyzed as ‘There are possible worlds in which there are pink elephants.’ He also observed that we no need to formalize our modal discourse by means of modal operators if we can have the required theorical tools like appropriate predicates and a domain of quantification suited to the topic of modality which makes us able to translate every sentence of the language of quantified modal logic into an extensional first-order language with quantifiers ranging over possible worlds and possible objects. To develop such a translation model, he introduces four primitive predicates to establish eight postulates, all of which generate the metaphysical framework in which we introduce almost-impossible and almost-necessary propositions. We can state Lewis’s four primitive predicates and eight postulates based on these predicates as follows:[[13]](#footnote-13),[[14]](#footnote-14)

|  |  |
| --- | --- |
| ***The Primitive Predicates of Counterpart Theory*** | ***The Postulates of Counterpart Theory*** |
| 1. *Wx*: (*x* is a possible world)
2. *Ixy*: (*x* is in possible world *y*)
3. *Ax*: (*x* is actual)
4. *Cxy*: (*x* is a counterpart of *y*)
 | P1: *∀x∀y(Ixy ⊃ Wy)*(Nothing is in anything except a world) P2: *∀x∀y∀z (Ixy & Ixz .⊃ y = z)*(Nothing is in two worlds)P3: *∀x∀y(Cxy ⊃ ∃zIxz)*(Whatever is a counterpart is in a world)P4: *∀x∀y(Cxy ⊃ ∃zIyz)* (Whatever has a counterpart is in a world) P5: *∀x∀y∀z(Ixy & Izy & Cxz .⊃ x = z)*(Nothing is a counterpart of anything else in its world)P6: *∀x∀y(Ixy ⊃ Cxx)*(Anything in a world is a counterpart of itself) P7: *∃x(Wx & ∀y(Iyx ≡ ∃ Ay))*(Some world contains all and only actual things) P8: *∃xAx*(Something is actual) |

Counterparthood is a relation of similarity or resemblance. According to Lewis, for some objects *x* and *y* and for some worlds *w1* and *w2*, *x* in a world *w1* is a counterpart of *y* in a world w2 if and only if *x* resembles *y* closely in content and context in important respects (i.e., *x* resembles *y* more closely than do the other things in *w1*). Although Lewis in his 1968 gives some examples showing what the relevant respects of resemblance might be, he did not provide a definition for this notion; nor did he provide any formal understanding of it. By acknowledging the vagueness and ambiguity about the notion, he explains this relation of similarity as follows:

“The counterpart relation is a relation of similarity. So it is problematic in the way all relations of similarity are: it is the resultant of similarities and dissimilarities in a multitude of respects, weighted by the importances of the various respects and by the degrees of the similarities.” (Lewis 1968, p.115)

It is somewhat up to us to put forward the standards of the relation of similarity. Thus, the higher the standards we set, the smaller number of counterparts in all possible worlds would be. Now we can describe the metaphysical framework of Lewis’s counterpart theory on which we base almost-impossible and almost-necessary propositions.

Before defining our two new semantic items, namely the notions of an almost-impossible and almost-necessary proposition, let us bother ourselves with four plausible questions that motivates these two notions:

1. Are there propositions that are true only in a single world but false in the rest of the worlds?
2. Are there true propositions only in the actual world but false in the rest of the worlds?
3. Are there propositions that are false only in a single world but true in the rest of the worlds?
4. Are there false propositions only in the actual world but true in the rest of the worlds?

 Within the ordinary modal discourse, affirmative responses of the first two questions motivate almost-impossible propositions whereas those of the last two motivate almost-necessary propositions. Answering the question 2 affirmatively is comparatively less epistemically demanding than answering the question 1 because to answer the question 2 affirmatively, we first need to find a true proposition in the actual world and then attempt to demonstrate that it is false in the remaining worlds. Likewise, answering the question 4 affirmatively is comparatively less epistemically demanding than answering the question 3 because to answer the question 4 affirmatively, we first need to find a false proposition in the actual world and then attempt to demonstrate that it is true in the remaining worlds. In the ordinary modal discourse, we could not possibly know which propositions are false in other possible worlds but the actual world (except those that are the negations of necessarily true propositions (or contradictions) since they all are false in every possible world). Since prevailing intuitions regarding truth-assignment are mostly shaped within the actual world (if we can ignore necessarily true and necessarily false propositions for now), we intuitively think that there must be *some* other world in which a true proposition of the actual world can be false. But can’t there be a world in which all of its propositions are false? Or can’t there be a world in which all are true? I do not have a definitive resolution to these inquiries. I have no idea if such questions even make sense at all because I am not sure about the presupposition that propositions can be parts of the worlds in which they are true or false.

 Now consider the proposition expressed by the sentence ‘Erdogan is the president of Switzerland’. It surely is false in the actual world but can’t there be a world in which it is true? Or what if it is true in all of worlds but the actual world? Since we cannot know the happenings in the other worlds but in our world, all we can say is that it is not likely that ‘Erdogan is the president of Switzerland’ is true in all of the remaining worlds given that there are infinitely many worlds. But ‘likelihood’ does not destroy the pessimism one might have about the truth of that sentence. Given the Lewisian metaphysical framework I outlined above, we save the optimism because there can’t be a world in which Erdogan is the president of Switzerland unless that world is the actual world in which he will become a citizen of Switzerland and fulfill all the conditions that are necessary and sufficient to be the candidate for presidency of Switzerland and be elected by the majority of the Swiss people. Because in the framework of counterpart theory nothing is allowed to be in several worlds by the postulate P2, Erdogan is allowed only to be in the actual world; and even though his counterparts in other worlds can be the president of the counterparts of Switzerland in such worlds, Erdogan of the actual world cannot be the president of Switzerland of the actual world unless some conditions hold in the actual world.

Lewis was a systematic metaphysician in the sense in which he aimed at establishing a consistent system of world theory in which no contradictions can be derived from its axioms and postulates. For this reason, accepting his modal realism, thus, indeed helps one to grasp the metaphysical framework of his counterpart theory but it is not required as a prerequisite in grasping our account. If quantifying over possible worlds is problematic for some readers, then so must be the reference to them. Since reference is a relational concept, meaning that it holds between an expression and an entity in so far as both of its *relata* exist, successful reference to possible worlds presupposes their existence. Although I do not know whether such reference is possible, I will assume it is. Thankfully the reader has no obligation as such.

Having said that, now we can introduce our notions. Let *W* be the set of all possible worlds, *O* be the set of all possible objects and *T* be the set of moments. Furthermore, let *C* be the set of ordered pairs 〈*I*, *t*〉, such that *I* ∈ *O* and *t* ∈ *T*. Lastly, let PC be the set of all centered contents such that {〈〈*I*, *t*〉, *w*〉}, where *w* ∈ *W.* Thus, we can now define our notions as follows:

Def1: For all *p* ∈PC, *p* is ***almost-impossible*** iff ∀*w* ∈ *W* ∀*I* ∈ *O* ∀*t* ∈ *T* ∃*w1* ∈ *W* ∃*I1* ∈ *O* ∃*t1* ∈*T*: (〈〈*I1*, *t1*〉, *w1*〉 ∈ *p* iff (〈〈*I*, *t*〉, *w*〉∉*p*) & *w1* ≠ *w* & *I1* ≠ *I* & *t1* ≠ *t*)

To put Def1 informally, we can say that a proposition is **almost-impossible** if and only if it is true only in a single world just in case it is false in the rest of the worlds. Likewise,

Def2: For all *p* ∈PC, *p* is ***almost-necessary*** iff ∀*w* ∈ *W* ∀*I* ∈ *O* ∀*t* ∈ *T* ∃*w1* ∈ *W* ∃*I1* ∈ *O* ∃*t1* ∈*T*: (〈〈*I1*, *t1*〉, *w1*〉 ∉ *p* iff (〈〈*I*, *t*〉, *w*〉 ∈ *p*) & *w1* ≠ *w* & *I1* ≠ *I* & *t1* ≠ *t*)

 To put Def2 informally, we can say that a proposition is **almost-necessary** if and only if it is false only in a single world just in case it is true in the rest of the worlds.

 Are there such propositions then? As I argue below, all *de se* contents are almost-impossible propositions because they are true only in the actual world just in case they are false in the rest of the worlds. But this does not mean that a non-*de se* proposition cannot be an almost-impossible proposition. For instance, a non-*de se* proposition like ‘There is nothing in the world’ expresses an almost-impossible proposition because it is true only in a single world, namely the empty world, where there is no any object or whatsoever, just in case it is false in the rest of worlds including the actual world, where there is at least something (e.g., in the actual world, *Cartesian Ego*). Because given the metaphysical framework of counterpart theory every possible world is unique, so is the empty world, which means that in all possible worlds except the empty world, ‘There is nothing in the world’ expresses a false proposition. Likewise, ‘There is at least something in the world’ would be an almost-necessary proposition because it is false only in a single world, namely in the empty world just in case it is true in the rest of worlds including the actual world.[[15]](#footnote-15) Note that the negation of an almost-impossible proposition is not logically equivalent to an almost-necessary proposition; for otherwise that would make our theory vacuously true. Now consider Perry’s messy-shopper case and recall what Perry utters to Lewis by the following proposition:

1. Perry to Lewis: I am making a mess now

Given our account, both Perry and Lewis are unique entities in the actual world which is a unique world due to counterpart theory. Given Def1, then a) is equivalent to the singleton set

1. {〈〈*I*, *tnow*〉, *W****@***〉: *I* is making a mess at *tnow* in *W****@***}

b) is a singleton set because its only member is a single pair 〈〈*I*, *tnow*〉, *W****@***〉 of a particular center (which is itself a pair 〈*I*, *tnow*〉 of a particular person (‘Perry’) and a particular time ‘now’) and a particular world, namely the actual world (‘*W****@***’). Assuming that Perry is telling the truth to Lewis, a) is only true of Perry and of the moment of his utterance and of the actual world. But is a) false in the rest of the worlds? This is where counterpart theory comes into play. Given the metaphysical framework of counterpart theory, any sentence about Perry can only be true in the actual world where Perry is inhabiting. Because the counterparts of Perry living in other worlds is not Perry himself (just like the actual world is not one of the remaining worlds), any sentence about Perry will be false in those worlds but can be true for his counterpart in question. Hence a) will be false in the rest of the worlds because it cannot be true of any counterpart of Perry and of any counterpart moment of *tnow*, and of the remaining worlds.

But we might have a problem with our account. Suppose for the sake of the argument that Perry believes in the content expressed by the sentence ‘Perry is making a mess now’ without realizing or knowing or believing he himself is Perry. We know from the-messy-shopper example that merely believing in the content of ‘Perry is making a mess now’ is insufficient to make Perry change his behavior and lead him to rearrange the torn sack in the cart.

1. Perry is making a mess now

Then c) is equivalent to the singleton set:

1. {〈〈*I*, *tnow*〉, *W****@***〉: *I* is making a mess at *tnow* in *W****@***}

Given Def1, c) is also an almost-impossible proposition for it is true only in the actual world and false in the remaining ones. It seems that both a) and c) are the same singleton sets, thus express the same proposition. If so, it seems that we come back to the very problem we have at the beginning, namely we lose the grounds on which we explain Perry’s behavior. For Perry, this is not surprising at all because he thinks that all this time, we have only one content but two different ways of accessing it. The problem here is due to our oversimplification of one of the members of the center pair, namely the individual in question. We previously took a center, *C* as a pair 〈*I*, *t*〉 of an individual, *I*, and a time, *t*. However, an individual is the sum of his body and his total mental states such that individual can be construed as a pair 〈*BI*, *SI*〉 of a body, *BI*, and a total mental state, *SI*. Stalnaker in “Context” very much in the same line considers the context not only as something that includes a person, a time and a location but also something that includes “the beliefs, plans and purposes of the participants [individuals]” (2014, p.15). The notion of a total mental state can be seen up in the air though. But if we can stick on Lewis’s definition of the notion, we might come down to earth. According to Lewis’s definition, “the content of a total mental state is the system of belief and desire that best rationalizes the behavior to which that state would tend to dispose one" (1986, p. 585). By this, it won’t take for one to come up with a more fine-grained way that could specify the center in question. Thus, a qualified account of centered-content can be given as follows:

A centered content is such that itis the pair, 〈*C*, *W*〉, of a particular center, *C* and the actual world, *W*, where a center *C* either as a space-time point, i.e., an ordered pair 〈*l*, *t*〉 of a location *l*, a time *t* and, or a pair 〈〈*B*, *S*〉, *t*〉 of a pair 〈*B*, *S*〉 of a body, *B*, and a total mental state, *S* of an individual on the one hand and a time *t* on the other. Then we can argue that the proposition expressed by the sentence ‘I am making a mess now’ is the following singleton set:

1. ‘I am making a mess now’ = {〈〈*B*, *S*〉, *t*〉, *W*〉: *I* is making a mess at *t* in *W*}.

By this refinement, we no longer have the problem we previously bother ourselves. Now, we can claim that both a) and c) are not the same singleton sets because the content of Perry’s total mental state before it dawned on Perry that he himself is making a mess at a time is not the same content after it dawned on Perry that he himself is making a mess at a time. Contrary to Perry, we can claim that we have two different contents in this occasion. The missing link that connects these contents is the belief in the proposition expressed by the sentence “I am the person who is making a mess now.” But Perry cannot construct that link by getting any *de dicto* or *de re* knowledge or belief about himself just like in the example of the lost amnesiac Rudolf Lingens! That link can only be constructed perceptually. It dawned on Perry that he himself making a mess at a time because of the information Perry got from his perceptions. He saw (perceived) that the trail of sugar on the supermarket floor became thicker and thicker as he pushing his cart down the aisle on one side of a tall counter and back the aisle on the other. He saw (perceived) that the reflections on the mirror is his. Until then he comes to believe that he himself is the person who is making a mess at the time.

Since the singleton sets as the centered contents of a) and c) are not the same, they express different proposition. Therefore, we do not have the one single content but two. This also explains why the ways Perry accesses to those contents are not the same. In other words, this explains why we have two ways of believing here. Thus, with our finer grained account of content, we may specify the centered contents of a) and c) as follows:

a)\* ‘I am making a mess now’ =

{〈〈 *BI*, *SI* 〉, *tnow* 〉, *W*〉: *I* is making a mess at *tnow* in *W****@***}

c)\* ‘Perry is making a mess now’=

{〈〈 *BI*, *SI\** 〉, *tnow* 〉, *W*〉: *I\** is making a mess at *tnow* in *W****@***}

Here, the only difference is in the content of Perry’s total mental state. *SI* ≠ *SI\** because *SI* includes the belief that “I am Perry who is making a mess” while that belief is not included in the content of the total mental state, *SI\**. In addition, we assume that the physical structure of Perry’s body is not changing. So, the body member, *BI* of the individual stays constant. Of course, for instance, if Perry’s arm were chopped off due to a tragic accident in the market, we would have to change that member too in the representation of the content because such a drastic change in the spatial properties of his body would have changed the context in that case. Now if one of the roles of the mental content in explaining the nature of mental states is to set or constitute the veridicality conditions of the mental state in question, then we can securely argue that the source of indexicality is the content rather than the state itself, the cognitive significance of which is originated in its content.

 Let us turn back to or communication problem and see if this modified account can help us in solving the problem. We see that in Lewis’ property-based centered contents, we fail to solve the problem. Since believing a proposition is self-ascribing a property, an audience who believes the content a speaker has asserted would self-ascribe the property to himself, not ascribe it to the speaker. With or modified account, this is no longer the case because the set of centered-world in which the proposition a speaker has asserted is true is the singleton set, which means that there is only one unique property corresponding to that centered-world. The property in question would be the property of being an inhabitant of a world in which the pair of the body and the total mental state is making a mess at the time. Since the property the audience ascribing himself is not the property of being an inhabitant of a world in which the pair of the body of the audience and the total mental state of the audience is making a mess at a time but the property of being an inhabitant of a world in which the pair of the body of the speaker and the total mental state of the speaker is making a mess at a time, the communication between them is secured. The same applies to the case of Dr. Lauben.

1. **Conclusion**

In Section 1, I elaborated on the traditional accounts of attitude and content given Perry’s and Lewis’ rejections and then I explicated the problem. I argued that the solutions offered by Frege (1956), Perry (1979; 2020), and Lewis (1979) to the problem of communication in *de se* thoughts fail to be successful in understanding the mechanism behind the communication of the thoughts one has about oneself as ‘oneself’. In Section 2, I proposed an alternative account of content and attitude based on *ad hoc* modified Lewisian-centered propositions. To develop such an account, I will introduce two new semantic items, namely *almost-impossible* and *almost-necessary propositions*, on which I modify the Lewisian account of centered propositions with the help of his counterpart theory. In this modified account, I argued that all *de se* contents can be described as almost-impossible propositions which in turn help us in understanding the underlying mechanism of communicating first-person thoughts. According to the account I defended here, almost-impossible propositions are true only in the actual world as each being the singleton set in which only they are true but *at the same time* false in the rest of the worlds. Since the *de se* content is described as the singleton set of the actual world in which only that proposition is true but false in the remaining worlds, I characterized *de se* contents as the singleton sets whose only member is the pair, 〈*C*, *W****@***〉, of a particular center, *C* and the actual world, *W****@***. By a refinement on the center, I took the center as consisting in a pair 〈〈*B*, *S*〉, *t*〉 of a pair 〈*B*, *S*〉 of a body, *B*, and a total mental state, *S* of an individual on the one hand and a time t on the other. By using this refined content, I provided a solution for the problem of communication in de se thoughts.

**Appendix: Refutations in Counterpart Theory**

(1) **Counterpart relation is transitive.**

Since it is not plausible to postulate (1) within Lewis’ system by the postulate P5, this means that, (1\*) ∀x ∀y ∀z (Ixy ∧ Iyz ∧ Cxy ∧ Cyz → Ixz ∧ Cxz) is not licensed

(2) **Counterpart relation is symmetric.**

Since it is not plausible to postulate (2) within Lewis’ system by the postulate P5, this means that (2\*) ∀x ∀y (Ixy ∧ Cxy → Iyx ∧ Cyx) is not licensed.

(3) **Nothing in any world had more than one counterpart in any other world.**

By the postulate P1, (3) becomes (3\*) ‘∀x ∀y(Iyx → ¬∃z(Cxy ∧ Wz ∧ z ≠ y))’

Since it is not plausible to postulate (3) within Lewis’ system, this means that (3\*) is not licensed.

(4) **No two things in any world had a common counterpart in any other world.**

By the postulates P1, P2 and P5, (4) becomes

**(4\*)** ∀x ∀y ∀z (Ixy & Ixz & x ≠ y → ¬ (Cxy ∧ Cyz ∧ Wz ∧ ¬Izx ∧ ¬Iyz))

Since it is not plausible to postulate (4) within Lewis’ system, this means that (4\*) is not licensed.

(5) **For any two worlds, anything in one was a counterpart of something in the other**

By the postulates P1, P2, P3 and P4, (5) becomes

(5\*) ∀x ∀y (Wx ∧ Wy ∧ x ≠ y → ∃z(Ixz ∧ Cyz))

Since it is not plausible to postulate (5) within Lewis’ system, this means that (5\*) is not licensed.

(6) **For any two worlds, anything in one had some counterpart in the other**

By the postulates P1, P2, P3, P4 and P6, (6) becomes

(6\*) ∀x ∀y (Wx ∧ Wy ∧ x ≠ y → ∃z (Ixz ∧ (Cyz ∨ ¬Cyz)))

Since it is not plausible to postulate (6) within Lewis’ system, this means that (6\*) is not licensed.

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1. See. Stalnaker, Robert (1978). ‘Assertion’. *Syntax and Semantics (New York Academic Press)* 9:315-332. [↑](#footnote-ref-1)
2. Kripke's distinction between speaker's reference and semantic reference offers a parallel distinction at the lexical level. For Kripke, speaker's reference and semantic reference are often distinct except certain cases where speaker’s general intentions coincide with his speciﬁc intentions, the former of which gives the semantic reference and the latter gives the speaker’s reference. Despite this parallelism between these distinctions (i.e., between what the speaker says (semantic reference and semantic content) and what he means (speaker reference and assertoric content), there is a fundamental difference between them. Stalnakerian assertion is purely intensional at sentential context whereas Kripke’s understanding of reference of a term is distinct from the internal content of the term (i.e., its intension), thus purely extensional at the lexical level since reference depends on the existence of the object as its extension being referred to. The parallelism is just a parallelism between the pragmatic implications of their accounts. (See. Kripke, Saul A. (1977). ‘Speaker’s Reference and Semantic Reference’. *Midwest Studies in Philosophy* 2 (1):255-276.) [↑](#footnote-ref-2)
3. I take indexicals as those whose reference and content can shift from context to context such as, ‘I’, ‘you’, ‘here’, ‘today’, ‘this’, …etc.; and indexical attitudes as those that include them. However, the point I want to stress might not be just a terminological issue but also a philosophical one because the mere use of an indexical in an attitude report might be neither necessary nor sufficient for the given report to be described as an indexical attitude (See Magidor, Ofra. ‘The myth of the de se.’ *Philosophical Perspectives* 29 (2015): pp. 272-274.). Nevertheless, for simplicity, in the paper I will consider indexical attitudes as those whose contents include indexicals. [↑](#footnote-ref-3)
4. Apart from our current problem, namely the problem of communication in *de se* thoughts, we can list miscellaneous problems with which philosophers deal in the debate of the *de se* as follows: the problem of the explanatory role of the *de se* in the rationalization of intentional actions, the problem of whether the *de se* is an instance of Frege Puzzles, the problem of the cognitive significance of attitudes themselves, the problem of locating indexicality, and the problem of whether *de se* attitudes are immune to error through misidentification. Even though I will mention some of these problems in their relation to the traditionalist and revisionist accounts, I won’t focus on them because each of those particular problems requires a separate paper and constitute an entire paper topic in its own right. Nevertheless, all of them are the natural consequence of not having a proper account of attitude and content— an account that is supposed to explain whether or how the context of linguistic utterances is related to the semantic content of a sentence, assertions and belief. I think a proper characterization of propositional attitudes and their contents through *de se* attitudes cannot be given unless such an account provides a solution for each problem either by explaining it or explaining it away. For now, I will leave the reader to check whether my modified account does provide a solution for the remaining problems. [↑](#footnote-ref-4)
5. Thanks to Genoveva Marti for pointing out this common mistake in one of our correspondences. Further thanks go to John Perry for elaborating his recent views on this matter, published in his (2020: *Revisiting the Essential Indexical*. Centre for the Study of Language et Information Publications). [↑](#footnote-ref-5)
6. For externalist accounts of content, cf. Putnam 1975; Burge 1979, 2010; Kripke 1980 [↑](#footnote-ref-6)
7. See Perry, J. (2020), *Revisiting the Essential Indexical*. Centre for the Study of Language et Information Publications, p.5. [↑](#footnote-ref-7)
8. The immediate relation of a mental representation to a single object usually motivates the idea that the notions of a *de re* representation and a singular representation are co-extensional notions in the sense in which both apply to the same set of representations as their contents. For instance, Burge characterizes *de re* representations in a similar fashion: “[T]o be a de re state or attitude is to bear a peculiarly direct [immediate] epistemic and representational relation to a particular referent in perception or thought” (See. Burge, Tyler (2009). “Five theses on de re states and attitudes”. *The Philosophy of David Kaplan*, 246, 324. p.246). [↑](#footnote-ref-8)
9. See. Lewis, David (1986). "Probabilities of Conditionals and Conditional Probabilities II", *Philosophical Review* 95, 581-589. [↑](#footnote-ref-9)
10. See Hintikka, Jaakko (1969). “Semantics for Propositional Attitudes”. *In: Models for Modalities. Synthese Library, vol 23. Springer,* Dordrecht*.* <https://doi.org/10.1007/978-94-010-1711-4_6> [↑](#footnote-ref-10)
11. A logical space in the Lewisian account is a space where all possible worlds reside. In this sense, the actual world along with other possible worlds is a resident of both logical space and ordinary space and time. In set-theoretic approaches, the term is construed as a *field of sets*, namely “an ordered pair whose first member is a nonempty set and whose second member is a family of subsets over that set which is closed under (finite) unions, (finite) intersections, and complements” (See. Bricker, Phillip. (1983), *Worlds and Propositions: The Structure and Ontology of Logical Space*. Dissertation, Princeton University, p.39). [↑](#footnote-ref-11)
12. I am aware that taking possible worlds (centered or not-centered) as theoretically primitive entities in a semantic framework is objected to by some (See. Barwise & Perry, 1983; Cresswell, 1988; Inan, 2022). Still, I agree with Carpintero (2016, p.182) that “it is perfectly OK, ..., to use them as a semantic tool, and not just for instrumental reasons”. Nonetheless, as opposed to ordinary possible worlds, it is the goal of this paper to put forward a finer-grained account of content in terms of radically modified Lewisian-centered worlds to the extent that it embraces the context of use constituting the perspective of the thinker as part of the logical form of contents. The 2nd section will be solely spared for constructing this alternative account of content.

 [↑](#footnote-ref-12)
13. For now, I will ignore the notational differences between Lewis’s usage and other formalized usages. [↑](#footnote-ref-13)
14. See. Lewis, David (1968) ‘Counterpart Theory and Quantified Modal Logic’*. Journal of Philosophy* 65 (5):113-126. [↑](#footnote-ref-14)
15. I owe this example to Beşir Özgür Nayır. [↑](#footnote-ref-15)