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Thought Experiments, Semantic Intuitions and the Overlooked Interpretative Procedure

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Abstract

In the paper I introduce and discuss the *interpretative procedure*; a stage of investigation in thought experiments in which it is determined which states of affairs are genuine realizations of the described story. I show how incorporating the interpretative procedure to the reconstruction of a certain kind of thought experiments, i.e., the method of cases, provides a solution to the so-called *problem of deviant realizations*. According to this problem it is hard to formulate the logical structure of the method of cases that excludes far-fetched interpretations of a particular thought experiment's description that are inconsistent with the expected conclusion of the experiment. As I show, if we agree that the interpretative procedure precedes the act of establishing whether the thing which is at issue (e.g., *knowledge*) appears within a certain state of affairs, deviant realizations could be ruled out, since within interpretative procedure we establish the set of states of affairs that are compatible with the intentions of the author of the thought experiment. In the paper I provide a general explanation of how this task could be fulfilled by semantic intuitions and discuss their contextual dependence.

Keywords: Intuitions; deviant realizations; thought experiments; method of cases**1. Introduction**

How are thought experiments constructed? In the past 15 years several proposals were formulated and discussed (see, e.g., Williamson 2007; Ichikawa & Jarvis 2009; Malmgren 2011; Grundmann and Horvath 2014; Saint-Germier 2021). Much of this literature is focused on the *problem of deviant realizations*, according to which many attempts to reconstruct the logical structure of the method of cases do not exclude far-fetched interpretations of thought experiment's descriptions that are inconsistent with the expected conclusions of these experiments. For example, it is argued that some of the mentioned accounts of the logical structure of the method of cases leave the possibility of interpreting Gettier cases in such a way that the protagonist turns out either to have knowledge or to not have justified true belief.

In the paper I argue that the investigation of thought experiments consists of two stages. In the first stage, it is determined whether a particular scrutinized case is a

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deviant or a genuine realization of a thought experiment. I will call this investigation stage of thought experiments the *interpretative procedure*. In the second stage, which I will call the *discriminating procedure*, a verdict is reached on whether the thing which is at issue (e.g., a protagonist's *knowledge*) appears within the scrutinized case (e.g., a Gettier case). As I will show, the problem of deviant realizations can be solved by showing that in the interpretative procedure we establish the set of the genuine realizations of the description of a certain thought experiment thanks to the semantic intuition, and the contextual information about the meaning of a thought experiment's *substantial terms* (e.g., justification, belief, inference for epistemological thought experiments).

The structure of the paper is as follows: first, I will introduce the problem of deviant realizations (section 2); I will discuss both Williamson's solution to this problem (2007) and its criticism (section 3). I will show that the verdict on whether the thing that is at issue appears in the particular state of affairs is preceded by the overlooked interpretative procedure, in which we are distinguishing deviant from genuine realizations of the given thought experiment. Subsequently, I will show that the faculty which enables us to employ the interpretative procedure is semantic intuition (section 4). In order to describe how semantic intuition fulfills its role, I will discuss the problem of its context-sensitivity regarding the interpretative procedure (section 5). In more detail, I will argue that this issue can be explained if we combine the framework of the so-called default interpretation regarding the context-sensitivity of semantic intuition with the framework of semantic approaches to the context-sensitivity of quantifier phrases. I conclude the paper with some remarks concerning the significance of the results for the role of expertise in thought experiments' investigation.

2. The problem of deviant realizations

First, let me introduce the problem of deviant realizations, which is the crucial problem for the discussion of the logical structure of the intuitive judgement within the method of cases.

Within the method of cases we can separate the procedure that aims to determine whether the thing which is at issue appears in the current consideration. For example, in the Gettier (1963) cases the thing that is at issue is *knowledge*; in the discriminating procedure, we discriminate whether Smith's epistemic state is knowledge or not. As Weinberg (2016) states, the verdict within the discriminating procedure can take the form of a conceptual, factual or (meta)linguistic judgement. However, in all of these cases, the essence of this procedure is to determine whether there is a case of X but not of Y, Z ..., or the term "X" and not the term "Y" or "Z" ... applies to the described case. Therefore, for clarity I will refer to this procedure as the *discriminating procedure*.

The problem of deviant realizations arises when one aims to determine the logical structure of an argument that uses the discriminating procedure regarding some thought experiment. Since the discussion of this topic revolves around Gettier cases, it is easiest to explain this problem using the example of one of the Gettier cases.

First, let's assume the following convention (after Williamson 2007):

$K(x, p)$: x knows that p

$JTB(x, p)$: x has a justified true belief that p

$GC(x, p)$: x stands to p as in the given Gettier story

Note that Gettier's aim was to criticize the JTB theory of knowledge, according to which it is necessarily true that knowledge is a justified true belief. This stance could be formalized as:

(T) $\Box \forall x \forall p (JTB(x,p) \equiv K(x,p))$

After considering a few proposals concerning the logical structure of Gettier's argument, Williamson (2007) finally proposed the following reconstruction:

- (1) $\Diamond \exists x \exists p GC(x,p)$
- (2) $\Box \forall x \forall p (GC(x,p) \supset (JTB(x,p) \& \sim K(x,p)))$
- (3) $\Diamond \exists x \exists p (JTB(x,p) \& \sim K(x,p))$,

Hence: (Con) $\sim \Box \forall x \forall p (JTB(x,p) \equiv K(x,p))$

in natural language:

- (1) It's possible for some x to stand to some p as in the Gettier story.
- (2) Necessarily, if x stands to p as in the Gettier story, then x has a justified true belief that isn't knowledge.
- (3) It's possible for someone to have a justified true belief that isn't knowledge,
hence: (Con) It's not true that a justified true belief is necessarily knowledge.

Williamson himself pointed out the problem with the above formalization, which was later labeled "the problem of deviant realizations". He notes that very little information is mentioned explicitly in the description of thought experiments. Moreover, in most cases (probably in all of them) it is possible to interpret the described story in such a way that the interpretation would be literally coherent with the explicit description; however, an argument that is based on a thought experiment should not be recognized as conclusive (Williamson 2007: 185).

For instance, consider Gettier's so-called 10-Coins Case,^{1,2} and note that there is very little information about Smith. We do not know the color of Smith's hair. We do not

¹As a reminder, here is the original version of this case:

Suppose that Smith and Jones have applied for a certain job. And suppose that Smith has strong evidence for the following conjunctive proposition: (d) Jones is the man who will get the job, and Jones has ten coins in his pocket.

Smith's evidence for (d) might be that the president of the company assured him that Jones would in the end be selected, and that he, Smith, had counted the coins in Jones's pocket ten minutes ago. Proposition (d) entails:

(e) The man who will get the job has ten coins in his pocket.

Let us suppose that Smith sees the entailment from (d) to (e), and accepts (e) on the grounds of (d), for which he has strong evidence. In this case, Smith is clearly justified in believing that (e) is true.

But imagine, further, that unknown to Smith, he himself, not Jones, will get the job. And, also, unknown to Smith, he himself has ten coins in his pocket. Proposition (e) is then true, though proposition (d), from which Smith inferred (e), is false. In our example, then, all of the following are true: (i) (e) is true, (ii) Smith believes that (e) is true, and (iii) Smith is justified in believing that (e) is true. But it is equally clear that Smith does not KNOW that (e) is true; for (e) is true in virtue of the number of coins in Smith's pocket, while Smith does not know how many coins are in Smith's pocket, and bases his belief in (e) on a count of the coins in Jones's pocket, whom he falsely believes to be the man who will get the job. (Gettier 1963: 122)

²I have decided to analyze the 10-Coins Case instead of the Ford Case because only the original version of the former is analyzed in the literature on deviant realizations, while the Ford Case is analyzed in a version modified by Malmgren (2011) or by Grundmann and Horvath (2014). I find the fact that the

know whether Smith is young or old. We assume that he is a man and not a talking beaver, but we don't know this since in the explicit description of this case there's no such information. Of course, information about the color of Smith's hair, his age or species is irrelevant to the verdict on Smith's epistemic state. However, the 10-Coins Case also lacks information which could change the verdict on whether Smith truly and justifiably believes that *e* (i.e., the man who will get the job has ten coins in his pocket).

Consider the following case:

Mean Boss Case: It is not contrary to what is explicitly stated in the description of the 10-Coins Case that Smith had a talk with his friend Sue, who works for the company where Smith applied for a job. Sue has told Smith that the president of the company is a very mean guy who likes to mislead job applicants just for fun. Smith forgot about the conversation with Sue while inferring *e* from *d* (Jones is the man who will get the job, and Jones has ten coins in his pocket). However, after making this inference he recalled what Sue had told him. In such a case, *d* as well as *e* would be unjustified, but Smith would stand to *e* just as is described in the given Gettier story. Therefore, premise (2) would turn out to be false, and in effect we should consider Gettier's argument unsound.

However, it is clear that the possibility of interpreting the 10-Coins Case in a strange way does not falsify Gettier's argument. If one argued against the Gettier argument by pointing out such a *deviant realization* as the Mean Boss Case, we would probably just say that such a person simply does not understand Gettier's story.

Note that the problem with deviant realizations is not considered a problem because they refute Gettier's argument. It would not be a problem that there are some bizarre realizations of some thought experiments that are inconsistent with the typical conclusions of these experiments. It is common in philosophy to formulate such cases, and there are well-known counterexamples (for example, on the discussion about the existence of qualia, see Dennett's (2007) RoboMary Case, which is a counterexample for Jackson's (1986) Mary Case. On the discussion about the reference of proper names, consider the way in which Burgess (2014) argues against Evans' (1973) conclusions from his Madagascar Case). Putting it somewhat sententiously, the problem with deviant realizations is that we know that they are deviant. In other words, it is clear that deviant realizations do not reflect what an author of a thought experiment intended to communicate (Malmgren 2011: 276–9; Saint-Germier 2021). The proper reconstruction of the logical structure of thought experiments should not allow the possibility of falsifying some thought experiments by pointing out some of their clearly deviant realizations. This is, in a nutshell, the problem of deviant realizations.

As I will show in the following sections, the problem of deviant realization can be solved by appealing to the procedure that precedes the discriminating procedure. In this prior procedure it is determined which states of affairs are genuine realizations of the given thought experiment. What is important, it could be done thanks to semantic intuition that takes into account contextual clues given both by the author of the experiment and by the context in which the description of the thought experiment is given.

description analyzed is formulated by the author of some thought experiment important. I will argue for this view in later parts of the text.

3. Counterfactuals and actual deviant realizations – Williamson’s account

In the following section, I will analyze Williamson’s answer to this problem and its critique in more detail. I will show that close examination of both Williamson’s account and its criticism highlights the fact that the discriminating procedure within the method of cases is preceded by another procedure.

In order to formulate a reconstruction of Gettier’s argument which is immune to the problem of deviant realizations, Williamson weakened (2). According to him, while evaluating Gettier’s thought experiment, we do make a claim about whether someone would have a justified true belief that p and would know that p . Hence, Williamson proposes changing (2) to a counterfactual claim (2*), according to which if someone were to stand to some p as in the Gettier story, then anyone who stood to any proposition in the same way would have justified the true belief that p but would not know that p :

$$(2^*) \exists x \exists p \text{ GC}(x,p) \square \rightarrow \forall x \forall p (\text{GC}(x,p) \supset (\text{JTB}(x,p) \ \& \ \sim \text{K}(x,p)))$$

Williamson insists that the logical structure of Gettier’s argument enriched with (2*) is immune to the problem of deviant realizations. According to Williamson, counterfactual claims limit us to only the nearest possible worlds. To make (2*) true, it is enough that Smith’s justified true belief is not knowledge in our actual world and in the nearest ones. It is then unnecessary to prove that Smith has a justified true belief that isn’t knowledge in *all* possible realizations of the 10-Coins Case (Williamson 2007: 185–6).

However, Williamson’s proposal was criticized on exactly this ground. Although according to (2*) we don’t make a claim about the epistemic state of every subject in every possible world that stands to e as Smith did in Gettier’s story, there is still a possibility that there could be a deviant realization of Gettier’s story in the actual world. Consider the following “Uncle Case”. Suppose I actually do have an Uncle Ted who has indeed applied for a job, who had 10 coins in his pocket, who was unaware of this, and so on (i.e., he was in the same situation as Gettier described). However, Uncle Ted has also had a conversation with his friend Sue about the mean boss’s habit of lying to applicants, and he recalled that conversation just in the moment of inferring e from d . Such a case would be a deviant realization of the 10-Coins Case that would refute Gettier’s argument if we accept (2*) as a genuine formalization of Gettier’s intuition. Williamson’s second proposition is therefore not immune to the problem he intended to solve (see: Ichikawa and Jarvis 2009; Malmgren 2011).

In response to this criticism (see Williamson 2007: 201³; Malmgren 2011: 279–80), Williamson claims that if there indeed were an actual situation in which my uncle stood to e as Smith did in the 10-Coins Case, and my uncle did indeed not have a true and justified belief that e , then the 10-Coins Case would need to be revised. In such a case, it would turn out that the realization in which Uncle Ted appears is not deviant at all. This would mean that Gettier and other philosophers were simply wrong when they considered that Gettier’s thought experiment was in fact conclusive as a refutation of the JTB theory of knowledge.

Consider what the mistake would be in such a case. For simplicity, suppose that the description of the Uncle Case was known but no one revised the 10-Coins Case until the situation described in the Uncle Case actually happened⁴.

³Williamson partially anticipates this kind of argument in *The Philosophy of Philosophy* (2007).

⁴Moreover, Williamson himself is in such a position that he is aware of a similar description (Williamson 2007: 201); however, he insists that until he perceives such a situation in the actual world he won’t agree that it is a genuine counterexample for the 10-Coins Case.

The mistake would not concern attributing knowledge to Uncle Ted or to Smith; therefore, it would not appear in the discriminating procedure. The mistake would concern the fact that one considered Uncle Ted's story to be a deviant realization of the 10-Coins Case; in effect, one counts it as a deviant counterexample, but it is actually genuine. As I have mentioned, before perceiving Uncle Ted's position, nobody would suspect that it is possible that someone could stand to *e* as in the Gettier story but not have justified belief that *e*. However, the actual existence of Uncle Ted and his unjustified belief that *e* would be proof that there is a possibility to stand to *e* as Smith did in the 10-Coins Case but not justifiably believe that *e*. It would thereby mean that the Uncle Case is not a deviant realization of the 10-Coins Case; instead, it is a genuine counterexample to Gettier's argument.

Therefore, in order to check whether Gettier's argument is conclusive, meaning that a justified true belief is not necessarily knowledge, we have to employ two procedures. Firstly, we have to determine which realizations of the 10-Coins Case are genuine, since deviant realizations of this case cannot either disprove or confirm the conclusion of Gettier's argument. As soon as we know which realizations are genuine, we can employ a discriminating procedure by which we can investigate the genuine realizations of the 10-Coins Case and check whether some *genuine* Smith has a justified true belief which is not knowledge. Hence, there are at least two procedures which have to be employed during investigation of the 10-Coins Case; since all thought experiments can be interpreted in a strange way, this fact applies to all thought experiments. The first procedure requires the proper interpretation of a given thought experiment, which is why I call it the *interpretative procedure*, and during this procedure all deviant realizations are ruled out. The second procedure is the discriminating procedure, in which we are already operating on the set of genuine interpretations of a given case. In the next section, I will show that the faculty which enables us to employ the interpretative procedure is semantic intuition, and explain how ruling out deviant realizations within this procedure is done.

4. The interpretative procedure and semantic intuitions

In order to show that semantic intuition enables us to determine which realizations are or are not deviant, I have to explain in more detail what it means that something is a deviant realization of a case.

Note that deviant realizations – just like genuine realizations – are some states of affairs. They could be either possible or impossible (if a thought experiment is fallacious). They could be fictional (as in the proposition formulated by Ichikawa and Jarvis 2009), counterfactual (as in Williamson's proposal) or factual (as the Uncle Case shows). However, it is quite clear that deviant realizations are just states of affairs, which in the 10-Coins Case must contain Smith, Jones, the president of some company, and at least 20 coins (10 in Smith's pocket and 10 in Jones').

Now, note that a certain state of affairs is described in every thought experiment. The 10-Coins Case is nothing more than a long description of some state of affairs which contains Smith, Jones, etc. One can describe a pencil using the description "green pencil". One can also describe some state of affairs with a longer description, such as "Mary surprises John with a present". Gettier also described a certain state of affairs with a much longer description which starts with the words "Smith and Jones have applied for a certain job ...". Some elements of this state of affairs are explicitly stated (such as the number of coins in Smith's pocket), and some are not (such as Smith's haircut).

But, after all, the formulation of the 10-Coins Case, just as any other thought experiment, is nothing more than a long description of a state of affairs.

Now that this is clear, let me propose a definition of a deviant realization:

(Dev) D is a deviant realization of case C if and only if D is literally consistent with the description of C but D is not a denotation of the description of C.

In the above definition, I distinguish between the case and the description of the case, since it could be controversial if what is crucial for a thought experiment is a formulation of that thought experiment or a state of affairs which is the subject of that experiment. However, the main point is that a certain state of affairs is a deviant realization of a certain thought experiment if that state of affairs is not a denotation of a description which is used in the formulation of that thought experiment.

Now, let us consider semantic intuition, which is typically understood as a spontaneous faculty which enables us to determine the denotation of some utterances (see, e.g., Machery *et al.* 2004). A paradigmatic example of the usage of semantic intuition in philosophy is the Gödel Case proposed by Kripke (1980). In this thought experiment, semantic intuition is the faculty by which we determine the denotation (reference) of the name “Gödel”. Even if one argued, as, e.g., Deutsch (2015) did, that arguments instead of intuitions *justify* our judgement that “the man who killed the discoverer of the incompleteness of arithmetic” is not a denotation of the name “Gödel”, semantic intuition still allows us to *determine* the denotation of that name. Semantic intuition might not be a *justificatory source* for Kripke’s claim, but it is still a faculty which enables us to determine the denotation of the name “Gödel”. This is why, even for Deutsch, semantic intuition could be a *causal source* for Kripke’s argument.

The same might be said about definite descriptions and their denotations. In order to determine the denotation of a given description, we appeal to semantic intuitions. Hence, semantic intuitions are responsible for recognizing which states of affairs are denotations of some descriptions and which are not, and thereby which states of affairs are *deviant* realizations of some thought experiments and which are genuine ones.

5. The context dependency of descriptions of thought experiments

It could still be unclear how semantic intuitions fulfill their role in the interpretative procedure. In the following section, I will argue that the problem of deviant realizations is strictly connected with the context dependency of the interpretative procedure. Therefore, I will introduce an explanation of how semantic intuitions are contextually sensitive that is based on two approaches to the contextual dependency problem: one which refers to Levinson’s idea of default interpretation, and a second one which is a semantic approach to the problem of the context-dependency of quantifier phrases.

It is crucial that semantic intuition, especially regarding descriptions, is not only limited to the ability to assess whether a given state of affairs meets the conditions explicitly stated in the formulation of a thought experiment. Semantic intuitions’ outputs are context dependent. Probably the most important contextual issue which has to be considered when interpreting thought experiments is the purpose for which the case was formulated. Note that deviant realizations do not contradict the descriptions in Gettier’s story. Nevertheless, they are not its denotations since we know that Gettier’s reason for formulating the 10-Coins Case was to show that some justified true beliefs are not cases of knowledge. Therefore, it is obvious that plausible denotations of the

10-Coins Case are states of affairs which contain Smith, who has a justified true belief about the man who will get the job, and not an unjustified true belief as, e.g., in the Mean Boss Case. Note that this is the case even though the description of the Mean Boss Case does not contradict anything that is stated explicitly in Gettier's story.

This relation is similar to the one that occurs in the following situation. Suppose that Tom is getting ready for a walk with his dog. He is in a hurry, so while putting the dog on the leash he's asking his wife to pass him the blue shoes. Then, suppose that his wife hands him the blue shoes of their six-month-old son. It is clear that Tom's son's blue shoes are not what he meant when asking his wife for blue shoes, despite the fact that his son's blue shoes are also a pair of blue shoes. Since the fact that what Tom was talking about was his shoes is about the denotation of the description "the blue shoes", it is plausible that we know what the denotation of this description is because of our semantic intuition. Similarly, semantic intuition allows us to determine whether a given interpretation of a thought experiment scenario is deviant or not, since we know the context of formulating thought experiments quite well.

Now, we can consider an important issue: what is the mechanism that underlies semantic intuitions? At first, it is worth noting that it is reasonable that such a mechanism could vary depending on what the content of some intuition is. For example, both intuitions about the denotation of proper names and descriptions are semantic intuitions, since both of them concern denotations of some utterances. However, it is possible that a different set of information is processed when determining a denotation in a case of proper names than in a case of descriptions. For example, according to the Kripkean tradition, when establishing the denotation of proper names, some causal-historical features have to be taken into account, but such information is irrelevant in the case of descriptions.

In the theory of context dependence, as in the whole of semantics, there is an important distinction between two kinds of problems regarding context dependence and, respectively, two kinds of explanations. In the literature, this distinction is drawn between a theory of languages and a theory of language (Lewis 1975), between semantics and metasemantics (Kaplan 1989: 573), or between foundational semantics and descriptive semantics (Stalnaker 1997; Stanley and Gendler Szabó 2000). This distinction is discussed by Stanley and Gendler Szabó in detail in the context of the problem of contextual dependency regarding the domain of incomplete descriptions. So, I will use their terminology, and I will refer to their explanation of this issue.

Stanley and Gendler Szabó explicate the descriptive and foundational problems of context dependence as follows:

The *descriptive problem* of context dependence for an expression e relative to a context c is the problem of deriving the interpretation of e relative to c , given a prior characterization of what features of the context c have a bearing on the interpretation. (Stanley and Gendler Szabó 2000: 223)

The *foundational problem* of context dependence for an expression e relative to a context c is the problem of making these specifications. That is, the foundational problem of context dependence for an expression e relative to a context c is specifying what it is about the context in virtue of which certain entities (be they objects, properties, or propositions) play the role they do in the interpretation of an occurrence of e . (Stanley and Gendler Szabó 2000: 223)

In short, in a descriptive theory of the context dependence of descriptions, one has to propose the general idea of what is a proper interpretation of descriptions relative to the

context in which they are uttered. Foundational theory provides an explanation: *how* it is done. In what follows, I will discuss Saint-Germier's (2021) foundational explanation of the contextual dependence of descriptions of thought experiments, and Stanley and Gendler Szabó's (2000) descriptive theory of the contextual dependence of incomplete descriptions. I will argue that each of these theories could explain different aspects of the problem of deviant realizations, and I will discuss the consequences of these theories for that problem.

5.1. The foundational view – the default interpretation

A foundational explanation of how the interpretation of thought experiment descriptions is made was proposed by Saint-Germier (2021). He argues that an interpretation of a description of Gettier Cases is employed in line with pragmatic theories of “default interpretation”. He adopts Levinson's (2000) framework and argues that deviant realizations are ruled out if one is guided by three heuristics:

- The Q-heuristic (*quality*): “What isn't said isn't”
- The I-heuristic (*informativeness*): “What is simply described is stereotypically exemplified”
- The M-heuristic (*manner*): “What is said in an abnormal way isn't normal”

These heuristics are pragmatic mechanisms which make it possible to enrich the literal content of utterances in order to decode what was meant by a speaker in a particular context.

According to Saint-Germier, what is crucial in an interpretation of Gettier Cases is to follow I- and Q-heuristics. Regarding the I-heuristic, the hearer has to assume that by uttering *u* the speaker produces as little linguistic information as is necessary to achieve his communicative aim. Moreover, according to the I-heuristic, the hearer has to try to find the most specific interpretation that enables her to decode what the speaker *m*-intended by *u*. *M*-intention is Grice's term, which Saint-Germier (2021: 1794) describes after Grice as follows:

An utterer *U* *m*-intends to produce *r* on addressee *A* by uttering *x* if and only if “*U* utters *x* intending *A* (1) to produce *r*; (2) to think *U* intends *A* to produce *r*; (3) to think *U* intends the fulfillment of (1) to be based on the fulfillment of (2)” (Grice 1989: 105)

According to Saint-Germier, the second heuristic which is followed by an interpreter while interpreting descriptions of thought experiments is the Q-heuristic. In short, according to this heuristic, the hearer ought to assume that “the speaker made the strongest statement consistent with what he knows” (Levinson 2000).

Therefore, according to Saint-Germier, when interpreting some description of a thought experiment, we are taking into account such contextual issues as the utterer's motivations to formulate this thought experiment, her information about the possible interpreter, and what she knows. This set of contextual information is the input for the interpretation of the thought experiment's description according to Q- and I-heuristics.

Although the Default Interpretation account nicely shows how contextual factors influence the interpretation of thought experiments, it does not offer any explanation

of *which parts* of a story could be interpreted wrongly, and thereby which parts could cause a *deviant* interpretation. Indicating which parts of the description of a thought experiment could be responsible for a possible deviant interpretation is important for a few crucial methodological reasons. As, e.g., Weinberg (2016: 246–252) noted, the methodology of thought experiments in philosophy is overwhelmingly undeveloped. The use of thought experiments is often not supported by any methodological desiderata, which are demanded if philosophers want to conduct their research in a methodologically responsible manner. In particular, in order to avoid possible deviant interpretations of a thought experiment, one has to know which parts of its description could induce deviancy. Q- and I-heuristics are rather general maxims which do not specify which constituents of utterances could induce possible misunderstanding. This gap is, in turn, filled by at least one descriptive account that explains the problem of context dependency, which I will discuss in a moment. Moreover, apart from the aforementioned methodological issues, such a descriptive account, together with a Default Interpretation (which is foundational), constitutes a full and profound account of the contextual dependency of a thought experiment's descriptions.

5.2. *The descriptive view – a semantic account of the quantifier domain restriction (STOID)*

One of the most influential descriptive accounts that could explain the relation between the context and the denotation of a description of a thought experiment is a semantic account of the context-sensitivity of quantifying the domain of incomplete definite descriptions (see, e.g., Von Stechow 1994; Stanley and Gendler Szabó 2000). For brevity, I will refer to this account as the “STOID account” (“semantic theories on incomplete descriptions”). According to this approach, in typical incomplete descriptions the context sensitivity is caused by the co-habitation of a node by a common noun and a contextual variable. For example, if we consider a sentence such as “Every bottle is empty” in the syntactic representation of such a sentence, there is a variable which represents a restriction of the domain of the noun “bottle”. Then, what the quantifier “every” is quantifying is not just the noun “bottle”, which represents any bottle in the world, but also a pair of arguments such as $\langle \text{bottle}, f(i) \rangle$, which represents a contextual set of *some* bottles. According to STOID, $f(i)$ is a variable that represents a contextually given function. This function associates objects that are also given by the context with sets. The denotation of $\langle \text{bottles}, f(i) \rangle$ is the intersection of the set of bottles and the set that results from applying the value of ‘ f ’ to the value of ‘ i ’. For example, imagine that Casper and Lu are at a house party. In the middle of the night, Lu asks Casper for some wine. Casper goes around the whole flat, then returns to Lu and says, “Every bottle is empty”. According to STOID, the context assigns to ‘ i ’ the flat in which the party is taking place, and to ‘ f ’ the relation of *being in*. In effect, the denotation of “bottle” is a set that is the intersection of all bottles and all entities that are in the flat in which the party is taking place. In short, the context restricts the domain of ‘bottles’ to bottles in the flat in which Lu and Casper are.

STOID could be useful in analyzing the problem of deviant realizations, since on the grounds of this account we can identify which terms could be interpreted in a way that could induce deviant interpretations.

According to Grundmann and Horvath (2014) the way to make Gettier Cases deviant-realizations-proof is to slightly change the formulation of the case description by adding a few provisions. It is worth noting that although their proposal is intended

for another Gettier Case (The Ford Case), the provisions that should be added to the description in order to rule out possible deviant interpretations are almost the same (the only differences concern irrelevant details of the story).

Look at the modified version of The Ford Case. The provisions provided by Grundmann and Horvath are underlined (the numbers assigned to all provisions were added by me):

Smith (*p1*) justifiedly believes that Jones owns a Ford, on the basis of seeing Jones drive a Ford to work and remembering that Jones always drove a Ford in the past. From this (*p2*) belief alone, Smith (*p3*) logically infers, (*p4*) at time t, (*p5*) to the justified belief that someone in his office owns a Ford, (*p6*) which provides his only justification for that belief at t. In fact, someone in Smith's office does own a Ford, (*p7*) so that Smith's latter belief is true – but it is not Jones, it is Brown, (*p8*) and so Smith's initial belief was false. (Jones sold his car and now drives a rented Ford.) (*p9*) Also, if Smith knows at t that someone in his office owns a Ford, then he knows this at t only in virtue of the facts described. (Grundmann and Horvath 2014: 530)

Note that all provisions concern features of Smith's beliefs (that Jones owns a Ford – hereafter the belief that *q*; or that someone in Smith's office owns a Ford – hereafter the belief that *r*) or of the justification for *r*, or of the inference which leads Smith to believe that *r*. The set of Smith's possible beliefs that *q* is restricted to the set that contains only the beliefs that *q*, which are justified (by *p1*) and false (by *p8*). Similarly, the set of Smith's possible beliefs that *r* is restricted to the set that contains only those beliefs that *r*, which are also justified (by *p5*) but true (by *p7*). From the set of justifications for the belief that *r*, which Smith could have, these provisions restrict the domain to the sets of these justifications which are based on the inference from the belief that Jones owns a Ford (according to *p6* and *p9*). Provisions *p2*, *p3* and *p4* restrict the domain of possible inferences that Smith could make from the set of all possible inferences that contain the fact that Jones owns a Ford as their premise and *r* as their consequence to the set of such inferences that additionally fulfill *p2*, *p3* and *p4*. In effect, the restricted domain contains only those inferences that contain only one premise (according to *p2*), which are logical (according to *p3*), and which are made at time *t* (according to *p4*, although *p4* is rather a technical provision which enables justification's domain restriction by *p9*).

As Grundmann and Horvath and Saint-Germier pointed out, these or almost identical provisions could be added to all Gettier cases to make them deviant proof, in particular to the 10-Coins Case. Therefore, the information that enables us to rule out deviant interpretations in Gettier cases concerns the restrictions of the domain of three terms, namely “belief”, “justification” and “inference” (or their other forms, such as “justify”, “infer” etc.). Note that these three terms are clearly epistemic. What I want to stress is that it is not just a coincidence. My suggestion is that STOID accounts enable us to explain the role of context in the interpretative procedure in the following way: although contextual features are taken into account during a thought experiment's interpretation in order to indicate the set of denotation for all terms that appear in the description (Bach 2000; Moldovan 2016), the possible deviancy is caused by not restricting the domain of terms which are clarified by the mentioned provisions. Since, in Gettier cases, all provisions that are sufficient to avoid deviant interpretations concern three terms, namely “justification”, “belief” and “inference”, then it seems

plausible that contextual features that make a particular interpretation genuine or deviant concern the restriction of the domain of *substantive terms* for the considered thought experiment. One could argue that provision *p9* is not about inference but about the truth of Smith's belief, since we should understand the phrase "in virtue of" not as expressing the justification but as *what makes it true*. However, if this provision were about the truth, it would still be about an epistemic feature.

Let me explain in more detail how contextual features are taken into account in restricting the domain of these substantive terms and how taking them into account makes it possible to avoid deviant interpretations. Consider the first sentence from the Ford Case, without the provision added by Grundmann and Horvath:

Smith believes that Jones owns a Ford, on the basis of seeing Jones drive a Ford to work and remembering that Jones always drove a Ford in the past.

There are a lot of possible deviant interpretations of this sentence without the provision (*p1*), which explicitly states that Smith's belief has to be justified. One could interpret this sentence in such a way that Smith believes that Jones owns a Ford because he had a dream about it. However, what is crucial for Gettier is the fact that this belief is justified (and is also false, which is guaranteed by provision (*p4*)). Now note that if we look at Gettier's article, there are contextual clues that Gettier aims to describe a story in which someone infers something true from a justified but false belief:

I shall begin by noting two points. First, in that sense of "justified" in which S's being justified in believing P is a necessary condition of S's knowing that P, it is possible for a person to be justified in believing a proposition that is in fact false. Secondly, for any proposition P, if S is justified in believing P, and P entails Q, and S deduces Q from P and accepts Q as a result of this deduction, then S is justified in believing Q. Keeping these two points in mind, I shall now present two cases in which the conditions stated in (a) [that is: (i) *P is true*, (ii) *S believes that P*, and (iii) *S is justified in believing that P*] are true for some proposition, though it is at the same time false that the person in question knows that proposition. (Gettier 1963: 121, comment in brackets added by me)

For someone who knows the context in which Gettier formulated his cases, it is obvious that he meant a story in which Smith has a *justified* belief that *p*, even if there are possible interpretations of Gettier's story which are coherent which the literal formulation of this story, in which Smith is unjustified in believing that *p*. According to STOID, the verb "believes" represents two arguments <believes, *f(i)*>, where the codomain of "believes" and *f(i)* is a set of *justified* beliefs, since *f(i)* associates each justification with a justified proposition or propositional attitude.

Similarly, it is contextually clear what kind of inference leads Smith to believe that *r*, and what kind of justification Gettier meant when he claims that Smith has a justified true belief that *r*. All of this information is contextually given in such a clear way that a reader with knowledge of such a context without any provisions could interpret Gettier cases in a non-deviant way.

As mentioned above, the domain of description could be restricted by a contextually given variable that cohabits with all terms, including, e.g., common nouns, from the description. In the above sentence, there is an example of the common noun 'work', which could also be interpreted as a noun which represents two arguments <work,

$f1(i)$, where the codomain of $f1(i)$ is a set of places that Jones drives to, and where Smith works. However, thought experiments are unusual stories. It is not necessary to imagine exactly the kind of story that Gettier had in mind. It is enough to imagine such a story in which epistemic features are represented just as Gettier wanted. Even if we interpret a Gettier story in such a way – that Jones drives a Ford to his neighbor's workplace, and Smith sees him – this would still be a non-deviant realization of Gettier's scenario, even if Gettier probably has a different story in his mind. As long as the crucial epistemic features were encoded in line with Gettier's intention (so, provisions 1–9 would be fulfilled), the interpretations would be non-deviant, since they make it possible to refute the JTB theory of knowledge.

In the interpretation of Gettier cases, semantic intuition, which is responsible for interpreting them in a genuine way, would be then intuition about the meaning of epistemic terms which takes into account the quantifying restriction provided by the context of formulating a particular thought experiment. Grundmann and Horvath suggest – and Saint-Germier asserts – that similar provisions should be imposed on the proper interpretation of all kinds of thought experiments. If these philosophers are correct, my suggestion could also be generalized to other kinds of thought experiments. Of course with respect to the substantive nouns, which would be different for different branches of philosophy.

At the end of this section, let me anticipate the two objections against my general views on the role of semantic intuition in the interpretative procedure. One could argue that since we have to take some contextual information into account (especially in line with the default interpretation, which refers to the philosophy of the father of pragmatics, namely Grice) when determining which states of affairs are deviant realizations of a thought experiment, then we should not call the faculty which enables us to employ the interpretative procedure “*semantic intuition*” but, e.g., “*pragmatic intuition*”.

However there are good reasons to insist that the faculty which is required in the interpretative procedure is semantic and not pragmatic intuition. Note that we simply know that *it is true* that Smith from the 10-Coins Case has a justified true belief. We know this because we understand the formulation of this case. We know that it is true because, after all, what we do by deciding which states of affairs are deviant or genuine is determine the denotation of some description. No matter how important pragmatic issues are in this process, at the end of the day it is all about establishing the set of possible *denotations* of some expressions.

One could also argue that my account, which combines the pragmatic approach of default interpretation and STOID, is heterogeneous. However, as Stanley and Gendler Szabó point out, the fact that STOID is a semantic not pragmatic approach does not mean that the Gricean mechanism cannot be used to select a domain restriction. In fact, Stanley and Gendler Szabó explicitly offer the option to incorporate the Gricean framework with STOID (Stanley and Gendler Szabó 2000: 236). The difference between the pragmatic and semantic approaches towards the Problem of Quantifier Domain Restriction is that the former states that contextual features affect what is said while the latter states that they only affect what is communicated.

6. Comparison to other accounts

As I have shown the problem of deviant realizations can be solved by appealing to the interpretative procedure that precedes the verdict on whether the thing that is at issue

appears in a given state of affairs. As I have shown in section 3, Williamsonian reconstruction of the logical form of the method of cases has to be enriched with the account focused on the interpretative procedure in order to solve that problem. Below I will compare my solution also to other existing approaches in the literature.

Ichikawa and Jarvis (2009) proposed that we should treat facts about the protagonists from Gettier's case as claims about what is *true in the fiction* described by Gettier with reference to the Lewisian theory of truth in fiction. According to them, we have to accept the proposition g that "every element from the set of propositions true in the fiction created by Gettier is true". Now, as Ichikawa and Jarvis note, some propositions from this set are inconsistent with deviant realizations (among these propositions, there is, e.g., one, that states that the president of the company does not lie to Smith). What is important, the fiction is somehow demonstratively given by Gettier case's description, and therefore the truth-value of propositions about Gettier cases are independent of anyone's interpretation. According to Ichikawa and Jarvis, the proper reconstruction of Gettier's argument is then the following:

- (1I) $\diamond g$
 (2I) $\square (g \supset \exists x \exists p (JTB(x,p) \ \& \ \sim K(x,p)))$,
Hence: $\exists x \exists p (JTB(x,p) \ \& \ \sim K(x,p))$

Another proposal was formulated by Malmgren (2011) who suggested that crucial in evaluating Gettier's thought experiment is the claim concerning the *metaphysical possibility* of a non-deviant realization of Gettier's story in which Smith justifiably and truly believes that e but does not know that e . However, the possibility of one non-deviant realization of Gettier's story is sufficient to contradict the thesis of JTB theory of knowledge. Therefore, a possibility of deviant interpretations does not harm Gettier's argument. The logical structure of Gettier's argument is then according to Malmgren as follows:

- (1M) $\diamond \exists x \exists p (GC(x,p) \ \& \ JTB(x,p) \ \& \ \sim K(x,p))$
Hence (straightforwardly): $\exists x \exists p (JTB(x,p) \ \& \ \sim K(x,p))$.

Both of these accounts were criticized. For example, Malmgren pointed out that (2I) could be satisfied by someone who has justified true belief that is not knowledge *outside* Gettier's fiction, even if one would fill the set of propositions true-in-fiction in a deviant way (let me call the situation in which it is the case: Outsider Case). In such a case, it would be possible to accept Gettier's argument even if one interprets his thought experiment in a deviant, and therefore *wrong*, way. Against Malmgren's account it was raised among others that it is possible that (1M) is true and accepted by someone, even if that person does not believe that Smith from Gettier case has justified true belief that is not knowledge. Suppose for example, that Ann believes that knowledge differs from justified true beliefs because she was convinced by some other argument than Gettier's, e.g., by the lottery case, but at the same time she does not think that Smith from Gettier's does not know that e . In such a case (1M) would be true, even if Ann would think about deviant realization of Gettier cases, or simply does not share Gettier's intuition (see, e.g., Gardiner 2015: 712) (I will refer to this possibility as Ann Case).

Let me remind you that one of the most important arguments against Williamson's view was that the predicate GC in the content of the intuitive judgement could refer to some *actual* deviant realization of the case's description, as Uncle Case shows. Now, let

consider what Williamson's, Ichikawa and Jarvis' and Malmgren's views have in common. All of these accounts aim to solve the problem of deviant realizations by appealing to the content of a judgement within the discriminating procedure, and arguing that a certain formulation of that content would exclude deviant realization. However, as counterexamples formulated against all of the mentioned accounts show (Uncle Case for Williamson's account; Outsider Case for Ichikawa and Jarvis'; and Ann Case for Malmgren's) all of these accounts fail if considered as attempts to solve the problem of deviant realization. They could be a plausible account of the so-called *content problem*, i.e., the problem of what is the content of the intuitive judgement in the method of cases. All of them fail however if faced with the possibility of deviant interpretation of the given case description.

The strategy proposed in this paper has to be added to each of the mentioned accounts in order to make them truly *deviant realizations*-proof. If we think that the intuitive judgement in Gettier cases is a counterfactual claim (as in Williamson's approach), we have first to determine which set of situations Gettier intended to refer to. After that, we can start the investigation of what would have been the case if things were as Gettier intended to describe. Similarly, if we think, following Ichikawa and Jarvis, that in Gettier cases we are making judgements about the fiction, we have to establish what kind of fiction Gettier wanted to demonstrate to us. Finally, if we think, after Malmgren, that the judgement about Gettier cases is a judgement about a particular metaphysical possibility, we have to establish *which* possibility Gettier intended to describe.

This task can be achieved if we accept the account proposed in this paper according to which discriminating procedure is preceded by another, interpretative procedure in which it is determined which states of affairs are genuine realizations of a given case on the basis of analysis of contextual clues regarding the meaning of the substantive terms. This strategy was partly anticipated by Grundmann and Horvath (2014) and Saint-Germier (2021). Showing that deviant realizations of Gettier cases could be excluded by reformulation of their description by the former and establishing the idea according to which the deviant-proof reformulation of the Gettier case corresponds with the default interpretation of Gettier cases by the latter, puts the discussion concerning the problem of deviant realizations on the right track. My solution, in contrast to Grundmann and Horvath's and Saint-Germier's, sets aside the content problem (according to both of these accounts the content of the intuitive judgement in Gettier case is a strict conditional), and proposes more detailed explanation of how thought experiments are interpreted. What is most important in the account proposed, and what was missed by all of the previous ones, is that the solution of the problem of deviant realization is independent from the solution of the content problem, and what is more, the essence of that solution is that deviant realizations are ruled out by the previous stage at which semantic intuitions help us to interpret the *substantial terms* in the case description in a way coherent with both the author's intentions and the theoretical context of the formulation of the case.

7. Conclusions and last remarks

I have argued that the problem of deviant realizations is that before determining whether the thing that is at issue appears in the given state of affairs, we have to establish the set of genuine states of affairs that are consistent with contextual clues given by the author or embedded in the context of a certain thought experiment's formulation. I

have shown that this task is achieved by semantic intuitions in a way that combines the framework of default interpretation with the semantic views of the context-sensitivity of quantifying the domain of some incomplete definite descriptions. What follows from application of these approaches is that it is crucial in the interpretative procedure to restrict the domain of substantive terms from the perspective of the purpose of a particular thought experiment with respect to the theoretical context in which it is formulated.

The last conclusion concerns a problem that is often raised when the problem of deviant realizations is considered: the role of expertise in interpreting thought experiments.

Since contextual clues have to be taken into account in order to interpret substantive terms correctly, the interpretative procedure requires some background knowledge. The question is how *expert* does this knowledge have to be? It is true that Gettier's restrictions on epistemic terms are not very technical; however, knowing *the purpose* of this thought experiment requires at least acquaintance with the epistemological context in which Gettier's thought experiment was formulated. For some, this context might be obvious even without reading the first page of Gettier's article. The question of the universality of intuitions elicited by epistemological thought experiments is still open (for recent arguments that epistemic intuitions are cross-culturally stable, see, e.g., Knobe 2019, 2021; Yuan and Kim 2021; for arguments in favor of the opposite view see, e.g., Waterman *et al.* 2018; Sękowski *et al.* 2021; Stich and Machery 2022). However, even if, as e.g., Knobe or Yuan and Kim argue, there are no systematic demographic differences in the intuitions elicited by specifically Gettier's scenario, and they usually do not deviate from the epistemological mainstream, in experimental findings there are always *some* people that do not share Gettier's intuition. The possible explanation for this is that they do not interpret Gettier's story in a way which Saint-Germier refers to as "default". There could be several reasons for this. For example, the fact that a participant sees a Gettier scenario during an experimental study could induce the so-called skeptical pressure (see, e.g., Kiper *et al.* 2021). In effect, such a participant could interpret a story with no restrictions on the domain of "justification" that is mentioned in the story. Another possibility is that participants could be under skeptical pressure because they would perceive a Gettier scenario as a "strange philosophical scenario in which something must be weird". No matter what the correct explanation is, the crucial fact for our purposes is that, *pace* Saint-Germier (2021), no "default interpretation" is accepted by all hearers without any contextual clues, like the introduction that preceded the thought experiment provided by the author, or the theoretical context of the paper in which a thought experiment is presented. Genuine interpretation *may* not necessarily require any *philosophical* knowledge, but it at least requires minimal information about the possible purpose of the author of the thought experiment.

This last conclusion is important from several perspectives: from the perspective of experimental philosophy, it means that various possible interpretations should be taken into account when designing a study, since different interpretations could cause differences in intuitions. Therefore, one has to remember to either present the theoretical context of the presented thought experiments or at least explicitly express all relevant provisions that ensure the proper interpretation. The take-home message for non-experimental philosophers is that if there is a possibility of interpreting some case in a deviant way (and this probably always occurs), then a methodologically responsible philosopher should be aware of these possibilities and formulate thought experiments in a way that rules out such a mistake. This is one possible methodological desideratum

which, according to Weinberg (2016: 300–3), should be demanded from the perspective of the insufficiently refined methodology of thought experiments.⁵

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