

# Is Frege's puzzle based on Psychological Data?

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## Introduction

**T**HE TRADITIONAL CONCEPTION<sup>1</sup> OF FREGE'S PUZZLE supports the idea that Frege's puzzle is based on Frege's *data*. These data are understood as a *cognitive attitude* a competent speaker may have towards two true identity statements of the form  $a=a$  and  $a=b$ . On this idea, three main and incompatible approaches have been developed.

On the one hand, there have been certain approaches that hold that Frege's puzzle is a psychological phenomenon, such as Gareth Evans (1982), Michael Dummett (1973), Saul Kripke (1979), Krista Lawlor (2001), Ruth Millikan (1997), John McDowell (1977), François Recanati (1993, 2012), Nathan Salmon (1986), etc. On the other hand, there have been approaches that claim that Frege's puzzle is not just a psychological phenomenon but also a semantic one, such as Kit Fine (2007), David Kaplan (1977), John Perry (1993; 2001), and Robert Stalnaker (1978; 2006). There have been also approaches that maintain that Frege's puzzle is not puzzling at all, such as Joseph Almog (2008), Stavroula Glezakos (2009) and Howard Wettstein (1986; 1989).

Instead of examining these three controversial approaches, I shall explain and evaluate what the traditional conception understands by Frege's data (§1, §2). Different from this traditional conception —especially those proposals provided by Wettstein, Salmon and Perry in the 80's, which I shall take as representative philosophers from each approach—, I shall hold that Frege's puzzle cannot be based on psychological data. I shall support that only epistemic data —epistemic properties or features of statements of the form  $a=a$  and  $a=b$ — can cause Frege's puzzle, and explain what these epistemic data are and the difference between these data and the psychological one (§3). I shall also

<sup>1</sup> In this paper, I understand by traditional conception all those semantic proposals that have provided a solution to Frege's puzzle until now. Basically, as I show in §2, the name rises due to all these semantic proposals share a basic idea related to Frege's puzzle, namely: psychological issues cause Frege's puzzle.

consider a possible objection to the main argument and provide a reply to this in §4.

### §1. The traditional conception of Frege's puzzle

The traditional conception of Frege's puzzle is based on the following argumentation. Consider this pair of declarative statements:

- (1) Hesperus is Hesperus,
- (2) Hesperus is Phosphorus.

If the terms "Hesperus" and "Phosphorus" stand for the same object, and both statements predicate the same identity relation, (1) and (2) are true and convey the same information (Kripke 1980, Lecture I).

Consider now a competent speaker such as Cratylus. Since Greeks had not yet discovered that Hesperus and Phosphorus were the same celestial body, and Cratylus was part of this community, he may have grasped different information by understanding the statements (1) and (2) and, therefore, had a different cognitive attitude towards these statements (Evans, 1982, pp. 13–20). Cratylus, for example, may have grasped that (1) expresses an identity relation of Hesperus with itself, while (2) expresses that Hesperus and Phosphorus are the same celestial body and, therefore, have accepted (1) but doubted of (2), considered (1) trivial but (2) informative, and had a different behaviour towards these two statements depending on which of them he had accepted as true.

Now, given that Cratylus may have had a different cognitive attitude towards (1) and (2), it follows that these statements differ in cognitive significance (Dummett, 1973, pp. 92–93, 95–98, 102–103). If this is so, what does *cognitive significance* mean?

Since Cratylus may have grasped different information by understanding the statements (1) and (2), cognitive significance means the *information* these two identity statements convey. Therefore, if Cratylus may have had a different cognitive attitude towards (1) and (2), this is because these two identity statements convey different information. This idea is based on the following *principle*:

- (AC) In order to think or speak about something, the speaker must have a substantial *cognitive fix* on the thing in question so that she can distinguish this thing from the rest of things in the universe (Wettstein 1989, pp. 318, 131).

This *thing* is the *information* Cratylus *grasps* when he understands declarative statements. Therefore, if Cratylus apprehends different information when he understands the statements (1) and (2), this is because he has formed two substantial cognitive fixes regarding these statements, which implies that this pair of identity statements convey different information (Kripke, 1979, pp. 240, 243–245, 248). This, however, clearly contradicts the idea that both statements express the same information, which is puzzling.

In technical words: accepting the following theses, along with (AC), lead us to an incompatibility:

(SM) Statements of the form  $a=a$  and  $a=b$  are true and convey the same information only if the terms  $a$  and  $b$  stand for the same object, and both statements contain the same identity relation.

(FD) A competent speaker may have grasped different information by understanding the statements  $a=a$  and  $a=b$  and, as a consequence, had a different cognitive attitude towards these statements.

(CD) If a competent speaker may have a different cognitive attitude towards statements of the form  $a=a$  and  $a=b$ , the cognitive significance of  $a=a$  and  $a=b$  is different.

Therefore:

(ES) If the statements  $a=a$  and  $a=b$  are not statements *cognitively equivalent*, they are not also *semantically equivalent*.

As it can be appreciated, (ES) contradicts (SM), which is clearly true. According to the traditional conception, Gottlob Frege poses this puzzle in his paper *On sense and reference*<sup>2</sup>.

<sup>2</sup> The Stanford Encyclopedia of Philosophy also reflects it when Frege's puzzle and other phenomena related are explained. Cfr. Zalta, Edward N. "Gottlob Frege", The Stanford Encyclopedia of Philosophy (Fall 2020 Edition), Edward Zalta (ed.), URL = <<https://plato.stanford.edu/archives/fall2020/entries/frege/>>; and Nelson, Michael, "Propositional

## §2. Three traditional proposals to Frege's puzzle

Although the traditional conception provides different arguments to deal with Frege's puzzle, that conception has built all its arguments on the idea that the puzzle is based on psychological data and, therefore, provided psychological proposals to solve, refuse or avoid this phenomenon. Let's briefly review three different, incompatible, famous and representative proposals to show how this traditional conception has posed these proposals on psychological issues.

### §2.1. Howard Wettstein

In order to conserve (SM), Howard Wettstein (1986; 1989) provides arguments to refuse (ES), which are based on this reason:

(RE) Cognitive science<sup>3</sup> and semantics have different fields of research: cognitive science is interested in solving phenomena related to knowledge, while semantics is interested in solving phenomena related to the rules that govern the use of languages (Wettstein 1986, p. 201, 203, 204).

Wettstein maintains that the problems and discoveries that concern cognitive science and semantics should not affect their respective results as their fields of research are different. It is not allowed, thereby, to obtain semantic conclusions from psychological data. Particularly, it is not allowed to conclude that statements of the form  $a=a$  and  $a=b$  convey different information from the fact that a competent speaker may grasp different information by understanding these statements differently.

Wettstein also obtains another important result from (RE):

(DR) Semantics should not worry about any competent speaker who may grasp different information by understanding differently  $a=a$  and  $a=b$  (Wettstein 1986, p. 204).

Attitude Reports", The Stanford Encyclopedia of Philosophy (Spring 2019 Edition), Edward Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2019/entries/prop-attitude-reports/>>.

<sup>3</sup> Although Wettstein uses the word "epistemic" instead of "cognitive science", he clearly provides examples that have to do with psychological aspects of competent speakers (1986, pp. 200–204). This is the main reason why I have chosen "cognitive science" to outline Wettstein's proposal. Perry also offers this formulation (1988, pp. 23–233, specially p. 232). I explain the difference between epistemic and psychologic aspects in section 3.3.

This is because the aims of semantics are different from those aims of cognitive science and, hence, semantics must not provide any explanation to psychological data. If cognitive scientists decide, however, to conclude that  $a=a$  and  $a=b$  convey different information from the simple fact that a competent speaker apprehends different information, this conclusion should not affect any semantic result. Thus, Wettstein dissolves Frege's Puzzle.

## §2.2. John Perry

Different from Wettstein's argumentation, John Perry (1988; 2001) does not refuse (ES) to conserve (SM). He rather holds both theses. Particularly, he supports that if a competent speaker may grasp different information when she understands two true identity statements of the form  $a=a$  and  $a=b$ , semantics should be able to provide an explanation for it. This idea is based on the following reason:

(LI) Language is used to express and communicate all sort of information, by accepting, believing or refusing this information (Perry 1988, pp. 231, 232, 233).

According to Perry, semantics should be able *to help* cognitive science to solve psychological data, such as Frege's puzzle, since both disciplines share a same object of study, namely, *information*.

In different words, cognitive science is interested in explaining what happens when a competent speaker understands information expressed by statements of the form  $a=a$  and  $a=b$ , while semantics is interested in explaining what this information is and what are the rules that govern its use. Given that information is an element that both cognitive science and semantics have in common, semantics should be able to help cognitive science to explain what would be *these* semantics components, if there are any, that make a competent speaker understand the statements of the form  $a=a$  and  $a=b$  differently.

Perry offers the following semantic proposal. He provides two kinds of semantic components: the official and the reflexive one. The official is different from the reflexive content: the first rises from the states of affairs, the second from the rules of natural language; the first is associated with the truth-value, the second with the cognitive aspect of the language. Therefore, the official content makes the statements of the form  $a=a$  and  $a=b$  have the same truth-value, while

the reflexive content makes these statements have a different cognitive significance, conveying different information<sup>4</sup>.

As part of his proposal Perry also explains that a competent speaker may open two different mental files when she learns the terms *a* and *b*. In every mental file, the speaker may store different information related to each term. Although the origin of the two mental files is the same object, the speaker may not connect them, since she may not know that both mental files are co-referential. Because of this, she may have different cognitive attitudes towards the true identity statements of the form  $a=a$  and  $a=b$ . To have a unique cognitive attitude the speaker must link her mental files.

Perry, therefore, clarifies with a reflexive semantic component, along with a proposal on mental files, not just why the two true identity statements of the form  $a=a$  and  $a=b$  convey different information, but also why a competent speaker may have a different cognitive attitude towards these identity statements.

### §2.3. Nathan Salmon

Following the discussion on whether semantics should provide an answer to Frege's puzzle, Nathan Salmon (1986) refuses (ES) but not because he would not believe that semantics should not give any explanation, as Wettstein argues. Indeed, he explains why a competent speaker may have a different cognitive attitude. In this sense, he adopts a point of view similar to Perry's, that semantics should provide an answer to this cognitive phenomenon. However, he holds that there is no semantic difference between statements of the form  $a=a$  and  $a=b$ , as both statements convey the same piece of information. If a competent speaker may have a different cognitive attitude towards these statements, it is not because she had grasped different information, it is because she could not have recognised the *piece of information* expressed by these identity statements (Salmon 1986, pp. 78–79, 103–109).

Salmon suggests the following analogy to show the above idea. There are people who cannot *recognise* their neighbours or friends under certain circumstances. For instance, one goes to a bookshop and meets by chance a friend who has changed her appearance; or one goes to a party and meets a neighbour who is dressed as Theresa May. Initially, it would be difficult to

<sup>4</sup> Perry develops his proposal mainly in 2001, especially in section “Reflexivity and the Co-reference Problem”.

recognise these people having that appearance. However, as soon as time goes on, one can learn who these people are from some clues to guess or recall.

According to Salmon, this situation also happens with statements that convey the same piece of information. One can recognise a piece of information provided by statements of the form  $a=a$ , but not recognise the same piece of information provided by statements of the form  $a=b$ . This does not mean, however, that both statements provide different information. It just means, Salmon argues, that the competent speaker cannot recognise the same piece of information conveyed by different statements. Therefore, Salmon concludes, both identity statements express the same information but a competent speaker may not recognise their piece of information expressed by one of them.

## §2.4. Psychological data: the start of the traditional conception

There is an important result to maintain from the discussion above, namely: the traditional conception, supported by Wettstein, Perry and Salmon, maintains that Frege poses his puzzle on *basic psychological data*, which must be given to establish and learn when two identity statements contain a different cognitive significance. A reformulation of these data, which is the result of combining (FD), (AC), (CD) and (ES) together, could be posed as follows:

- (CS) If there is a competent speaker who understands  $a=a$  and  $a=b$  but may have a different cognitive attitude towards these statements, then  $a=a$  and  $a=b$  convey different information.

Wettstein and Salmon clearly refuse (CS). Their arguments support the idea that *what happens to a competent speaker* cannot affect *semantic results*. Perry, on the other hand, does not just support (CS), but he also displays the semantic components that make the statements of the form  $a=a$  and  $a=b$  have a different cognitive significance. These semantic components, along with a proposal on mental files, also explain why a competent speaker could have a different cognitive attitude towards these identity statements.

What is important to understand is that, independently of whether they refuse or accept (CS), Wettstein, Perry and Salmon start their discussion from *the fact* that Frege's puzzle rises from (CS). That is, they hold that Frege bases his puzzle on *a different cognitive attitude* a competent speaker may have. This is the start from the traditional conception when they discuss Frege's puzzle.

### §3. A new diagnosis of Frege's puzzle

Is Frege's puzzle based on (CS)? That is the main question to consider and analyse. Depending on the answer, we could have a new way to understand Frege's puzzle. Let's explore, then, what is going on with (CS).

What (CS) shows is a psychological datum. However, if the puzzle needs to be based on something, it must be based on epistemic data. A Psychological datum is related to competent speakers, while epistemic data is related to epistemic properties of the identity statements. The reasons behind that are the following.

#### §3.1. Psychological Data

In science, humanities and social science, *data* are considered to be facts or information that support events, occurrences or phenomena. This means that the second can be detected or forecasted from the former. This also means that without data it could be difficult or impossible to discover events, occurrences or phenomena.

Water could be a good example of it. When its temperature reaches 100° C, water starts to boil, thinking that water is without impurities or other factors that could affect the process of boiling. This is the datum with which scientists can know and predict in which part of the planet, or other planets, water boils. If the temperature does not reach 100° C, water could not boil in those zones.

There are different sorts of data such as perceptual, psychological or neurological data. All *these* data are normally related to how people *react* to certain *stimuli* after feeling, perceiving or thinking about them. Some optometrists, for example, are interested in detecting people who are not able to perceive some colours, such as red, yellow, or brown; others, however, are interested in detecting people that confuse colours, and perceive red as brown, or yellow as green. These optometrists *test* people to *find data* in order to be able to detect which of them do not perceive certain colours or confuse them.

Psychologists, on the other hand, tend to detect problems in children when their *behaviour* is socially unacceptable. Certain behaviour might show that children are experiencing abuse or aggression from other people. This *behaviour* is a datum with which psychologists are able to detect problems and help children. In the same way, neurologists are able to discover cerebral tumours in people that suffer *headaches*. Since constant headaches could be a symptom of that disease, these are data to start medical investigations. Without doubt, and differently from the examples of water and perception, unacceptable behaviour



or headaches are not *always* symptoms of abuse or tumours as these can just be part of certain random circumstances. Notwithstanding, unacceptable behaviour and headaches are *commonly* considered data which, under certain circumstances, might conduce scientists to detect physical or psychological problems.

The idea behind the traditional conception of Frege's puzzle is that the puzzle is a sort of example of the cases described above. By maintaining that Frege's puzzle is based on (CS), the traditional conception is committed to claim that the puzzle is based on psychological data. The datum is *the different cognitive attitudes* a competent speaker may have towards the statements of the form  $a=a$  and  $a=b$ , which *show* that *these statements* differ in *cognitive significance* and, therefore, are not *semantically equivalent*. That means that, to be able to know if these identity statements are semantically equivalent or not, it is necessary to focus on the attitude of a competent speaker. If the attitude is different, the identity statements would differ in their cognitive significance and, therefore, in their content.

In other words, according to the traditionalists, in Frege's puzzle the speaker's attitude not just shows that the speaker *thinks differently* of the statements of the form  $a=a$  and  $a=b$  —or that the speaker has two different *thoughts* about them — but also that these statements provide different information.

Therefore, (CS) is thought by the traditionalists to be on a psychological level, in which the speaker's attitude is the datum that *shows* if the content of these identity statements is the same. Although this idea is clearly in discussion by the traditionalists, as we have seen with Wettstein's, Salmon's and Perry's proposals, they accept *it* as part of the formulation of the puzzle. That is the idea to hold and evaluate.

### §3.2. Epistemic data

Is Frege's puzzle based on psychological data? I suggest and support that what it is just permissible to assert is that Frege's puzzle is based on epistemic data, which is related to *epistemic properties or features* of the two identity statements of the form  $a=a$  and  $a=b$ , but not to *psychological attitudes* of competent speakers<sup>5</sup>. Frege starts *Sense and Reference* pointing out this fact, which can be posed as the following thesis:

<sup>5</sup> In this paper, I focus merely on identity statements of the form  $a=a$  and  $a=b$ , leaving out other kind of statements that fall under Frege's puzzle, as Salmon (1986) argues.

(EC) Statements of the form  $a=a$  and  $a=b$  have different cognitive significance only if the former are a priori but the second are a posteriori (Cf. Frege 1892, p. 209).

It is true that there has been a considerable number of arguments in favour or against the epistemic distinction between a priori and a posteriori statements, such as those provided by Nathan Salmon (1986), Francois Recanati (1993) and Howard Wettstein (1986; 1989). It is not of my interest, however, to take part in this discussion, since my aim in this paper is different. I would rather like to defend a basic and intuitive idea behind (EC), which has to do with *knowledge* and its *extension*<sup>6</sup>. This idea can be appreciated if (EC) is read as follows:

(EC\*) Statements of the form  $a=a$  and  $a=b$  have different cognitive significance only if the former does not extend the *system of human knowledge*, while the second effectively do.

This means that statements of the form  $a=b$  provide, in general, certain expansion to the system of human knowledge. This knowledge is not in the speakers' mind but outside of the mind of all humans. Indeed, this knowledge is part of a community and of mankind. Statements of the form  $a=a$ , on the other hand, do not provide this expansion, since these statements do not contain anything else: they are just tautologies (Freund, 2014, pp. 69–70).

In other words, (EC\*) does not have to do with competent speakers and the way they think identity statements. (EC\*) has to do with *identity statements* themselves, with *their* epistemic properties or features, and the *contribution* these statements make to the system of human knowledge.

Thus, if the above is true, the puzzle consists in clarifying:

How statements of the form  $a=b$  provide an expansion of the system of human knowledge, while statements of the form  $a=a$  do not do that, under the supposition that the terms  $a$  and  $b$  stand for the same object and both statements predicate the same identity relation?

but not:

<sup>6</sup> There are other basic notions of (EC) such as that mentioned by Freund (2014) and Greimann (2014).

How may a competent speaker apprehend different information by understanding the statements of the form  $a=a$  and  $a=b$ , given that the terms  $a$  and  $b$  stand for the same object and both statements predicate the same identity relation?

Certainly, it is permissible to ask or doubt what it is that makes these statements epistemic different, as Stavroula Glezacos challenges (Glezacos 2009, pp. 203–205). To *be able* to ask or doubt this, however, one is obliged to accept that Frege is worried about the epistemic difference —the epistemic properties or features— between these true identity statements, and how this epistemic difference —epistemic properties or features— affect the system of human knowledge. He is not interested in the psychological level of individual learning, or not at least immediately<sup>7</sup>.

### §3.3. The difference between psychological and epistemic data

The difference between psychological and epistemic data is that the former are related to *mental and subjective aspects* of competent *speakers* —their cognitive attitude and behaviour— while the second are related to *objective properties and features* of *statements* —their epistemic properties—. Although it is always possible to connect psychological and epistemic data, such as the attitude a competent speaker may have towards statements that do not need to be corroborated by experience, they are not the same and should be treated differently, as they belong to different areas of research. An answer to the following question could be useful to distinguish these data:

(EC) Can there be a psychological but not epistemic difference — or *vice versa* — between the two identity statements of the form  $a=a$  and  $a=b$ ?

If there is an instance that shows an affirmative answer to (EC), it would show that there is a difference between psychological and epistemic data.

There are at least four combinations. (i) There could be psychological differences but not epistemic differences. (ii) There could not be psychological differences but there could be epistemic differences. (iii) There could not be psychological differences and epistemic ones neither. (iv) There could be both psychological and epistemic differences. The cases (iii) and (iv) support the idea that psychological differences are epistemic differences, while the cases (i) and

<sup>7</sup> See §5.

(ii) support the idea that psychological differences are not epistemic differences. If there is an instance of (i) or (ii), it will have shown that psychological differences are not epistemic differences.

There is here an instance of (ii): one of these identity statements might not extend the system of human knowledge, while the other effectively might do and even so a competent speaker may have a same behaviour towards these statements. For example, although the statement:

(3) Water is water

never has extended the system of human knowledge, but the statement:

(4) Water is H<sub>2</sub>O

effectively has done so, a speaker may have had a same attitude towards these statements, even before it had been discovered.

Think, for instance, in two scientist's children who grew up hearing that water is H<sub>2</sub>O even when the scientist had not even discovered this fact, but that years later she confirmed it and the community learnt and accepted this fact. As it can be seen, when the children heard and learned that water is H<sub>2</sub>O, the scientist had not discovered it. Moreover, when the scientist discovered that water is H<sub>2</sub>O, the learning of the children on this fact did not change and therefore their behaviour was exactly the same. As a result, these children did not have a different attitude towards these identity statements, even though the statement (4) extended the system of human knowledge, while the statement (3) did not do that. There is, therefore, a clear difference between psychological and epistemic data.

#### §4. Considering and replying to a reformulation of (CS)

The traditional conception can argue that even if (CS) provides psychological data, this may still help to find different epistemic properties or features between the statements of the form  $a=a$  and  $a=b$ . This means that a competent speaker can be seen as a *parameter* by which it is possible to make a decision about the epistemic status of these identity statements. If this is true, (CS) could be reformulated as follows:

(CS\*) If there is an *ideal speaker* who may have a different cognitive attitude towards statements of the form  $a=a$  and  $a=b$ , these statements would have a different epistemic status:  $a=a$  would not extend the system of human knowledge as the speaker would easily accept it, while  $a=b$  would extend the system of human knowledge as the speaker could doubt about it.

Therefore, when it is talked about a competent speaker, it is talked about an *ideal speaker* who is thought of as a *parameter*, by which it is possible to know whether these two identity statements are epistemically different.

Notwithstanding the above reformulation, the epistemic status of the two identity statements is independent of any attitude a competent speaker may have, since the epistemic status of these identity statements is quite objective, based on objective facts. If a parameter is required, it must be a parameter that obey an impartial criterion. In order to illustrate this idea, let's retake an example Kripke's (Kripke 1979, pp. 265–266).

The statement:

(4) Paderewski is Paderewski

is shown to a competent speaker in two different occasions. In the first occasion, the speaker easily accepts (4), as she considers that both names stand for the same person, a famous musician, while in the second occasion the speaker doubts about (4), as she considers that both names stand for different people, one of them for a musician but the other for a politician.

If we follow the reformulation mentioned before, the statement (4) has itself a different epistemic status, given that a competent speaker accepts it in a given occasion, but doubts it in others. This means that, in the first occasion, (4) does not extend the system of human knowledge, while, in the second occasion, (4) does. That situation does not change if (4) is shown simultaneously to the speaker, given that she could accept one token of this statement, while doubting the second one for the reasons mentioned above.

Besides being absurd, the idea above is wrong for one thing: if the speaker's attitude could work as a parameter, certain statements could have a different epistemic status when it was not the case, as is the case of Paderewski, who happens to be both a musician and a politician. Therefore, an attitude that a competent speaker could have regarding any statement cannot decide *effectively* their epistemic status.

Moreover, the epistemic status of the statements of the form  $a=a$  and  $a=b$  cannot be reduced to psychological status of competent speakers. The reason is that when talking about *knowledge* the talk is about a *system of knowledge* that is *objective, which is based on objective facts* and is *independent from any real or ideal speaker*. This means that talk about knowledge it is not a talk about a *personal and subjective knowledge, system of beliefs or learning*, held or not held by a competent speaker or an ideal one.

What Frege has in mind is the first case —the objective knowledge —, but not the second one —the subjective learning— when he tries to characterise the *new information* that a statement such as  $a=b$  can provide to the system of human knowledge. This *information* is based on a *discovery* with which the scientists are able to increase science. This information, therefore, is independent from any competent speaker and the fact of whether they learn or not this information.

## §5. Where is Frege's puzzle?

The results obtained until now do not deny that Frege is not interested in psychological aspects when he approaches Frege's puzzle. Clearly, Frege is interested in explaining how competent speakers apprehend *objective information* related to *discoveries* (Frege 1892, p. 62; Frege 1918–19, pp. 307–11). However, this is only *a consequence*, a second step of his proposal. The main interest is to *characterise* —semantically— the *epistemic properties or features* of the two identity statements of the form  $a=a$  and  $a=b$ , and explain *their contribution*, the *information* that these statements *provide*, to the system of human knowledge. Once Frege does it, he explains, but just as *a corollary*, what and how competent speakers apprehend the information provided by these identity statements, and justifies their possible different attitude on this information.

The traditionalists have seen the corollary as the main problem. However, what is true is that this corollary would not exist without the characterisation and explanation made by Frege of the statements of the form  $a=a$  and  $a=b$ . The relevant point is to clarify what is the —epistemic— contribution that these identity statements provide to the system of human knowledge, by taking the content of the second statement as a discovery of the reality. How competent speakers apprehend this discovered information is a subject related to but independent of what Frege has mainly in mind.

Without a doubt, the psychological aspect approached by Frege is very attractive. Nevertheless, the epistemic aspect is the base of it. It does not matter if competent speakers learn or not the discovered information. What is of

considerable interest is to know how certain information provided by certain statements contributes to the system of human knowledge. Therefore, the discussion is on the system of human knowledge and not on the subjective learning of competent speakers.

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### Is Frege's puzzle based on Psychological Data?

In this paper, I explore and evaluate Frege's data. Different from I call the traditional conception – especially those proposals provided by Howard Wettstein, Nathan Salmon and John Perry in the 80's, which I take as representative philosophers from the traditional conception –, I support that Frege's puzzle cannot be based on psychological data. I hold that only epistemic data can cause Frege's puzzle and explain what are these

epistemic data and the difference between these data and the psychological one, considering and replying to a possible objection.

**Keywords:** Frege's Puzzle · Frege's Data · Epistemology · Psychology · Semantics.

### ¿El puzzle de Frege está basado en datos psicológicos?

En el presente artículo, exploro y evalúo el puzzle Frege. A diferencia de lo que yo llamo la concepción tradicional – especialmente aquellas propuestas proporcionadas por Howard Wettstein, Nathan Salmon y John Perry en los 80's, a los cuales tomo como filósofos que representan la concepción tradicional –, defiendo que el puzzle no está basado en datos psicológicos. Argumento que únicamente datos epistémicos pueden generar el puzzle de Frege y explico cuáles son estos datos epistémicos y cuál es su diferencia con los datos psicológicos, considerando y replicando una posible objeción.

**Palabras Clave:** El puzzle de Frege · Datos de Frege · Epistemología · Psicología · Semántica.

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