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# RESEARCH ARTICLES

# PREDICATES OF PERSONAL TASTE AND FAULTLESS DISAGREEMENT

Mihai HÎNCU

ABSTRACT: In this paper, I focus on the disputes arising in regions of discourse in which bare sentences with predicates of personal taste occur. After I introduce, in the first section, the distinction between the disputes arising in regions of discourse concerning objective matters of fact and those arising in regions of discourse about subjective matters of personal taste, I present, in the second section, the solutions which the main semantic theories have offered to the puzzle of faultless disagreement. In the third and the fourth section of the paper, I discuss the proposal advocated by truth perspectivalism, according to which the disputes concerning matters of personal taste constitute faultless disagreements. After I present the solution proposed by Kölbel to an argument whose conclusion establishes that no disagreement can be faultless, I show that this solution presents major disadvantages for truth perspectivalism. These disadvantages highlight the fact that the disputes concerning matters of personal taste, as they are construed in truth perspectivalism, do not constitute authentic examples of faultless disagreements, and that the coherence of the semantic program which truth perspectivalism advocates, with regard to sentences from regions of discourse about matters of personal taste, must be put in doubt.

KEYWORDS: predicates of personal taste, truth perspectivalism, semantics, parameter, discourse, faultless disagreement

## 1. Introduction

In the discourse involved in day to day communication, there are some regions in which the language has a representational function which is best captured in terms of the truth-conditions the sentences from these regions possess. The meanings of the sentences from these areas of discourse are usually explained by means of the conditions which specify how the world has to be in order for the sentences to be true. The declarative sentences involved in these areas of discourse make them truth-apt in the sense that the semantic contents which the sentences's utterances express are truth-evaluable. Thus, if things in the world are exactly as how these sentences represent them to be, then their truth-conditions are satisfied and, consequently, the sentences are true. Insofar as the utterances of sentences from these regions of discourse concern matters of fact, a dispute involving two agents uttering contradictory sentences will have a *faultness* aspect. In cases like this one, given that the objects of the disputes are objective matters of

fact, one of the agents involved in the dispute will make an error with respect to facts. Consider a dispute in which the agents *i* and *j* utter, in the same context, the sentences [1] and [2] below:

> [1] Shogaol is a chemical compound of ginger responsible for its taste.
>
> [2] Shogaol is not a chemical compound of ginger responsible for its taste.

As far as the dispute exemplified here involves two contradictory utterances concerning an objective matter, there has to be a fact which settles the disagreement between *i* and *j*. Given that the shogaol is indeed one of the chemical compounds of ginger responsible for its taste, it is obvious that the agent *j* is at fault. In all the disputes of this kind, it is not possible for both agents to be right while having contrasting views about the particular disputed issues. All the disputes arising in regions of discourse concerning matters of fact are subject to what Crispin Wright has called *the constraint of cognitive command*.[1] According to Wright, in order to exert a cognitive command, a particular region of discourse has to satisfy the condition defined by him as follows:

> It is a priori that differences of opinion formulated within (that) discourse, unless excusable as a result of vagueness in a disputed statement, or in the standards of acceptability, or variation in personal evidence thresholds, so to speak, will involve something which may properly be regarded as a cognitive shortcoming.[2]

There are, however, some regions of discourse which comprise sentences whose truth-values cannot be objectively determined and, consequently, are not subject to the above constraint of cognitive command. One example is the class of sentences in which occur predicates of personal taste, more precisely terms like *delicious*, *fun*, *disgusting*, *boring* and *sexy*. Even though the utterances of these sentences express truth-evaluable semantic contents, their truth-values no longer depend on objective facts in reality, but instead on irreducibly subjective aspects.[3] The utterances of sentences formed with predicates of personal taste concern matters of opinion or, more precisely, subjective matters, not objective matters of fact. As they do not concern matters of fact, it is usually considered that, in a dispute involving two agents which utter contradictory sentences from the region of discourse concerning matters of personal taste no agent makes an error with

[1] Crispin Wright, "On Being in a Quandary," *Mind* 110 (2001): 53.

[2] Wright, "On Being in a Quandary," 55.

[3] Dag Westerstahl, "Compositionality in Kaplan Style Semantics," in *The Oxford Handbook of Compositionality*, eds. Markus Werning, Wolfram Hinzen, and Edouard Machery (Oxford: Oxford University Press, 2012), 201.

respect to facts. Consider a dispute in which the agents *i* and *j* utter, in the same context, the sentences [3] and [4] below:

[3] Ginger is tasty.

[4] Ginger is not tasty.

As far as the above dispute involves two contradictory utterances from the region of discourse concerning subjective matters, there is no fact which can settle the disagreement between *i* and *j*. In this scenario, it is possible for both *i* and *j* to be right even though they entertain contrasting views about the particular disputed issue. As the regions of discourse in which sentences like [3] and [4] occur do not exert cognitive command, it is usually considered that the class of sentences formed with predicates of personal taste give rise to disagreements that are faultless. Such disagreements are defined as cases in which, given that two agents *i* and *j* utter, in the same context, the bare sentences $\varphi$ and $\sim\varphi$ containing the same predicates of personal taste, and that the semantic contents [$\varphi$] and [$\sim\varphi$] expressed by their utterances cannot be simultaneously true, the following two conditions are satisfied:[4]

[a] The agent *i* believes the proposition [$\varphi$] and the agent *j* believes the proposition [$\sim\varphi$].

[b] Neither *i* nor *j* commits an error.

In this paper, I will focus on the disputes arising in regions of discourse in which bare sentences with predicates of personal taste occur. Accordingly, I will present, in the second section of the paper, how the disputes concerning matters of personal taste are framed in different semantic theories. In the third and the fourth section of the paper, I will discuss the *faultless* and the *disagreement* aspects of the disputes about subjective matters, as they are advocated in truth perspectivalism, and I will dispute the coherence of the proposal upheld by truth perspectivalism according to which the disputes involving sentences formed with predicates of personal taste give rise to faultless disagreements. After I present the solution proposed by Max Kölbel, one of the main proponents and defenders of the truth perspectivalism's program concerning matters of personal taste, to an argument whose conclusion establishes that no disagreement can be faultless, I will show that this solution presents major disadvantages for truth perspectivalism. These disadvantages highlight the fact that, insofar as the disputes occurring in regions of discourse concerning matters of personal taste are

[4] Max Kölbel, "Faultless Disagreement," *Proceedings of the Aristotelian Society* 104 (2004): 54.

conceived in a truth perspectivalist manner, one cannot consider both that these disputes involve real disagreements and that they do not involve any error.

## 2. Solutions to the Puzzle of Faultless Disagreement

In this section, I will present how the disputes arising in regions of discourse concerning matters of personal taste are framed in different semantic theories. The main semantic theories which have offered solutions to the puzzle of faultless disagreement and which will be presented below are *expressivism*, *invariantism* and *perspectivalism*.

According to expressivism, the regions of discourse in which occur sentences formed with predicates of personal taste are not truth-apt.[5] Consider a scenario in which Mihai and Irina utter, in the context of a dispute, the following sentences formed with the same predicate of personal taste:

[3] Ginger is tasty.

[4] Ginger is not tasty.

According to expressivism, the utterances of [3] and [4] express the attitudes of the agents involved in the conversation: Mihai likes the taste of ginger while Irina doesn't. In this theory, the above utterances do not express a semantic content and, as such, they don't have a truth-value.[6] Given that the sentences like [3] and [4] above belong to a region of discourse which, according to expressivism, is deprived of truth-conditions, the agents who utter them in a particular context will not assert anything and, therefore, they do not disagree. Insofar as the utterances of [3] and [4] do not express beliefs which Mihai and Irina have, but express instead their subjective attitudes toward the taste of ginger, neither of them commits an error.

As it was already mentioned at the end of the previous section, in order for a dispute which involve sentences from regions of discourse concerning matters of personal taste to constitute a faultless disagreement, two conditions [a] and [b] must be satisfied. In expressivism, the condition [b], according to which neither agent involved in such a dispute commits an error, is satisfied. Insofar as, in expressivism, the utterances like [3] and [4] above do not have the function to express beliefs and to assert, the agents having a dispute about matters of personal taste do not disagree, and the condition [a] of the faultless disagreement, which

[5] Kölbel, "Faultless Disagreement," 65; Massimiliano Vignolo, "Why Non-Factualists Should Love Conceptual Role Semantics," *Grazer Philosophische Studien* 80 (2010): 1; Wright, "On Being in a Quandary," 54.

[6] Mark Schroeder, *Being For* (Oxford: Oxford University Press, 2008), 3.

demands that the agents involved in a dispute of this kind must believe the contradictory propositions their utterances express, is not satisfied.

In an opposite direction, invariantism erases the line dividing the regions of discourse concerning subjective matters of personal taste and the regions of discourse concerning objective matters of fact. According to invariantism, the predicate of personal taste occurring in the sentences [3] and [4] is similar to any other monadic predicate occurring in sentences concerning matters of fact. The invariantist advocates the idea that bare sentences formed with predicates of personal taste express, in *all* contexts of utterance, semantic contents whose truth-values can be determined in a completely objective way.[7] In this theory, it is a matter of fact whether or not the ginger has the property of being tasty. The function of an utterance of a sentence from regions of discourse about matters of personal taste is, according to invariantism, to describe the world in a perspective-independent manner. In this regard, it is considered that the invariant semantic content expressed by the utterance of [3] is the perspective-neutral proposition [Ginger is tasty], while that expressed by the utterance of [4] is the perspective-neutral proposition [Ginger is not tasty].[8]

Insofar as the invariantist semantics treats the sentences formed with predicates of personal taste in the same manner in which the sentences from regions of discourse concerning matters of fact are treated, the discourse about matters of personal taste is subject to the constraint of cognitive command.[9] Therefore, in any dispute similar to the above mentioned dispute involving the utterances of [3] and [4], the facts will settle the disagreement between the agents and, consequently, one of them will make an error with respect to how these facts are.

In this theory, the condition [a] of what has to be a faultless disagreement, according to which the agents involved in a dispute concerning matters of personal taste must believe the contradictory propositions their utterances express, is satisfied. But given that, according to invariantism, the regions of discourse concerning subjective matters exert cognitive command, the condition [b], which ensures that neither agent involved in such a dispute commits an error, is not satisfied.

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[7] Emma Borg, *Pursuing Meaning* (Oxford: Oxford University Press, 2012); Herman Cappelen and Ernest Lepore, *Insensitive Semantics. A Defense of Semantic Minimalism and Speech Act Pluralism* (Oxford: Blackwell, 2005).

[8] Jonathan Schaffer, "Perspective in Taste Predicates and Epistemic Modals," in *Epistemic Modality*, eds. Andy Egan and Brian Weatherson (Oxford: Oxford University Press, 2011), 183.

[9] Wright, "On Being in a Quandary," 53.

According to *meaning perspectivalism*, one of the two varieties of a perspectivalist semantic theory, the predicates of personal taste occurring in the sentences [3] and [4] mentioned above linguistically encode perspectival information, even though the information of this kind is not mentioned in the surface syntax of [3] and [4]. Insofar as the perspectival information is the value provided by the context to a parameter present at the level of the logical form of a sentence containing a predicate of personal taste, the perspectival information will enter in the propositions expressed by the utterances of bare sentences [3] and [4].[10] Therefore, the semantic content which the utterance of the sentence [3] expresses, in the above scenario, is the perspective-specific proposition [Ginger is tasty to Mihai], while the semantic content expressed, in the same scenario, by the utterance of [4] is the perspective-specific proposition [Ginger is not tasty to Irina].[11]

In meaning perspectivalism, only the condition [b] of the faultless disagreement, according to which neither agent involved in a dispute about matters of personal taste is at fault, is satisfied. Insofar as meaning perspectivalism considers that the sentences [3] and [4] are context-sensitive and that the semantic contents expressed by their utterances are both true and compatible, the agents who believe the perspective-specific propositions expressed by the utterances of [3] and [4] do not disagree, and, in consequence, the condition [a] of what a faultless disagreement has to be is not satisfied.

According to the second variety of perspectivalist semantics, *truth perspectivalism*, any utterance of a sentence from the region of discourse concerning matters of personal taste expresses a semantic content which has the property to be contextually invariable. Therefore, different utterances of the same sentence formed with a predicate of personal taste, like [3] or [4] above, express one and the same semantic content.[12] As in invariantism, the semantic contents expressed by the utterances of [3] and [4] are the perspective-neutral propositions [Ginger is tasty] and, respectively, [Ginger is not tasty].

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[10] Jason Stanley and Zoltán Gendler Szabó, "On Quantifier Domain Restriction," *Mind and Language* 15 (2000): 234.

[11] Schaffer, "Perspective in Taste Predicates and Epistemic Modals," 188.

[12] Max Kölbel, "How to Spell Out Genuine Relativism and How to Defend Indexical Relativism," *International Journal of Philosophical Studies* 15 (2007): 281-288; Max Kölbel, *Objectivity, Relativism and Context Dependence* (Hagen: Fernuniversität, 2011); Peter Lasersohn, "Context Dependence, Disagreement and Predicates of Personal Taste," *Linguistics and Philosophy* 28 (2005): 643-686; Tamina Stephenson, "Judge Dependence, Epistemic Modals, and Predicates of Personal Taste," *Linguistics and Philosophy* 30 (2007): 487-525.

Even though different utterances of a sentence in which occurs a predicate of personal taste express the same perspective-neutral proposition, their truth-values vary across contexts. In order to capture the variation in truth-values of the different utterances of one and the same sentence from a region of discourse concerning matters of personal taste, the proposal of truth perspectivalism is to introduce, in the circumstances with respect to which the utterances' semantic contents are evaluated, a new parameter, namely a parameter for perspective.[13] Insofar as the extension of a predicate of personal taste is considered, in truth perspectivalism, to vary according to the values of the parameter representing the perspective, this theory can explain the variation in truth-values of the different utterances of a sentence formed with a predicate of this kind, without having to appeal to meaning perspectivalism's idea according to which the variation in the perspective-specific propositions expressed by the sentence in different contexts of utterance, explains the variation in truth-values of its utterances.[14]

With regard to the disputes arising in regions of discourse concerning matters of personal taste, the proposal advocated by truth perspectivalists is that the disputes of this kind are best framed as faultless disagreements.[15] According to this theory, both conditions [a] and [b] of what has to be a faultless disagreement are met. Insofar as the perspective-neutral propositions expressed by the utterances of [3] and [4] above are contradictory propositions, and as the agents involved in the dispute believe, each of them, the propositions expressed by their utterances, the first condition of a faultless disagreement is satisfied. To the extent that the perspective-neutral proposition expressed by the utterance of [3] is true with respect to Mihai's perspective, while the perspective-neutral proposition expressed by the utterance of [4] is true with respect to Irina's perspective, neither speaker is at fault in asserting what he believes and, in consequence, the second condition of the faultless disagreement is satisfied.

In the following sections, I will discuss the *faultless* and the *disagreement* aspects of the disputes about subjective matters as they are conceived in truth perspectivalism. In this regard, I will dispute the coherence of the proposal advocated by truth perspectivalism, according to which the sentences occurring in regions of discourse concerning matters of personal taste give rise to faultless disagreements. Also, I will show that framing these disputes as truth perspectivalism proposed, as faultless disagreements, presents major disadvantages

[13] Borg, *Pursuing Meaning*, 23-24.

[14] Claudia Bianchi, "Contextualism," in *Philosophical Perspectives for Pragmatics*, eds. Marina Sbisà, Jan-Ola Östman and Jef Verschueren (Amsterdam: John Benjamins, 2011), 65.

[15] Kölbel, "Faultless Disagreement," 69-70.

for the truth perspectivalism's program concerning matters of personal taste, and that, with regard to the disputes like these, it cannot be both considered that they involve real disagreements and that they do not involve any error.

## 3. The *Disagreement* Aspect of Faultless Disagreement

In this section, I will present the solution proposed by Max Kölbel, one of the main proponents and defenders of the semantic program of truth perspectivalism concerning the discourse about matters of personal taste, to an argument whose conclusion establishes that no disagreement can be faultless. I will also show that this solution presents a major disadvantage for truth perspectivalism in the sense that it puts in doubt the plausibility of the claim, sustained by this theory, according to which the disputes arising in regions of discourse concerning subjective matters of personal taste constitute real doxastic disagreement.

According to truth perspectivalism, in the case in which two agents *i* and *j* are involved in a dispute about subjective matters and one of them utters a bare sentence with a predicate of personal taste having as a semantic content the perspective-neutral proposition [$\varphi$], while the interlocutor's utterance expresses the perspective-neutral proposition [$\sim\varphi$], *i* and *j* contradict each other.[16] Considering that, usually, the agents say what they believe, it follows that the contents of the beliefs of *i* and *j* will be the same as their utterances' semantic contents. Insofar as the agent *i* believes the perspective-neutral proposition [$\varphi$] expressed by his utterance, while the agent *j* believes the perspective-neutral proposition [$\sim\varphi$] which his utterance expresses, the condition [a], mentioned in the first section of the present paper, of what, according to truth perspectivalism, constitutes a faultless disagreement, is satisfied. With respect to their dispute arisen in a region of discourse concerning matters of personal taste, *i* and *j* are caught, according to truth perspectivalism, in a case of doxastic disagreement.[17] In cases like this one, the diagnosis which truth perspectivalists offer, concerning the correctness of the mental and linguistic representations of the agents involved in disputes about matters of personal taste, is that neither agent is cognitively blamable in the sense that neither of them is at fault. But this diagnosis, and therefore, the condition [b] of what, according to truth perspectivalism, is a faultless disagreement, is called into question by an argument formulated by means of classical logic whose conclusion establishes that, in the case in which one agent *i* believes the perspective-neutral proposition [$\varphi$] and the other agent *j*

[16] Lasersohn, "Context Dependence, Disagreement and Predicates of Personal Taste," 643-686.
[17] Kölbel, "Faultless Disagreement," 53-73.

believes the perspective-neutral proposition [~$\varphi$], one of them is cognitively at fault.

In what follows, I will present one version of this argument, more precisely the version which Max Kölbel has formulated.[18] The argument is based on some principles considered true in classical logic. To the extent that the semantic contents expressed by the utterances of sentences occurring in regions of discourse concerning subjective matters of personal taste are truth-evaluable, the *Equivalence Schema* and the two conditionals illustrated below can be applied to them:

[**ES**] $[\varphi] \leftrightarrow T[\varphi]$

[**ES**$_1$] $[\varphi] \rightarrow \sim T[\sim\varphi]$

[**ES**$_2$] $[\sim\varphi] \rightarrow \sim T[\varphi]$

Given that our mind and language have a representational function which is best captured in terms of the conditions which specify how the world has to be in order for the linguistic representations to be true and the mental representations to be correct, it follows that these representations are subject to a norm of truth. Accordingly, a norm of truth governing the beliefs of an agent can be defined across the following lines:

[**DOX**] An agent *i* should believe a proposition [$\varphi$] on an occasion O only if [$\varphi$] is true on O.

Based on the above principle, another principle which specifies what an error is in matters of doxastic representations, and which is relevant for the version formulated by Kölbel of the argument that no disagreement is faultless, can be defined as follows:[19]

[**ERROR**] An agent *i* makes a mistake if and only if the agent *i* believes something that is not true.

By means of the above mentioned principles and of classical logic, the argument whose conclusion establishes that no disagreement can be fault-free, can now be formulated:[20]

(1) The agent *i* believes the perspective-neutral proposition [$\varphi$]. Assumption

(2) The agent *j* believes the perspective-neutral proposition [~$\varphi$]. Assumption

[18] Kölbel, "Faultless Disagreement," 56.
[19] Kölbel, "Faultless Disagreement," 56.
[20] Kölbel, "Faultless Disagreement," 56.

(3) [$\varphi$]

Assumption

(4) $\sim T[\sim\varphi]$

3, [**ES1**]

(5) The agent *j* makes a mistake.

2, 4, [**ERROR**]

(6) [$\sim\varphi$]

Assumption

(7) $\sim T[\varphi]$

6, [**ES2**]

(8) The agent *i* makes a mistake.

1, 6, [**ERROR**]

(9) Either the agent *i* or the agent *j* makes a mistake.

3-8, Dilemma

If the perspective-neutral proposition [$\varphi$] is true, then, applying the first conditional derived from the equivalence scheme, it follows that the agent *j* believes a false perspective-neutral proposition, which, according to the principle of error, constitutes a mistake. In the same vein, if the perspective-neutral proposition [$\sim\varphi$] is true, then, applying the second conditional derived from the equivalence scheme, it follows that the agent *i* believes a false perspective-neutral proposition, which means, according to the principle of error, that he makes a mistake. The conclusion of the above argument establishes that, in the case in which one agent *i* believes the perspective-neutral proposition [$\varphi$] and the other agent *j* believes the perspective-neutral proposition [$\sim\varphi$], one of them is cognitively at fault. This conclusion directly targets the condition [b] which a dispute concerning matters of personal taste must satisfy in order to constitute what, according to truth perspectivalism, is a faultless doxastic disagreement. According to this condition, the agents involved in a dispute arisen in a region of discourse about subjective matters of taste are cognitively blameless in the sense that they do not commit any error. Insofar as the above argument ensures that, no matter the matters which a dispute concerns, it is not possible for both agents involved in the dispute to be right while believing contradictory perspective-neutral propositions, the claim advocated in truth perspectivalism, according to which the disputes concerning matters of personal taste must be understood as instances of faultless disagreement, is not correct.

The strategy to which truth perspectivalists have appealed in order to block the conclusion of the above argument, and, in consequence, to save the second condition of the faultless disagreement, was to relativize to a new parameter the truth-values of the perspective-neutral propositions expressed by the utterances of

bare sentences formed with predicates of personal taste.[21] According to Kölbel, the new parameter which has to be added to the list of parameters which already included, in the Kaplanian semantic framework, a parameter for a possible world and one for a time, is a parameter representing the perspective of the agent.[22] To the extent that the truth-value of a perspective-neutral proposition expressed by an agent who utters, in a context, a bare sentence formed with predicates of personal taste, is determined against the values contextually provided to the parameter for the agent's perspective, this parameter is alethically relevant. Insofar as there are different perspectives with respect to which are evaluated the perspective-neutral propositions expressed by two disputing agents which exploit, in the communication process, regions of discourse concerning matters of personal taste, the claim advocated in truth perspectivalism, according to which neither agent is cognitively blamable is rescued. In conformity with this conceptual maneuver, Kölbel has offered a new principle specifying what constitutes an error in matters of doxastic representations, a principle which can be formulated across the following lines:[23]

> [**ERROR**$_{TP}$] An agent *i* makes a mistake if and only if the agent *i* believes something that is not true within his perspective.

If the things are understood in this way, we can ask ourselves what are the consequences of this maneuver for the first condition of the definition of what a faultless disagreement is. According to this condition, in the case in which two agents *i* and *j* are involved in a dispute arising in a region of discourse concerning matters of personal taste, and *i* utters, in conformity with his belief, a sentence whose semantic content is the perspective-neutral proposition [$\varphi$], while *j* utters, in conformity with his belief, a sentence whose semantic content is the perspective-neutral proposition [$\sim\varphi$], *i* and *j* doxastically disagree and contradict each other.[24] But is that so?

In what follows, I will argue that, once truth perspectivalism appeals to the strategy of making the parameter for perspective alethically relevant, the first condition of what, according to this theory, is a faultless doxastic disagreement, cannot be satisfied and, in consequence, the coherence of the semantic program which truth perspectivalism advocates, with regard to sentences from regions of

[21] Kölbel, "Faultless Disagreement," 53-73; Lasersohn, "Context Dependence, Disagreement and Predicates of Personal Taste," 643-686.
[22] Kölbel, "Faultless Disagreement," 70-71.
[23] Kölbel, "Faultless Disagreement," 70.
[24] Kölbel, "Faultless Disagreement," 53-73; Lasersohn, "Context Dependence, Disagreement and Predicates of Personal Taste," 643-686.

discourse about matters of personal taste, must be put in doubt. In order to show that the disputes about subjective matters of personal taste, as they are framed in truth perspectivalism, cannot constitute doxastic disagreements, I will consider, in what follows, some scenarios in which the conditions for a real disagreement are not met because the sentences exemplified there only apparently contradict each other.

Suppose that, in a context *c*, Mihai utters the sentence [5] and Irina utters the sentence [6]:

[5] I'm happy.

[6] I'm not happy.

Any sentence containing an indexical element has the property of being context-sensitive. This means that, in order to determine what is the semantic content which an utterance of a sentence formed with an indexical expresses in a particular context, the appeal to context is mandatory from a semantic viewpoint. The indexical element occurring in the surface syntax of both sentences [5] and [6] has different semantic values. For this reason, the semantic contributions of the indexical to what the utterances of [5] and [6] express, will not be the same. In this case, the semantic content of the sentence uttered by Mihai in *c* is the proposition [Mihai is happy], while the semantic content of the sentence uttered by Irina in the same context is the proposition [Irina is not happy]. It is clear from this example that, even though a negation operator occurs in the surface syntax of the sentence uttered by Irina, the sentences [5] and [6], as they are uttered in *c*, can be simultaneously true.

Consider the following scenario: Irina lives in London and Mihai, her best friend, calls her from Paris. In the midst of their conversation, having the intention to talk about the weather in his location, Mihai utters the sentence

[7] It's raining.

while Irina, having the intention to report how the weather is in her location, utters the sentence

[8] It's not raining.

In this scenario, uttering the sentences [7] and [8], Mihai and Irina do not contradict each other. As what settles the value of the location parameter relevant for the truth-value of the utterance [7] is the place in which Mihai is located, the sentence [7] uttered by Mihai is true because, according to the above scenario, the value of the location parameter is settled on his location, more precisely Paris. Likewise, as the place in which Irina is located settles the value of the location

parameter relevant for the truth-value of her utterance, [8] is also true because, this time, the value of the location parameter is settled on London. Assuming that the truth-values of both utterances are established in relation to a location parameter present in the circumstances in which the utterances are evaluated, it is obvious that [7] and [8] are simultaneously true with respect to different values of the very same parameter.[25]

Consider now a different scenario in which Mihai inhabits a possible world $w_1$, while Irina inhabits another possible world $w_2$. Consider also that in the possible world $w_2$ the water has the property of being colored and that the possible world $w_1$ resembles the actual world we live in in that the water that can be found there is, like our water, colorless. Asked to provide a true report about the properties of water, Mihai utters the sentence [9], while Irina utters the sentence [10]:

[9] The water has no color.

[10] The water is colored.

Considering that the truth-value of any of the above utterances is established in relation to a parameter representing a possible world, it is obvious that the utterances [9] and [10] are simultaneously true with respect to the values which the present scenario ascribes to the parameter. Insofar as the possible world $w_1$ constitutes the value of the parameter present in the circumstance in which the utterance [9] is evaluated, $w_1$ is the key ingredient with respect to which the truth-value of [9] is determined. In the same vein, the truth-value of the utterance [10] is established with regard to the value that the parameter representing the possible world takes, a value which, this time, is settled on the possible world $w_2$. As the utterance [9] is true with respect to the possible world $w_1$ and the utterance [10] is true with respect to the possible world $w_2$, the above mentioned utterances do not contradict each other.

All of the scenarios described above display one and the same pattern. The moral that can be drawn from these cases is that when the truth-values of the semantic contents expressed by the utterances of a pair of sentences, from which one sentence represents the negation of the other, are determined in relation to different values of the parameters considered relevant for determining the utterances' truth-values, no contradiction will appear. One condition that has to be satisfied in order for a pair of sentences to constitute a contradiction is that the

[25] A similar argument may also be found in Michael Rieppel, "Stoic Disagreement and Belief Retention," *Pacific Philosophical Quarterly* 92 (2011): 246; Delia Belleri and Michele Palmira, "Towards a Unified Notion of Disagreement," *Grazer Philosophische Studien* 88 (2013): 143.

negation which occurs in the syntax of a sentence has to operate on a content which is identical to the content expressed by the opposite sentence from the pair in question. Beyond the requirement of a common content, another condition that has to be satisfied, in order for a relation of contradiction to characterize a pair of sentences, is that the value of the index's parameter relevant for determining the truth-value of the utterance of a pair's sentence must be identical to the value of the very same parameter with respect to which the utterance of the pair's second sentence is evaluated.

The above remarks turn out to be relevant for establishing whether the alleged cases of faultless disagreement concerning sentences with predicates of personal taste are indeed disagreement cases. Consider a scenario in which Mihai believes that ginger is tasty, Irina believes that it is not, and, in conformity with their beliefs, they utter, in the context of a dispute concerning matters of personal taste, the following sentences:

[3] Ginger is tasty.

[4] Ginger is not tasty.

Considering this pair of sentences, can we really say that Mihai and Irina disagree each other? According to truth perspectivalism, the sentence [3] uttered by Mihai is true with respect to his tastes and false when it is evaluated with respect to Irina's beliefs and tastes. In this theory, the variation in truth-values of the different utterances of a bare sentence containing a predicate of personal taste, like [3] above, is not due to a variation in the contents expressed by uttering the sentence [3] in different contexts. According to this theory, any utterance of the [3] expresses, in all contexts, the same perspective-neutral proposition [Ginger is tasty]. The variation in truth-values of the different utterances of [3] is explained by means of the variation in the circumstances with respect to which the semantic content of the sentence [3] is evaluated.[26] In this sense, the truth perspectivalist proposal was, as we have seen above, to extend the list of the parameters relevant for determining the truth-values of utterances with a parameter which captures the perspective of an agent. Accordingly, all the utterances of bare sentences containing predicates of personal taste, like [3] and [4] above, have to be evaluated with respect to circumstances which include, besides a possible world parameter and a time parameter, a parameter representing the agent's perspective.[27] The decision to allow a parameter responsible for the agent's perspective is methodologically motivated by the fact that even though the values of the possible

[26] Bianchi, "Contextualism," 65.

[27] Borg, *Pursuing Meaning*, 24; Kölbel, "Faultless Disagreement," 70-71.

world and time parameters are held to be constant across contexts, two utterances of a bare sentence formed with a predicate of personal taste may have different truth-values with respect to the different values contextually assigned to the parameter representing the agent's perspective.[28] And this, according to truth perspectivalism, is exactly what happens concerning the two utterances of bare sentences formed with a predicate of personal taste exemplified above.

The diagnosis proposed by truth perspectivalism is that the perspective-neutral proposition [Ginger is tasty] expressed by the utterance of the sentence [3] is true, with respect to Mihai's perspective, and false when the very same semantic content is evaluated with respect to Irina's perspective. Likewise, the perspective-neutral proposition [Ginger is not tasty] expressed by the utterance of the sentence [4] will be true with respect to Irina's perspective and false when the perspective characterizing the evaluation of the ginger's taste performed by Mihai is taken into consideration. According to truth perspectivalism, insofar as the perspective-neutral propositions expressed by the utterances of the sentences [3] and [4] are contradictory propositions, Mihai and Irina doxastically disagree with each other about the taste of the ginger. In the same vein, insofar as the perspective-neutral proposition expressed by the utterance of [3] is true with respect to Mihai's perspective, while the perspective-neutral proposition expressed by the utterance of [4] is true with respect to Irina's, Mihai and Irina are both right and, therefore, their disagreement is faultless.

The dispute concerning matters of personal taste in which Mihai and Irina are involved, is framed, in truth perspectivalism, in terms of their different perspectives about one and the same thing, more precisely the taste of ginger. But giving credit to the idea that the perspective-neutral proposition [Ginger is tasty] expressed by the utterance of [3] is true with respect to Mihai's perspective, while the perspective-neutral proposition [Ginger is not tasty] expressed by the utterance of [4] is true with respect to Irina's perspective, can we truthfully say that we have, in this case, a real doxastic disagreement?

According to classical logic, the principle of non-contradiction ensures that, with respect to all perspectives, it is not the case that [Ginger is tasty] and [Ginger is not tasty] are both true. Therefore, the principle of non-contradiction entails that there is no perspective with respect to which both [Ginger is tasty] and [Ginger is not tasty] are true. In order to have a contradiction, according to the demands of classical logic, there must be a perspective with respect to which [Ginger is tasty] and [Ginger is not tasty] are both true.

[28] Bianchi, “Contextualism,” 66.

In order for Mihai and Irina to doxastically disagree, they have to contradict each other, which means that the value of the perspective parameter, with respect to which it is established that the perspective-neutral propositions [Ginger is tasty] and [Ginger is not tasty] are both true, must be constant across the dispute between Mihai and Irina. This means that the value of the perspective parameter relevant for determining the truth-value of the utterance of [3] must be identical to the value of the very same parameter with respect to which Irina's utterance of [4] is evaluated. To the extent that the value of the alethically relevant parameter is not the same, the agents do not contradict each other, and therefore, there is no real disagreement between them.

Let us see what happens in the above case. We know from the above scenario that the perspective-neutral proposition [Ginger is tasty] is true with respect to Mihai's perspective and false with respect to Irina's perspective. Likewise, the perspective-neutral proposition [Ginger is not tasty] is true with respect to Irina's perspective and false with respect to Mihai's perspective. In order for a contradiction between Irina and Mihai to occur, the perspective-neutral proposition [Ginger is tasty] must be true and false with respect to a *single* perspective, that of Mihai or that of Irina. Insofar as the perspective-neutral proposition [Ginger is tasty] has different truth-values only with respect to two *different* perspectives, we cannot say that what we have, in this case, is a contradiction. Similarly, to the extent that the perspective-neutral proposition [Ginger is not tasty] is not both true and false within a *single* perspective, the agents do not contradict each other. Given that, in the above example, the values of the parameter representing the perspective are different, the perspective-neutral propositions expressed by the utterances of [3] and [4] do not concern the same circumstance and, therefore, they do not constitute an example of disagreement.

As the remarks above make clear, in the case in which the values of the alethically relevant parameter are different, the agents involved in a dispute arising in regions of discourse concerning matters of personal taste, do not contradict each other, and therefore, there is no real disagreement between them. As things now stand, the alternatives to which truth perspectivalists can appeal, in order to defend the claim that the agents disagree when they are involved in a dispute about subjective matters of personal taste, are either to sustain that the disagreement holds with respect to *all* perspectives, or to sustain that it holds with respect to a *single* perspective. I am assuming that the class of choices which truth perspectivalist can make in this sense, is exhausted by these two options. But, as I will argue below, neither option is satisfactory for truth perspectivalism and

therefore, both should be dismissed. In order to show that none of these two alternatives is a satisfactory way out for truth perspectivalism, a Kripke model for a modal language with perspectival operators can be conceived across the lines indicated by Steven Hales.[29] In conformity with this proposal, the perspectival operators ■ and ♦ will have the same semantic behavior as their alethic counterparts and the frame of the model, more precisely, its ontology, will consist in a set *P* of perspectives and a relation of accessibility which holds between the elements of *P*, an equivalence relation understood as *compatibility* of perspectives. Given that, according to truth perspectivalism, a perspective-neutral proposition expressed by an utterance of a bare sentence formed with a predicate of personal taste, has a truth-value only with respect to a perspective, I will deliberately ignore, in what follows, the parameter for possible worlds and, consequently, the alethic modalities. Accordingly, I will use, in the following proofs, only perspectival operators.

According to truth perspectivalism, there is a contradiction between the perspective-neutral propositions expressed by the sentences [3] and [4] uttered by Mihai and Irina. To the extent that they believe contradictory propositions, Mihai and Irina disagree. If it is considered that the fact of their disagreement holds with respect to all perspectives, according to the first alternative to which truth perspectivalism would appeal, in order to defend the first condition of the faultless disagreement, then it will be true, with respect to all the perspectives compatible with the perspective advocated by a truth perspectivalist, that a contradiction between Mihai and Irina takes place. In this case, one of the effects is that truth perspectivalism can no longer keep separated the regions of discourse concerning subjective matters of personal taste and the regions of discourse concerning objective matters of fact. Accordingly, if the fact that Mihai and Irina disagree holds with respect to all perspectives, one of them must be at fault and, in consequence, the *faultless* aspect of their dispute concerning the matters of their personal tastes is completely compromised.[30] Even though these effects are left aside, the logic supports the opposite claim, according to which it is not the case that, with respect to all the perspectives compatible with the perspective advocated by truth perspectivalists, a contradiction holds. Considering that $\varphi$ and $\sim\varphi$ are two formulae from the above mentioned modal language with perspectival

[29] Steven D. Hales, *Relativism and the Foundations of Philosophy* (Cambridge: MIT Press, 2006), 143-145.

[30] Sven Rosenkranz, "Frege, Relativism and Faultless Disagreement," in *Relative Truth*, eds. Manuel Garcia-Carpintero and Max Kölbel (Oxford: Oxford University Press, 2008), 230-231; Torfinn Thomesen Huvenes, "Disagreement without Error," *Erkenntnis* 79 (2014): 149.

operators which correspond to the sentences [3] and [4] uttered by Mihai and Irina, we have:

| | |
|---|---|
| (1) $\varphi \rightarrow \blacklozenge \varphi$ | $T$– Theorem |
| (2) $\sim \varphi \rightarrow \blacklozenge \sim \varphi$ | 1, Substitution $\varphi/\sim\varphi$ |
| (3) $\varphi \vee \sim \varphi$ | $L_p$– Theorem |
| (4) $(\varphi \rightarrow \blacklozenge \varphi) \wedge (\sim \varphi \rightarrow \blacklozenge \sim \varphi) \wedge (\varphi \vee \sim \varphi)$ | 1, 2, 3, $L_p$– Theorem |
| (5) $((\varphi \rightarrow \psi) \wedge (\sigma \rightarrow \tau) \wedge (\varphi \vee \sigma)) \rightarrow (\psi \vee \tau)$ | Constructive Dilemma |
| (6) $((\varphi \rightarrow \blacklozenge \varphi) \wedge (\sim \varphi \rightarrow \blacklozenge \sim \varphi) \wedge (\varphi \vee \sim \varphi)) \rightarrow (\blacklozenge \varphi \vee \blacklozenge \sim \varphi)$ | 5, Substitution $\psi/\blacklozenge \varphi$, $\sigma/\sim\varphi$, $\tau/\blacklozenge \sim\varphi$ |
| (7) $\blacklozenge \varphi \vee \blacklozenge \sim \varphi$ | 4, 6, Modus Ponens |
| (8) $(\varphi \vee \psi) \rightarrow \sim(\sim \varphi \wedge \sim \psi)$ | $L_p$– Theorem |
| (9) $(\blacklozenge \varphi \vee \blacklozenge \sim \varphi) \rightarrow \sim(\sim \blacklozenge \varphi \wedge \sim \blacklozenge \sim \varphi)$ | 8, Substitution $\varphi/\blacklozenge \varphi$, $\psi/\blacklozenge \sim\varphi$ |
| (10) $\sim(\sim \blacklozenge \varphi \wedge \sim \blacklozenge \sim \varphi)$ | 7, 9, Modus Ponens |
| (11) $\sim(\blacksquare \sim \varphi \wedge \blacksquare \varphi)$ | 10, Df. $\blacksquare$ |
| (12) $\sim(\varphi \wedge \psi) \rightarrow (\varphi \rightarrow \sim \psi)$ | $L_p$– Theorem |
| (13) $\sim(\blacksquare \sim \varphi \wedge \blacksquare \varphi) \rightarrow (\blacksquare \sim \varphi \rightarrow \sim \blacksquare \varphi)$ | 12, Substitution $\varphi/\blacksquare \sim \varphi$, $\psi/\blacksquare \varphi$ |
| (14) $\blacksquare \sim \varphi \rightarrow \sim \blacksquare \varphi$ | 11, 13, Modus Ponens |
| (15) $\blacksquare \sim (\varphi \wedge \sim \varphi) \rightarrow \sim \blacksquare (\varphi \wedge \sim \varphi)$ | 14, Substitution $\varphi/(\varphi \wedge \sim \varphi)$ |
| (16) $\sim(\varphi \wedge \sim \varphi)$ | $L_p$– Theorem |
| (17) $\blacksquare \sim (\varphi \wedge \sim \varphi)$ | 16, Necessitation |
| (18) $\sim \blacksquare (\varphi \wedge \sim \varphi)$ | 15, 17, Modus Ponens |
| (19) $\sim \blacksquare \bot$ | 18, Df. $\bot$ |

The remaining alternative for truth perspectivalists would be to consider that the fact that Mihai and Irina disagree holds with respect to a particular perspective. If this were the case, then it would be possible to find a perspective

compatible with the perspective advocated by a truth perspectivalist with respect to which Mihai and Irina contradict each other in the above scenario. But this conflicts with our modal intuition supported by the following proof and, in consequence, should be rejected:

| | |
|---|---|
| (1) $\sim(\varphi \wedge \sim\varphi)$ | $L_p$ – Theorem |
| (2) $\blacksquare \sim(\varphi \wedge \sim\varphi)$ | 1, Necessitation |
| (3) $\sim\blacklozenge(\varphi \wedge \sim\varphi)$ | 2, Df. $\blacklozenge$ |
| (4) $\sim\blacklozenge\bot$ | 3, Df. $\bot$ |

What the last line of the above reasoning shows is that there is no perspective, compatible with the perspective advocated by truth perspectivalists, with respect to which a contradiction holds. But, given that the compatibility relation between perspectives is reflexive, a truth perspectivalist has access to his perspective, more precisely its perspective is compatible with herself. Given that there is no perspective, compatible with the perspective advocated by truth perspectivalists, with respect to which a contradiction between Mihai and Irina holds, and that, by the reflexivity property of the relation of compatibility, a truth perspectivalist has access to his perspective, it follows that, with respect to his perspective, there is no disagreement between Mihai and Irina, a result which truth perspectivalism cannot happily welcome.

All the above examples show that, if the disputes arising in regions of discourse concerning matters of personal taste are construed in a truth perspectivalist fashion, as Kölbel has indicated, they do not represent authentic examples of doxastic disagreements. The take-home lesson is that, once truth perspectivalism appeals to the strategy of making the parameter for perspective alethically relevant, the first condition of what, according to this theory, is a faultless doxastic disagreement, cannot be satisfied and, in consequence, the coherence of the semantic program which truth perspectivalism advocates, with regard to sentences from regions of discourse about matters of personal taste, must be put in doubt.

## 4. The *Faultless* Aspect of Faultless Disagreement

If the *disagreement* aspect advocated by truth perspectivalism with regard to different evaluations made by agents involved in disputes arising in regions of discourse about matters of personal taste cannot be secured, as the previous section

showed, what can be said now about the correctness of their evaluations? In this sense, as we have already seen in the second section of the present paper, truth perspectivalists defend the idea that the evaluations offered by agents involved in disputes about matters of personal taste are subjective and, consequently, they are fault-free. According to truth perspectivalism, the scenario above in which Mihai believes that ginger is tasty while Irina believes that it is not, make obvious that neither Mihai nor Irina can be said to be at fault in believing what they do. Therefore, they are both cognitively blameless and no error can occur as far as subjectively different perspectives are concerned. Granting for the moment the truth perspectivalist's idea that the scenario above, in which Mihai utters the sentence [3] and Irina utters the sentence [4], constitutes a standard instance of a doxastic disagreement, can the *faultless* aspect of the agents's disagreement be sustained? More precisely, it is safe to infer from the data according to which the perspective-neutral proposition expressed by the utterance of [3] is true with respect to Mihai's perspective and false with respect to Irina's perspective that the alleged disagreement between Mihai and Irina is a faultless one? The answer to this question is, as Mark Richard rightly observed, a definite *no*.[31] Before presenting Richard's argument that, on the basis of the fact that the truth-values of the perspective-neutral propositions involved in a case of dispute are determined against different values of the perspective parameter, we cannot draw the conclusion that the dispute in question is faultless, it must be said that truth perspectivalists can make use of a disquotational predicate of truth in their semantics. As Cappelen and Hawthorne have shown, truth perspectivalism allows at the object-language level a disquotational operator *It is true that* that conforms to the following semantic definition:[32]

> [**DQ**] The content *It is true that* $\varphi$ is true at an $n$-tuple of parameters if and only if the content $\varphi$ is true at that $n$-tuple.

The $n$-tuple of parameters in relation to which the truth-values of the utterances of bare sentences formed with predicates of personal taste are determined, must include, as we have seen in the previous section, beyond the parameters for possible worlds, for times and perhaps for other relevant things, a parameter for perspective. By allowing the introduction into the object-language of a disquotational truth operator and extending the list of parameters with a parameter representing the agent's perspective, truth perspectivalists are

[31] Mark Richard, *When Truth Gives Out* (Oxford: Oxford University Press, 2008), 132.

[32] Herman Cappelen and John Hawthorne, *Relativism and Monadic Truth* (Oxford: Oxford University Press, 2009), 13.

committed to sustain that, from a particular perspective, the content φ is semantically equivalent with the content *it is true that φ*. Or, as Mark Richard would put it, "within a perspective, truth is 'disquotational.'"[33]

As things stand now, the argument offered by Mark Richard, in favour of the idea that the second condition of the faultless disagreement, which ensures that a dispute arising in regions of discourse concerning matters of personal taste is faultless, is not met, can now be formulated.[34] Consider that *φ* is a bare sentence formed with a predicate of personal taste and that an agent *i* validly judges that φ is the case if the semantic content expressed by his utterance of the sentence *φ*, that is the perspective-neutral proposition [*φ*], is true with respect to the agent's perspective. According to truth perspectivalism, in the case in which another agent *j* doxastically disagrees with the agent *i* about the subjective matters expressed by *φ*, *j* validly judges that it is not the case that φ. In this case, the perspective-neutral proposition [~*φ*] is true from the perspective adopted by *j*. If the agent *i* validly judges that φ, granting that the truth is disquotational from a perspective, it will be correct to say that the agent *i* validly judges that the utterance of

[11] It is true that φ.

is true. Therefore, the perspective-neutral proposition [ *T*(*φ*)] will be true with respect to the perspective from which the agent *i* regards the subjective matters expressed by *φ*. In the same vein, it will also be correct to say that the agent *j* validly judges that the utterance of

[12] It is not true that φ.

is true and that the perspective-neutral proposition [~*T*(*φ*)] is true with respect to his perspective. Insofar as the proposition [ *T*(*φ*)] and the proposition [~*T*(~*φ*)] are equivalent, it will be correct to say about *i* that he validly judges that the utterance of

[13] It is false that not-φ.

is true. But an agent who validly judges the utterance of [13] to be true, will be committed to see anyone who believes that the utterance of [12] is true as making an error. As the agent *j*, who doxastically disagrees, according to truth perspectivalism, with the agent *i*, believes that the utterance of [12] is true, *i* will be justified to judge that *j* is at fault. Insofar as the same pattern of inference can

[33] Richard, *When Truth Gives Out*, 132.

[34] Paul Boghossian, "Three Kinds of Relativism," in *A Companion to Relativism*, ed. Steven D. Hales (Oxford: Wiley-Blackwell, 2011), 62; Richard, *When Truth Gives Out*, 132.

be replicated with regard to what the agent *j* validly judges, neither agent involved in the alleged doxastic disagreement concerning matters of personal taste cannot regard his interlocutor as not committing an error. With respect to the above remarks, Mark Richard correctly observed that

> This line of reasoning is sound no matter what the object of dispute. So it is just wrong to think that if my view is valid – true relative to my perspective – and your contradictory view is valid – true, that is, relative to yours – then our disagreement is 'faultless.' [35]

What the argument offered by Mark Richard highlights is that, granting the truth of the premise according to which the truth-values of the perspective-neutral propositions involved in a dispute about subjective matters of personal taste are determined against different values of the perspective parameter, the conclusion that the dispute in question is faultless cannot be inferred. Therefore, the disputes arising in regions of discourse concerning matters of personal taste are not fault-free and the second condition of the faultless disagreement advocated by truth perspectivalism, according to which the agents involved in disputes about subjective matters are cognitively blameless in believing what they do, cannot be sustained.

To this line of thought, a defender of truth perspectivalism's proposal, that neither agent involved in a doxastic disagreement concerning matters of personal taste commits an error, can reply, as Boghossian noted, that the norms governing the correctness of beliefs and other cognitive attitudes which operate in the argument put forward by Richard cannot be those offered by invariantists.[36] In this sense, as we have seen in the previous section, Max Kölbel has already offered a principle specifying what constitutes an error in matters of doxastic representations, a principle which was formulated as follows:[37]

> [**ERROR**$_{TP}$] An agent *i* makes a mistake if and only if the agent *i* believes something that is not true within his perspective.

Based on this principle, the maneuver of response of truth perspectivalists would consist in adopting, to the extent that matters of personal taste and not objective matters of fact are concerned, a norm for beliefs across the following lines:[38]

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[35] Richard, *When Truth Gives Out*, 132.
[36] Boghossian, "Three Kinds of Relativism," 65.
[37] Kölbel, "Faultless Disagreement," 70.
[38] Cappelen and Hawthorne, *Relativism and Monadic Truth*, 13.

[**DOX**$_{TP}$] An agent *i* should believe a proposition [$\varphi$] on an occasion O only if on O, [$\varphi$] is true from the perspective of *i*.

But is the above principle which specifies what an error is in matters of doxastic representations adequate with regard to the psychology of agents involved in disputes arising in regions of discourse concerning matters of personal taste? The already mentioned definition of error entails that insofar as the agents do not believe things that are false with respect to their perspectives, they are without fault and, consequently, they are cognitively blameless. But this way of defining what an error is in matters concerning personal tastes is psychologically too strong and therefore implausible. It is like saying that life is not worth living because we do not have wings to fly. What truth perspectivalism accomplishes with this definition of error is that it raises the standards of error such high that no agent involved in a dispute about subjective matters can touch them and, consequently, no disputing agent can make such an error. And if this kind of error does not occur, the *faultless* aspect of the doxastic disagreement defended by truth perspectivalism is secured. But how, it can be asked, can an error of this kind occur? According to the above definition of error, when it is the case that an agent *i* believes the perspective-neutral proposition [~$\varphi$] and the proposition [$\varphi$] is true with respect to his perspective, the agent *i* is at fault. But, given the fact that a sentence $\varphi$ concerns nonfactual matters involving the personal tastes of the agent *i*, how can it be possible that *i* believes the perspective-neutral proposition [~$\varphi$] while the proposition [$\varphi$] is true with respect to his perspective? If the proposition [Ginger is tasty] is true with respect to the perspective of *i*, how can *i* believe that ginger is not tasty? In matters concerning the personal tastes of an agent *i*, believing a proposition [$\varphi$] and accepting the fact that [$\varphi$] is true within the perspective of *i*, are not separated. In this sense, it cannot be objectively established that something is true with respect to the perspective of *i* without taking into consideration *i*'s perspective. In cases like this one, the perspective of *i* is the only relevant criterion we dispose of in order to establish that something is true with respect to his perspective. If a proposition [$\varphi$] is true with respect to the perspective of *i* and the subject matter of the sentence $\varphi$ uttered in a context by *i* concerns matters of his personal taste, granting that *i* knows, through introspection, what his tastes are, he comes to know [$\varphi$]. After all, the agent *i* is the only *expert* as far as his tastes are concerned! And if only *i* know best the matters of his personal taste, then *i* will know [$\varphi$] and therefore, he will believe [$\varphi$]. Given now the fact that *i* believes [$\varphi$] and [$\varphi$] is true with respect to his perspective, no error can occur.

In the other sense, if the agent *i* believes the perspective-neutral proposition [~$\varphi$], he could not believe the proposition [~$\varphi$] based on an objective criterion external to his perspective. In order to establish that *i* commits an error in the case in which *i* believes the proposition [Ginger is not tasty] while the proposition [Ginger is tasty] is true with respect to his perspective, it must be established that his belief is separated from what is true within his perspective. But given that, concerning matters of his personal tastes, his beliefs are grounded on his perspective, the agent *i* will believe that ginger is not tasty on the basis of his perspective about ginger. And if *i* believes the perspective-neutral proposition [Ginger is not tasty] based on his perspective about the taste of ginger, then the proposition [Ginger is not tasty] will be true with respect to *i*'s perspective while the proposition [Ginger is tasty] will be false within the very same perspective. In this case too, what *i* believes will be identical to what is true from his perspective.

The moral that can be drawn from the above considerations is that the definition of error at which truth perspectivalists appeal in order to save the *faultless* aspect of what they pretend to be a doxastic disagreement has no psychological plausibility. Therefore, it cannot be conceded to truth perspectivalists that the above definition of error is operative in the cases involving disputes about matters of personal taste which they interpret to be instances of doxastic disagreement. As things stand now, the result cannot be favorable to truth perspectivalism. Consider that for an agent *i* involved in a dispute concerning subjective matters of personal taste there are only two possibilities: he is at fault or he does not commit any error, *tertium non datur*. Consider firstly that the agent *i* is at fault. According to the definition of error to which truth perspectivalists appeal, the perspective-neutral proposition [$\varphi$] is true with respect to the perspective of *i*, while *i* believes the perspective-neutral proposition [~$\varphi$] which his utterance of a bare sentence containing a predicate of personal taste expresses. Suppose that another agent *j*, involved in a dispute about matters of personal taste with *i*, commits no mistake. In this case, *j* believes the perspective-neutral proposition [~$\varphi$] and the very same proposition expressed by his utterance is true with respect to his perspective. Insofar as *j* believes the same thing as *i* and *i* commits an error, truth perspectivalists cannot secure neither the *faultless* aspect of the dispute between *i* and *j*, nor what they pretend to be its *disagreement* aspect.

Suppose now that the agent *i* commits the same mistake as above, while the agent *j* is cognitively blameless with respect to the perspective-neutral proposition [$\varphi$]. In this case, *j* believes the very same thing which is true with respect to his perspective. As the *disagreement* aspect of the dispute about matters of taste is

framed, in truth perspectivalism, in doxastic terms, and as the agent *i* believes the proposition [~$\varphi$] expressed by his utterance, while the agent *j* believes, in this case, the proposition [$\varphi$] which his utterance expresses, it follows, according to truth perspectivalism, that they disagree. But as far as the perspective-neutral proposition [$\varphi$] is true with respect to the perspective of the agent *i*, the *faultless* aspect of the alleged disagreement about personal tastes is lost in this case. Also, the cases in which both agents involved in a dispute about matters of personal taste are at fault, are of no help for truth perspectivalists even though, in some of these cases, one agent will believe and express by his utterance the perspective-neutral proposition [$\varphi$], while the other will believe and linguistically express, in conformity with his belief, the opposite perspective-neutral proposition [~$\varphi$].

The remaining cases that are of interest for truth perspectivalists are cases in which one agent *i* involved in a dispute about matters of personal taste believes [$\varphi$], the other agent *j* believes [~$\varphi$], both of them utter bare sentences formed with predicates of personal taste expressing what they believe, and what each agent believes is true with respect to his own perspective. These are the cases in which, according to truth perspectivalism, faultless doxastic disagreements will occur. But, as I have already shown in the previous section, in cases like these, given that the values of the alethically relevant parameter representing the perspective are different, the perspective-neutral propositions believed by the agents *i* and *j* and expressed by their utterances do not concern the same circumstance, and therefore, these cases do not constitute instances of doxastic disagreements.

What all alternative cases presented above emphasize is that, to the extent that the disputes occurring in regions of discourse concerning matters of personal taste are conceived in a truth perspectivalist manner, more precisely, as doxastic disagreements which are fault-free, one cannot consider both that these disputes involve real disagreements and that they do not involve any cognitive or factual error.

## 5. Conclusion

All of the above remarks are in a perfect concordance with what other researchers have found with regard to the proposal advocated by truth perspectivalism, according to which the disputes arising in regions of discourse concerning subjective matters of personal taste constitute faultless doxastic disagreements.[39] In

[39] Cappelen and Hawthorne, *Relativism and Monadic Truth*; Huvenes, "Disagreement without Error," 143-154; Rosenkranz, "Frege, Relativism and Faultless Disagreement," 225-237; Isidora Stojanovic, "Talking about Taste: Disagreement, Implicit Arguments, and Relative Truth," *Linguistics and Philosophy* 30 (2007): 691-706.

this sense, with respect to pairs of perspective-neutral propositions expressed in contexts by utterances of opposed sentences with predicates of personal taste, I showed that, when the values of the alethically relevant parameter representing the perspective are different, the perspective-neutral propositions do not concern the same circumstances and, therefore, they do not constitute real instances of disagreement. Also, I showed that the alternative according to which the alleged disagreements of agents involved in disputes arising in regions of discourse concerning matters of personal taste hold with respect to all perspectives, is not a satisfactory way out for truth perspectivalism. In order to ensure that the disputes about subjective matters are fault-free and, accordingly, that the distinction between regions of discourse concerning subjective matters of personal taste and regions of discourse concerning objective matters of fact is maintained, truth perspectivalism defined what an error is, in matters of personal taste, in a way which, as I have already shown, is psychologically too strong and therefore implausible. The take-home lesson is that, insofar as the disputes arising in regions of discourse concerning matters of personal taste are construed in a truth perspectivalist manner, they do not constitute, as I have shown, authentic examples of faultless doxastic disagreements and, in consequence, the coherence of the semantic program which truth perspectivalism advocates, with regard to sentences from regions of discourse about matters of personal taste, must be put in doubt.[40]

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# COHERENTISM AND BELIEF FIXATION

Erik KRAG

ABSTRACT: Plantinga argues that cases involving 'fixed' beliefs refute the coherentist thesis that a belief's belonging to a coherent set of beliefs suffices for its having justification (warrant). According to Plantinga, a belief cannot be justified if there is a 'lack of fit' between it and its subject's experiences. I defend coherentism by showing that if Plantinga means to claim that *any* 'lack of fit' destroys justification, his argument is obviously false. If he means to claim that *significant* 'lack of fit' destroys justification, his argument suffers a critical lack of support. Either way, Plantinga's argument fails and coherentism emerges unscathed.

KEYWORDS: coherentism, Alvin Plantinga, warrant, justification

## 1. Introduction

Many theorists think cases involving 'fixed' or 'frozen' beliefs refute the following thesis:

> **Coherence Suffices (CS)**: If (i) S's belief B belongs to a coherent belief set *and* (ii) S is not violating any intellectual duties in holding B, then B is epistemically justified (has a significant degree of warrant – the property enough of which makes true belief knowledge).

In what follows, I will defend CS from Alvin Plantinga's[1] (1993a, 1993b) influential version of the 'frozen beliefs' objection to coherentism. Plantinga uses the term warrant in two very different though not always clearly delineated ways, only one of which applies with respect to his argument against CS. On the one hand Plantinga uses the term 'warrant' to describe the difference maker between true belief and knowledge. Alternatively Plantinga also describes the term 'warrant' as something that comes in degrees.[2] Indeed Plantinga describes himself as "committed to the thought that false beliefs can have *some* warrant, but not to the thought that they can have warrant *sufficient for knowledge*."[3] This degreed notion of warrant describes something very much like what most philosophers call epistemic justification. Beliefs, both true and false, can have warrant on this view, to varying degrees without necessarily yielding knowledge. Plantinga's

[1] See Alvin Plantinga, *Warrant and Proper Function* (New York: Oxford University Press. 1993) and Alvin Plantinga, *Warrant: The Current Debate* (New York: Oxford University Press. 1993).
[2] See Alvin Plangtinga, "Warrant and Accidentally True Belief," *Analysis* 57, 2 (1997): 140-145.
[3] Plantinga, "Accidentally True Belief," 140.

claim is not that persons in frozen belief cases lack knowledge-level warrant – this is indeed a weak claim. Rather Plantinga's claim is much stronger. Plantinga claims that the beliefs of persons in these types of cases have no warrant whatsoever due to the lack of fit between those beliefs and the relevant experiences. But this is surely not an obvious claim. On the contrary, it seems intuitive to me that the beliefs of persons undergoing this kind of cognitive malfunction would have some degree of warrant, indeed a significant degree of warrant. Certainly not enough warrant to yield knowledge from true belief, but a significant degree nonetheless. Throughout the remainder of my paper, I will therefore present Plantinga's argument against CS in terms of epistemic justification in order to avoid confusion with respect to the differences between knowledge-level warrant, which has little to no bearing in the context of Plantinga's frozen belief objection to coherentism, and the degreed notion of warrant to which Plantinga appeals in this context.

Plantinga has us imagine a subject, S, whose system of beliefs is (initially) both coherent and appropriately responsive to her experiences. S's cognitive faculties then malfunction; as a result, S's beliefs are 'fixed' or 'frozen' in their present (coherent) state, unresponsive to subsequent changes in S's experiences. According to Plantinga, such cases establish that a belief's cohering with the other beliefs in its system does not suffice for the belief's being epistemically justified.

I will disable this objection to CS. 'Belief fixation' cases like the ones Plantinga describes turn on the following premise:

> If there is a lack of fit between one's experiences and one's beliefs, then one's beliefs cannot be epistemically justified.

I will argue that this premise faces a dilemma. On the strong interpretation which takes Plantinga as asserting that *any* lack of fit between one's experiences and one's belief suffices to destroy justification for that belief, this premise is clearly false. If, on the other hand, we take Plantinga to be asserting the weaker claim that *a significant* lack of fit between one's experiences and one's belief suffices to destroy justification for that belief, then this premise suffers from a critical lack of support. Either way, Plantinga's argument fails and CS emerges unscathed. (I strongly suspect that my objection to Plantinga's argument applies to other 'anti-CS' arguments similar to Plantinga's [e.g., that developed by Richard Feldman[4]], but won't have space here to extend my objection beyond Plantinga.)

[4] Richard Feldman, *Epistemology* (Upper Saddle River, NJ: Prentice Hall, 2003).

## 2. Plantinga's Paradigm Case: The Epistemically Inflexible Climber

In what follows, I will examine and critique one of Plantinga's most famous alleged counterexamples to CS. Since all of Plantinga's attempted counterexamples to CS follow the same structure as the one which I now critique, the following objections can be generalized to impugn Plantinga's other examples.

> Ric is climbing Guide's Wall… [While he is] enjoying the mountain sunshine and idly looking around, he forms the beliefs that Cascade Canyon is down to his left, that the cliffs of Mount Owen are directly in front of him, that there is a hawk gliding in lazy circles 200 feet below him, that it is broad daylight, that the sun is wonderfully warm and pleasant, that he is wearing his new *Fire* rock shoes, and so on. His beliefs, we may stipulate, are coherent. Now add that Ric is struck by an errant burst of high-energy cosmic radiation, causing subtle but pronounced brain damage. As a result, he is subject to cognitive malfunction: his beliefs become *fixed*, no longer responsive to changes in his experience. No matter what his experience, his beliefs remain the same… That evening, in a desperate last-ditch attempt at therapy, his partner takes him to the opera in nearby Jackson, where the New York Metropolitan Opera on tour is performing *La Traviata*. Ric's experience is the same as everyone else's; he is inundated by wave after wave of golden sound. The effort at therapy unhappily fails; Ric's beliefs remain fixed and wholly unresponsive to his experience… Furthermore (since he believes the very same things he believed when seated on the ledge), his beliefs are coherent. But surely they have little or no warrant for him… Here the problem was an unfortunate lack of fit between the way in which Ric was appeared to – 'operatically' as we might say – and the beliefs he held about his surroundings.[5]

### 2.1 Conscious vs. Nonconscious Experience: An Implied Distinction

It is at first tempting to say that Ric's cognitive malfunction is far more severe than Plantinga lets on. Intuitively, we might find ourselves attracted to the idea that in losing the ability to form new beliefs, one loses the ability to have experiences generally. This notion rests on the view that experiences and beliefs are in some way conceptually linked – if you have an experience of the world, then you have a belief about the world. Upon reflection however, we find that this intuition is simply not tenable.

As I sit in my study hunched over my keyboard composing these words, I have a wide variety of subjective experiences – that is to say that I am being appeared to in many different ways. I have subjective experiences of my monitor in front of me, of my keyboard clicking and clacking beneath my fingers, and of

[5] Plantinga, *Warrant and Proper Function*, 179-181.

the breeze blowing gently from my window. And indeed I do form beliefs about the world on the basis of these subjective experiences (that there is a breeze coming through my window, that my monitor is in front of me, that I have a keyboard and that it is a noisy keyboard at that). But I have numerous other subjective experiences on the basis of which I do not form new beliefs about the world. Indeed, we can conceive of many circumstances where we have experiences, but where we do not form beliefs about the world on the basis of those experiences. Consider the following example:

> Suppose that Tom at time $t_1$ differs (perceptibly) from Tom at $t_2$ only in having a moustache at $t_2$. S sees Tom at both times but does not notice the moustache – is not, therefore aware that he has grown a moustache. Since, however, S spends twenty minutes talking to Tom in broad daylight, it is reasonable to say that although S did not notice the moustache, he (must) nonetheless have seen it.[6]

In this example S is being appeared to moustache-ly but does not notice that Tom has grown a moustache, does not therefore form the belief that Tom has a moustache from his experience of Tom's moustache. From these sorts of examples, we can draw a fairly straightforward distinction between what I will call 'conscious experiences' – experiences on the basis of which we do form beliefs about the world – and 'nonconscious experiences' – experiences like S's experience of Tom's moustache, on the basis of which we do not form new beliefs about the world.[7]

The details of the epistemically inflexible climber case seem to indicate that Plantinga has this distinction or something very much like this distinction in mind with regard to Ric's operatic experiences. Plantinga needs such a distinction in order to explain how it is that Ric can continue to have experiences even though

[6] Fred Dretske, "Conscious Experience," *Mind* 102, (1993): 267.

[7] Dretske uses this illustration for a slightly different purpose. For Dretske, all experiences are conscious. The distinction which Dretske uses the example of Tom's moustache to explain is one between a person's conscious awareness of things (S's experience of Tom's moustache at $t_2$) and a person's conscious awareness of facts (S's belief *that* Tom has a moustache at $t_2$). Thus for Dretske one can have a conscious experience that one is not conscious of having, because being conscious of having an experience involves the operation of concepts involved in the formation of beliefs. So again in reference to Tom's moustache, S's believing that Tom has a moustache at $t_2$ involves the concept of a moustache and the identification of that concept with the thing being experienced. But all this is to say that one can have an experience without forming a belief about that experience – roughly what my distinction between 'conscious' and 'nonconscious' experience is designed to illustrate. I want to be clear however that my use of Dretske's illustration does not amount to the claim that Dretske would endorse my view. Rather, here I am using Dretske's example to illustrate a distinction which is implied by the way Plantinga constructs the case of the epistemically inflexible climber.

his ability to form new beliefs has been lost. All of Ric's post-radiation experiences must be of the nonconscious type. To say otherwise – i.e., to say that Ric has conscious experiences of the opera – would be to say that Ric forms new operatic beliefs. But this conclusion would call into question the very point of Plantinga's example. Thanks to the belief fixing ray of cosmic radiation, Ric's coherent set of beliefs cannot change. He can neither lose the beliefs that he had when he was struck nor can he receive new beliefs based on his post-radiation experiences. But if we stipulate that one has a conscious experience only if that experience generates a new belief, it follows that Ric no longer has new conscious experiences. So, if Plantinga refuses to invoke the notion of *nonconscious* experience, then his example is incoherent, and so not a genuine counterexample to CS.

As we shall see, even if we do interpret Plantinga as holding that Ric's post-radiation experiences are of the non-conscious type, his argument against CS still faces a rather nasty dilemma.

### 2.2 Plantinga's Argument

I now turn back to Plantinga's paradigm 'belief fixation' case, and the argument against CS it yields. The argument against CS arising from the case of the 'Epistemically Inflexible Climber' can be formalized as follows:

**1.** If CS is true, then Ric's (post-radiation) beliefs are epistemically justified.
**2.** But due to cognitive malfunction, there is a lack of fit between Ric's nonconscious experiences and his beliefs.
**3.** If there is a lack of fit between Ric's nonconscious experiences and his beliefs, then Ric's beliefs are not epistemically justified.
**4.** So: Ric's beliefs are not epistemically justified. [2, 3]

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**C.** Therefore: CS is false. [1, 4]

## 3. Plantinga's Dilemma

I will show that the above argument faces the following dilemma: Premise three of Plantinga's argument is ambiguous, admitting of a strong interpretation (3S) and a weak interpretation (3W). We can generalize these interpretations as follows.

**3S:** If there is *any* lack of fit between one's nonconscious experiences and one's beliefs, then one's beliefs are not epistemically justified.

**3W:** If there is a *significant* lack of fit between one's nonconscious experiences and one's beliefs, then one's beliefs are not epistemically justified.

As we shall see, the strong interpretation (3S) is too strong, ruling out justification for one's beliefs not only in belief fixation cases but in ordinary cases as well. But just as the strong interpretation is too strong, we shall see that the weak interpretation (3W) isn't strong enough. Applying the term 'significant' to the antecedent of premise three can only get Plantinga so far. In order to use 3W as the central premise in his argument against CS, he'll need to rule out certain alternative explanations of the absence of justification in cases featuring a significant lack of fit between nonconscious experiences and belief, explanations that (unlike Plantinga's) focus on something other than the lack of fit itself; and he'll have to do this without assuming his own theory of warrant (for, given the overall structure of Plantinga's argumentation, his objection to CS is designed to lend support to his preferred theory of warrant, 'proper functionalism'). In either case, Plantinga's central premise will remain open to question, and Plantinga's argument against CS will be on shaky ground at best.

### 3.1 Does 'Any' Lack of Fit Suffice to Destroy Justification?

The first horn of the dilemma facing Plantinga's argument suggests that a subject S's belief has positive epistemic status (justification) only when that belief fits perfectly with S's relevant nonconscious experience. If there is any discord between one's belief and one's experience, that belief cannot be epistemically justified. But I submit that this strong interpretation is simply too strong. As the following example demonstrates, even Plantinga will want to concede that a belief of yours may be justified so long as the lack of fit between your belief and the relevant experience is only slight.

*The Truck Driver Case (TD1)*

> Consider the case of the long-distance truck driver. Let us stipulate that the trucker is not paying attention to the time. At 5am, the trucker forms a justified belief that it is pitch black outside. His pitch black belief coheres with the other beliefs in his belief set. The trucker then 'zones out' until 5:05am. At some point during this interval, the sun begins to rise. Near the end of the interval, the trucker's experience has changed slightly (due to the sun's starting to rise) but because he is not attending to his 'lightness' experiences he simply hasn't noticed *that* it is no longer pitch black. He hasn't formed any new beliefs based on these experiences. Rather throughout the interval, the trucker continues believing it is pitch black out. This is not to say that the trucker did not form other beliefs during these five minutes: we may allow that he did (i.e. that the road curves to the right up ahead, that the radio is playing his favorite song, etc). Nor is it to say that these new beliefs did not cohere with his 'pitch black' belief. It is simply to

> say that the trucker's pitch black belief did not change even though there was a slight change in his 'lightness' experience.[8]

Now, some will be tempted to reply that after five minutes of sunrise, the circumstances informing the contents of the trucker's 'lightness' experience will have changed so drastically that the idea of his having a justified 'pitch black' belief becomes outlandish – the trucker should have formed a new belief. I submit however that such a response misunderstands the distinction between conscious and nonconscious experience implicit in Plantinga's argument. Certainly, at some point during the morning, the trucker's nonconscious experience of daylight will become conscious causing his 'pitch black' belief to change, but then he would be having a conscious experience of daylight rather than a nonconscious one. At any rate, the temptation to withdraw justification from the trucker's 'pitch black' belief should lose its intuitive appeal if we modify the example so as to shorten the time during which the trucker 'zones out' to 1 minute or less. So, at 5:01am the trucker's belief set includes the 'pitch black' belief mentioned above even though he is being appeared to in a manner that is just slightly lighter than pitch black. To say that this belief lacks justification would be to endorse a brand of skepticism with regard to justification which most epistemologists (Plantinga included) would find hard to swallow.[9]

But 3S rules that our truck driver is *not* justified in his pitch black belief. The truck driver's pitch black belief does not fit perfectly with his slightly lighter

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[8] This case (TD1) and the next (TD2) were inspired by a similar truck driving case offered originally by David Armstrong, *The Nature of Mind and Other Essays* (Ithaca: Cornell University Press, 1980), 59. This case was later referenced in Dretske, "Conscious Experience," 271.

[9] One further response to this case might involve the claim that normal human beings are not able to make extremely fine discriminations between it being perfectly pitch black or just slightly lighter than pitch black. Moreover, normal human beings ought to be well aware of this fact. Consequently, even if it is perfectly pitch black out, it is not plausible that the truck driver is justified in so believing. At best, what he is justified in believing is that it is somewhere in the vicinity of being pitch black. Believing anything more precise than that is simply not justified for such an individual. But if he only justifiably believes the less precise claim, then his belief still continues to fit the subsequent experiences he has at 5:05. I suspect however that this response leads once again to an implausible skepticism about what we're justified in believing. Indeed, any belief we have as to quantitative measurement would be deemed unjustified without adding the clause 'somewhere in the vicinity.' Thus, I would not be justified in believing such things as "my two-year-old son weighs twenty-eight pounds." Rather, I would only be justified in believing something like, "my son, who is approximately two years old, weights somewhere in the neighborhood of twenty-eight pounds." With respect to our beliefs about the world most of us simply do not hedge our bets in this way.

than pitch black experience and on 3S, no lack of fit, no matter how slight, is compatible with that belief's being justified. But this just isn't true. Our sensory experiences are constantly changing, our beliefs are not. We want to say that under normal circumstances, a belief is justified even when the fit between it and our experience is slightly off. Moreover, an approach to justification which cannot account for this intuition is one which will fail to attract those already convinced by or on the fence about CS.

So, it looks as though a belief's being justified does not require that it fit perfectly with one's nonconscious experience. But then premise 3 (or, in this case 3S) of Plantinga's argument is dubious at best. From this we must conclude that if we interpret Plantinga's third premise strongly then his argument against CS fails.

### 3.2 Does 'Significant' Lack of Fit Suffice to Destroy Justification?

Perhaps Plantinga will respond by saying that TD1 is different from Ric's case in the following way: In TD1 (and in cases relevantly similar to TD1) the discord between the trucker's pitch black belief and the trucker's slightly less than pitch black experience is slight, whereas the difference between Ric's mountaintop beliefs and Ric's operatic experience is significant. So, Plantinga might concede that a slight lack of fit between one's beliefs and one's experiences does not suffice to eliminate the epistemic justification of those beliefs. It is however open to Plantinga to claim that when the lack of fit between one's beliefs and one's experiences is radical (like in the case of the epistemically inflexible climber) justification is lost. All of this is to say that Plantinga could respond with an endorsement of the weak interpretation of the third premise of his argument (3W). It is, at this point, important to note that though 3W would no doubt be deemed acceptable by many committed foundationalists, foundationalists are not the target audience for Plantinga's argument. Plantinga's target audience includes proponents of CS and those who remain uncommitted with respect to CS (persons for whom the truth of 3W will not be regarded as obvious). Thus, Plantinga might try to support 3W by generalizing from the following TD1 inspired case:

*The Modified Truck Driver Case (TD2)*

> Like the previous example, suppose that the truck driver is not aware of the time, that he forms a pitch black belief at 5:00am, and that that pitch black belief coheres with the rest of his beliefs. But whereas the truck driver from the previous example 'zones out' for only 5 minutes, this truck driver "zones out" for 5 hours. Over the course of this 5 hour time period the truck driver's pitch black belief does not change despite the fact that he sees the sun in the sky, that is, he is being appeared to sun-ly. Surely this truck driver is not justified in his pitch

black belief. His pitch black belief exhibits a significant lack of fit with his sunlight experience.

Unfortunately for Plantinga, it would be hasty to generalize to 3W from TD2 because it is not clear that significant lack of fit offers the best explanation as to why we should conclude that the truck driver's belief is unjustified. Unless Plantinga can explain why the significant lack of fit between the truck driver's belief and experience accounts for the loss of justification for the truck driver's pitch black belief, it is open to the proponent of CS to either argue that the truck driver remains justified in believing that it is pitch black so long as his pitch black belief continues to cohere with the rest of his beliefs, or (more plausibly) to offer another 'CS-friendly' explanation for why that justification has been lost which does not appeal to a lack of fit between experience and belief.

Plantinga seems to have only two options available. Either (a) the problem with the truck driver in this example is that he has suffered some sort of *cognitive malfunction* prohibiting him from forming relevant beliefs about the world based on his subjective experience, or (b) the problem with the truck driver in this example is that he has *neglected his epistemic duty* to form relevant beliefs about the world based on his subjective experience.

The first of these options has the virtue of consistency. Cognitive malfunction was also to blame for the significant lack of fit between the experiences and the beliefs of the protagonist in Plantinga's other example. Unfortunately the consistency of this option is also its undoing. To see why, it is necessary to take a step back and examine Plantinga's overall dialectic purpose. Ultimately Plantinga means to introduce his own theory of warrant, a theory which explains warrant (that stuff enough of which suffices to make true belief knowledge) in terms of one's properly functioning cognitive faculties operating in the right kind of environment.[10] But before he can explain his own theory of warrant, he has to motivate his view by providing theory independent reasons as to why other leading theories are untenable and thus inferior to his own (otherwise, his argument for his distinctive theory of warrant from his claims about cases like that of Ric is viciously circular).

Enter Plantinga's 'belief fixation' argument against CS. The case of the epistemically inflexible climber is supposed to put the nail in the coffin for CS by showing that it is obviously wrong regardless as to the theory of warrant one takes. Certainly it is open to Plantinga to show how his own view fares better

[10] For a detailed exposition of Plantinga's own theory of warrant, see Plantinga, *Warrant and Proper Function*, chapters 1 and 2. See also, Alvin Plantinga, "Positive Epistemic Status and Proper Function," *Philosophical Perspectives* 2, Epistemology (1988): 32-47.

given the details of this sort of case, but it is not open to Plantinga to take his own view for granted as part of his criticism of CS (given that his objection to coherentism serves as a premise in his overall argument for proper functionalism). If Plantinga's proper function view is meant to rise from the ashes of CS, he cannot use an argument from proper function to set CS aflame. To do so would be to argue in a circle.

The second of these options does not fare any better. If we incorporate a negligence condition into the antecedent of 3W, we make Plantinga's overall objection to coherentism considerably less plausible:

> **3WW**: If there is a significant lack of fit between one's nonconscious experiences and one's beliefs and *one has violated certain of one's epistemic duties*, then one's beliefs are not epistemically justified.

But this weakened premise presents its own dilemma for Plantinga's argument. On the one hand, using 3WW requires Plantinga to strengthen premise 2 of his anti-CS argument in a way that makes it false – the significant lack of fit between Ric's experiences and Ric's beliefs is due not to epistemic negligence but to a ray of belief fixing cosmic radiation. Thus, Ric is in no way responsible for his predicament. On the other hand, if we allow Plantinga to specify that the ray of cosmic radiation which fixes Ric's beliefs does so by somehow making Ric neglect his epistemic duties, premise 1 of Plantinga's argument is no longer true.

Recall that CS, the thesis that Plantinga's belief fixation case is meant to refute, specifies that a belief B is justified for S if B belongs to a coherent belief set and S is not violating any intellectual duties in holding B. Using the modified case would make premise 1 of Plantinga's argument false: CS simply does not imply that Ric's belief in the modified 'negligence-involving' case is justified. Hence, even if Ric was somehow epistemically blameworthy for his cognitive malfunction it would be open to the coherence theorist to point out that Plantinga's modified case simply isn't of the right form to be a counterexample to CS, since CS's antecedent is false on the interpretation now being considered.

So the advocate of CS could claim that if the significant lack of fit between the truck driver's pitch black belief and his experience of the sun is caused by some sort of cognitive malfunction (as was the case with Ric the rock climber) it is not clear that the truck driver is unjustified in believing that it is still pitch black out insofar as coherence suffices for justification. If on the other hand, the significant lack of fit between the truck driver's pitch black belief and his experience of the sun is the result of epistemic negligence on the part of the truck driver, the advocate of CS could respond by arguing that it is the truck driver's

negligence which is responsible for his pitch black belief being unjustified, not the lack of fit between it and his experience of the sun.

Now, it might be objected that I have stacked the deck with my choice of examples. The circumstances described in TD2 are such that we cannot help but conclude that our trucker has neglected his epistemic duty. A truck driver who zones out for five hours at a time while driving such a large and potentially dangerous vehicle is not only epistemically blameworthy but morally blameworthy as well. There may not be many obligations for truck drivers but at the very least one of them involves the duty to consciously monitor one's environment. So, the objection goes, by using a truck driver who zones out for five hours as the protagonist in TD2, I have manipulated the reader into concluding as I do that negligence is the only real explanation for a lack of fit between experiences and beliefs. But what would happen if we considered another, less leading example?

*The Case of the Insatiable Scholar (ISC)*

> Imagine a somewhat eccentric scholar who has made it her life's work to study that which she loves the most: the writings of German philosopher Georg Wilhelm Friedrich Hegel. Our scholar has spent many a day completely absorbed in her study, reading for hours on end without taking so much as a short break to eat, drink or go to the bathroom. While she is reading Hegel, our scholar 'gets into the zone' focusing only on her reading despite the fact that she has many nonconscious sensory experiences on the basis of which no beliefs are formed. One Saturday, right after a rather large breakfast of pancakes and eggs, our scholar forms the belief that she is full. She forms this belief right as she begins one of these extended study sessions. We may specify that this fullness belief is justified, it coheres with the rest of her beliefs. Our scholar then 'gets into the zone' and proceeds to read Hegel for the next 12 hours straight. During this time our scholar believes that she is full despite the fact that over time her experience changes. But surely after 12 hours our scholar is not justified in believing that she is full. For now our scholar experiences an intense hunger which exhibits a significant lack of fit with her fullness belief. But unlike the truck driver in TD2, it makes little sense to assign blame to our scholar for not noticing her hunger experience. Our scholar has not violated any epistemic duties/requirements stemming from her professional and/or moral obligations. Indeed, in this example our scholar has dutifully fulfilled her obligations of scholarship.

Unfortunately, I don't think that this example fares any better than TD2 with regard to the violation of one's *purely* epistemic obligations. Certainly, both the truck driver and the Hegel scholar have *occupation specific* epistemic duties to fulfill. But to say that fulfilling the epistemic obligations imposed by one's occupation suffices to fulfill the epistemic obligations stipulated by the second

clause of CS is to confuse two different kinds of epistemic obligation. The duties which must not by violated according to CS fall in line with Chisholm's notion of epistemic obligation, a notion which Plantinga himself explains as a duty we have "qua intellectual beings" – "that is, just by virtue of being the sort of creature that is capable of grasping and believing (or withholding) propositions."[11] These sorts of obligations I will call *purely* epistemic/intellectual obligations or requirements. Plantinga notes that "our natures are such that for each of a wide variety of circumstances there are certain beliefs we are strongly disposed or inclined to form and when we find ourselves in these circumstances, we find ourselves with those beliefs."[12] In these circumstances, our epistemic duty or obligation (qua intellectual beings) is to "fall in with our natural inclinations and accept the beliefs nature inclines us towards."[13] But then it seems that the case of the insatiable scholar assumes a faulty view of (what I'm calling) purely epistemic duty, one which somehow absolves the Hegel scholar by saying that she has no such epistemic duty to monitor her fullness experiences. For if all intellectual beings have a purely epistemic duty to accept the beliefs which their nature inclines them to accept (as Plantinga suggests, at least), and if it is natural that a person should have intense hunger experiences after 12 hours with no food, then even if she fulfills the epistemic duties stemming from her professional obligations, the Hegel scholar is flouting her purely epistemic duties by ignoring her hunger experiences.

In the end, then, employing the Insatiable Scholar Case (ISC) on 3W's behalf gives rise to the same dilemma facing TD2: step 2 of Plantinga's argument is false if Ric's case *isn't* modified to be like ISC, whereas step 1 is false if the case *is* so modified (since the second clause of CS should be understood in terms of purely epistemic duties).

Though I suppose it is possible that Plantinga could develop a modification to 3W which does not rely on epistemic negligence and which would be applicable to cases of 'belief fixation' without thereby referencing proper function, I find it highly unlikely that such a modification exists. As it stands, the weaker version of Plantinga's key premise, while not conclusively false, is in critical need of support. Thus, on the weak interpretation of 'lack of fit,' Plantinga's argument against CS fails.

[11] Plantinga, "Positive Epistemic Status," 6.
[12] Plantinga, "Positive Epistemic Status," 7.
[13] Plantinga, "Positive Epistemic Status," 7.

## 4. Conclusion

Insofar as Plantinga's 'belief fixation' cases are meant to persuade proponents of CS and those who remain uncommitted with respect to CS that CS is obviously false, his objection simply doesn't work. I have shown that Plantinga's central premise faces a nasty dilemma. On the strong interpretation it is obviously false, and on the weak interpretation it's in critical need of support. As a result Plantinga's 'belief fixation' arguments fail to convincingly refute CS.

# THE 'PIERRE DUHEM THESIS.' A REAPPRAISAL OF DUHEM'S DISCOVERY OF THE PHYSICS OF THE MIDDLE AGES

Horia-Roman PATAPIEVICI

ABSTRACT: Pierre Duhem is the discoverer of the physics of the Middle Ages. The discovery that there existed a physics of the Middle Ages was a surprise primarily for Duhem himself. This discovery completely changed the way he saw the evolution of physics, bringing him to formulate a complex argument for the growth and continuity of scientific knowledge, which I call the 'Pierre Duhem Thesis' (not to be confused either with what Roger Ariew called the 'true Duhem thesis' as opposed to the Quine-Duhem thesis, which he persuasively argued is not Duhem's, or with the famous 'Quine-Duhem Thesis' itself). The 'Pierre Duhem Thesis' consists of five sub-theses (some transcendental in nature, some other causal, factual, or descriptive), which are not independent, as they do not work separately (but only as a system) and do not relate to reality separately (but only simultaneously). The famous and disputed 'continuity thesis' is part, as a sub-thesis, from this larger argument. I argue that the 'Pierre Duhem Thesis' wraps up all of Duhem's discoveries in the history of science and as a whole represents his main contribution to the historiography of science. The 'Pierre Duhem Thesis' is the central argument of Pierre Duhem's work as historian of science.

KEYWORDS: Pierre Duhem, physics of the Middle Ages, scientific knowledge, history of science

## 1.

The discoverer of the physics of the Middle Ages was Pierre Duhem (1861-1916) – physicist, philosopher, and historian of science.[1] Since this wondrous episode is rarely mentioned, and the importance of the physics of the Middle Ages to the

[1] Stanley L. Jaki, *Uneasy Genius: The Life and Work of Pierre Duhem* (The Hague/Boston/Lancaster: Martinus Nijhoff Publishers, 1984); Stanley L. Jaki, *Pierre Duhem. Homme de science et de foi*, trans. François Raymondaud (Paris: Beauchesne, 1990); Stanley L. Jaki, "Science and Censorship: Hélène Duhem and the Publication of the 'Système du Monde,'" *The Intercollegiate Review* (Winter 1985-86): 41-49, reprinted in Stanley L. Jaki, *The Absolute beneath the Relative and Other Essays* (New York: University Press of America, 1988), 173-187. For a critical assessment of Duhem's discoveries regarding the physics of the Middle Ages, see John E. Murdoch, "Pierre Duhem and the History of Late Medieval Science and Philosophy in the Latin West," in *Gli studi di filosofia medievale fra otto e novecento. Contributo a un bilancio storiografico. Atti del convegno internazionale Roma, 21-23 settembre 1989*, eds. Ruedi Imbach and Alfonso Maierù (Roma: Edizioni di Storia e Letteratura, 1991), 255-302.

birth of modern science of nature is frequently denied, often ignored, and almost always disregarded, I will first try to sketch briefly the history of this discovery.

That the Middle Ages was a scientifically fertile era was a fact nobody remembered anymore at the beginning of the 20th century. On the contrary, all the *authoritative* people were anchored in the belief that, in what regarded physics, between Archimedes and Galileo there had passed 18 centuries of darkness. This 'knowledge' (actually, a pre-judgment) had imperceptibly become *opinio communis* throughout the cultivated Europe. But, considered in its origin, this 'consensus of authorities' was merely the consequence imposed by the Renaissance position. The Renaissance humanists did not see in the logicism and mathematicism of the great doctors of scholasticism anything else than the corruption of Latin. The division of history into three eras (Antiquity, Middle Ages and the Modern Times) dates from the early Renaissance. This division was made to mark the distance of those claiming it from what immediately preceded them, as well as their adherence to the distant past. According to these value judgments, classical antiquity was associated with bright light, the period that followed it became the 'Dark Ages,' and the age of those who invented this temporal tripartition was presented as an exit out of the night, an awakening, a Renaissance.[2] An example is Pierre de la Ramée who, in the first three books of his work *Scholarum mathematicarum libri unus et triginta* (1596), presents a detailed account of the development of mathematics in which medieval contributions are completely absent. Was that because there have not existed any? We know well today that they existed. Medieval contributions were absent because they *had* to be ignored: the logic of the tripartite scheme demanded that. Therefore, from the Greek antiquity, Pierre de la Ramée passes directly to the time when, according to him, there took place the 'rebirth of sciences.[3]

With his incomparable propagandistic and polemic genius, Voltaire imposed the preconception that traditional Christian institutions exerted a major obscurantist influence on human progress,[4] while William Whewell, with the

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[2] On this division, see Matei Călinescu, *Five Faces of Modernity: Modernism, Avant-garde, Decadence, Kitsch, Postmodernism* (Durham: Duke University Press, 1987), 19-22.

[3] Matthias Schramm, "Steps Towards the Idea of Function: A Comparison between Eastern and Western Science of the Middle Ages: Augustine to Galileo," *History of Science* 4 (1965): 70. For a nuanced discussion of this statement, regarding the contributions to optics which Pierre de la Ramée has himself recommended for publication (the Latin version of Ibn al-Haytham's *Optics* and the compilation of Witelo), see Schramm, "Steps Towards the Idea of Function," 97-98 (note 5).

[4] David S. Lux, "Societies, Circles, Academies, and Organizations: A Historiographic Essay on Seventeenth-Century Science," in *Revolution and Continuity: Essays in the History and*

authority of the expert, denied the possibility of any form of science in the 'Dark Ages' dominated by the Church, arguing that all the speculations of medieval scholars regarding nature were confused and based on fictitious notions, that natural science is an invention of the 17th century, and its only antecedents can be identified in Antiquity.[5] In 1788, with the supreme authority given by the most important treatise of mechanics of the century – *Mécanique Analytique* –, the great Lagrange asserted that between Archimedes and Galileo science has experienced eighteen centuries of darkness: "l'intervalle qui a séparé ces deux grands génies disparaît dans l'histoire de la Mécanique."[6]

Five years later, the Marquis de Condorcet confirmed the verdict of the eighteen centuries, and even added them two more. For the revolutionary Condorcet, who wrote *Esquisse d'un tableau des progrès de l'esprit humain* fleeing from Jacobin authorities who sought to arrest him, „the triumph of Christianity marked the entrance into a complete decay of philosophy and sciences," so that between Plato and the 17th century there have passed twenty centuries of „complete unfruitfulness" for the advancement of science:

> Le matelot, qu'une exacte observation de la longitude préserve du naufrage, doit sa vie à une théorie qui, par une chaîne de vérités, remonte à des découvertes faites dans l'école de Platon, et ensevelis pendant vingt siècles dans une entière inutilité.[7]

## 2.

This was also Duhem's opinion until 1903. As a historian of science, Duhem wholeheartedly embraced the idea (taken in his specialty, apart from Lagrange, also from Dühring[8] and Mach[9]) that the medieval period was scientifically sterile and that, therefore, between the science of the Greeks (such as it was) and the

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*Philosophy of Early Modern Science*, eds. Peter Barker and Roger Ariew (Washington, D.C.: The Catholic University of America Press. 1991), 25 (note 6).

[5] William Whewell, *History of the Inductive Sciences from the earliest to the Present Times*, vol. 1 (London: John W. Parker; Cambridge: J. and J.J. Deighton, 1837), 235-236.

[6] J.-L. Lagrange, *Mécanique analytique*, tome II, 3e éd., ed. M. J. Bertrand (Paris: Mallet-Bachelier, Gendre et Successeur de Bachelier, 1853), 243

[7] Marquis de Condorcet, *Esquisse d'un tableau des progrès de l'esprit humain* [first published in 1795], in *Les sciences historiques de l'antiquité à nos jours*, eds. Charles-Olivier Carbonell and Jean Walch (Paris: Larousse, 1994), 107..

[8] Eugen Dühring, *Kritische Geschichte der allgemeinen Principien der Mechanik* (Berlin: Theobald Grieben, 1873).

[9] Ernst Mach, *Die Mechanik in ihrer Entwicklung historisch-kritisch dargestellt* (Leipzig: F.A. Brockhaus, 1883).

17th century (when modern science was born, almost *ex nihilo*) we are dealing with a profound discontinuity.[10] For example, in his first article on the history of physics, "Les Théories de l'Optique" (1894), Duhem states plainly that the birth of the discipline he is studying takes place in the 17th century, with Descartes as a source of the optical theories.[11] His argument runs as it follows: except for astronomy, hydrostatics and the general principles of statics, the history of natural science in Antiquity and the Middle Ages only gives us „inconsistent or poorly observed facts;" and the truths glimpsed by men of genius are ignored by their immediate descendants. In conclusion, Duhem says in 1894, "the scientist will not find [at the Egyptians and the Greeks] a continuous evolution and a logical concatenation of the professed doctrines;" or, as in the history of science it is only this continuous and logical concatenation that interests us, one cannot speak about a history of physics prior to the 17th century.

After having given in the first four months of 1903 a detailed study on the evolution of mechanics (*L'évolution de la Mécanique*), in which he faithfully follows the conception of all *informed* men of the time, namely that between Aristotle's unusable science and the geometricians of the 17th century, when "sciences are reborn," there is only the 'old scholasticism,' in its turn unusable,[12] Duhem begins to publish in quarterly series in the *Revue des questions scientifiques*, starting with October, a long study on the origins of statics. Bound together, these installments will become after two years the book *Les Origines de la Statique* (2 volumes, 1905; 1906).[13] The installments had to appear regularly – in January, April, July and October of each year.

For Duhem, at that time already an experienced historian of science, the subject under study did not present any particular problems. Everything was predictable. Counting on Duhem's proverbial conscientiousness, the editor expected an unabated delivery. The first installment appears in the October 1903 issue, where Duhem writes that

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[10] R. N. D. Martin, "Duhem and the Origins of Statics: Ramifications of the Crisis of 1903-04," *Synthese* 83, 3 (1990): 342.

[11] Pierre Duhem, "Les Théories de l'Optique," *Revue des deux mondes* CXXIII (1894): 94-125.

[12] Pierre Duhem, *L'évolution de la mécanique* (Paris: Librairie Scientifique A. Hermann, 1905), 13; *L'évolution de la mécanique* consists of articles published between January 30 and April 30, 1903, in the *Revue générale des Sciences*. After a very general overview of the 'peripatetician mechanics' (Chap. I), in which Duhem illustrates the manner of explanation of natural phenomena in Aristotelian physics, the second chapter begins abruptly with this statement: „La renaissance des sciences au début du XVII$^{e}$ siècle fut une réaction violente contre des semblables explications."

[13] Pierre Duhem, *Les Origines de la Statique* (Paris: Librairie Scientifique Hermann, 1905-1906).

> Les commentaires des Scolastiques touchant les Méchanika Problèmata d'Aristote n'ajoutèrent rien d'essentiel aux idées du Stagirite; pour voir ces idées pousser de nouveaux surgeons et donner de nouveaux fruits, il nous faut attendre le début du XVIe siècle.[14]

The first four chapters of the first volume (all published in the October 1903 installment) pass from Aristotle to Leonardo and Cardan, without the Middle Ages being even mentioned. But for the January issue – surprise! – Duhem does not send the following chapters. He apologized to Father Julien Thirion, his editor, saying that there have appeared a number of supplementary readings which he had not taken into account in the original plan of the work.[15] Chapter 5, which appears in the *Revue des questions scientifiques* in the April 1904 issue and which should have continued with the contributions in statics after Cardan (16th century), makes a sudden return (back until the 13th century). Perfectly illogical to the original plan, which did not even mention the contributions of the Middle Ages to the science of statics, Duhem informs us that, before studying 'the fundamental treatise of Statics' produced by the 'enigmatic' Jordanus Nemorarius, there should be collected the 'debris' on this subject, scattered throughout the manuscripts left by the school of Alexandria.[16] Chapters 5-9 are studying what the Alexandrians have received from the school of Nemorarius, subsequently detailing the contributions of this school to the development of statics. Only Chapter 10 resumes the line interrupted at the end of Volume I, i.e. in the middle of the 16th century, with Guido Ubaldi and Benedetti. Tartaglia's name, which now appears for the first time (as expressly stated in the preface to Volume I, from 21 March 1905, written *after* the discovery of the statics of the Middle Ages), referred to as a plagiarist of Nemorarius, is mentioned for the merit of having broadcast in the middle of the 16th century some contributions of the 13th which otherwise would have remained completely ignored.

In conclusion, although the reference to Nemorarius was not unknown to some historians of the Middle Ages,[17] Duhem was the only historian of science to

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[14] Duhem, *Les Origines de la Statique I*, 13.

[15] R. N. D. Martin, "The Genesis of a Mediaeval Historian: Pierre Duhem and the Origins of Statics," *Annals of Science* XXXIII (1976): 121.

[16] Duhem, *Les Origines de la Statique I*, 62.

[17] Even though Jordanus Nemorarius remains unknown to the historians of physics (to Lagrange, to Mach, to Wohlwill), the historians of mathematics do mention him: Montucla and Chasles (*cf.* Martin, "The Genesis of a Mediaeval Historian," 123; Anastasios Brenner, Duhem: *Science, réalité et apparence. La relation entre philosophie et histoire dans l'oeuvre de Pierre Duhem* (Paris: Vrin, 1990), 145, note 3). Moreover, Bosmans knew the two treatises *De ponderibus* in question and anticipated that Duhem would come upon them (see Jaki, *Uneasy Genius*, 385), all

follow the thread of quotes on this author – referring to the original manuscripts and revealing texts which everyone had forgotten (but which the 'inventors' of modern science in the 17th century still knew very well) –, the only one who knew how to historically and epistemologically evaluate the things he had discovered. The result of this work was the discovery of the vast medieval discussions about the principle of virtual velocities,[18] with which the great sunken continent of medieval physics began to regain the attention of scholars: first by the discovery that the principle of virtual velocities had also been known to the medieval scholars, as a principle of the demonstration of the static equilibria, and then by other findings, suggesting that the scholasticism of the 14th century had developed a dynamics completely different from the Aristotelian one. This extraordinary event – the beginning of the discovery of the physics of the Middle Ages – can be located between the summer and winter of 1903 (as the reference to Tartaglia appears only in the April 1904 installment).[19]

The discovery of the physics of the Middle Ages was a surprise *first of all* for Duhem. He did not make this discovery because he was Catholic (as it was said, trying to reduce his discovery to an apologetic enterprise),[20] but because, against

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the discussion with Father Thirion, sometime after October 1903, which Bosmans remembers in the evocation of Duhem (Henri S.J Bosmans, "Pierre Duhem: Notice sur ses travaux relatifs à l'histoire des sciences," *Revue des questions scientifiques* 80, 30 (1921): 41).

[18] Stanley L. Jaki, "Foreword," in Pierre Duhem, *Medieval Cosmology. Theories of Infinity, Place, Time, Void, and the Plurality of Worlds*, ed. and trans. Roger Ariew (Chicago and London: The University of Chicago Press, 1985), xv.

[19] Martin dates the great discovery at the end of the autumn of 1903 (Martin, "The Genesis of a Mediaeval Historian," 120).

[20] See, for example, Guy Beaujouan, „Alexandre Koyré, l'évêque Tempier et les censures de 1277," in *Science: The Renaissance of a History: Proceedings of the International Conference Alexandre Koyré, Paris, Collège de France, 10-14 June 1986*, ed. Pietro Redondi, *History and Technology* 4, Special Issue (1987): 425:

> Vous savez tous comment, du fait de sa propre carrière scientifique et de son catholicisme militant, Pierre Duhem était idéologiquement conditionné à vouloir chercher dans la scolastique chrétienne les antécédents préparant l'éclosion de la science moderne du XVIIe siècle.

Beaujouan's statement is *factually* false, as demonstrated in R.N.D. Martin, *Pierre Duhem. Philosophy and History in the Work of a Believing Physicist* (Chicago and La Salle, Illinois: Open Court, 1991), *passim*. As shown in the famous letter to Father Bulliot dated May 21, 1911, Duhem does not make apologetics with his discoveries: he asks the Catholics to understand that the *facts* he discovered prove that the anti-Catholic and anti-Christian theses regarding the Middle Ages are false, *factually* false (the text of the letter may be found in Hélène Pierre-Duhem, *Un Savant Français: Pierre Duhem* (Paris: Librairie Plon, 1936), 158-169); closer to our

his first convictions regarding the scientific nullity of the Middle Ages, Duhem behaved like a true conscientious and honest scientist: faced with the existence of new facts, he has granted them priority to his preconceptions and revised his initial theories.[21] His remaining life (1903 to 1916) was dedicated by Duhem to the deepening of this epochal discoveries. There have resulted out of this concern two monumental works: *Études sur Léonard de Vinci* (3 volumes, 1906, 1909, 1913) and *Le Système du Monde. Histoire des doctrines cosmologiques de Platon à Copernic* (10 volumes, 1913, 1914, 1915, 1916, 1917, 1954, 1956, 1958, 1959). *Le système du monde* should have had twelve volumes and a summary of three hundred pages, which to synthetically rebuild the argument of the entire series. The last two volumes and the summary have not been written, and the tenth volume remained unfinished. Duhem died suddenly of a heart attack on September 14, 1916. He was only 55 years old.

The studies on Leonardo da Vinci were occasioned by the publication of his notebooks and are devoted to the assessment of his scientific thought's sources, as well as of the impact his theories had on the development of the modern science of nature. The first two volumes bear the subtitle *Ceux qu'il a lus et ceux qui l'ont lu* (written between 1905-1906 and 1907-1908, respectively), while the third and most voluminous (written between 1909-1912) is subtitled "Les précurseurs parisiens de Galilée" and is preceded by a preface which has the force of a manifesto:

> La science mécanique inaugurée par Galilée, par ses émules, par ses disciples, les Baliani, les Torricelli, les Descartes, les Beeckman, les Gassendi, n'est pas une création; l'intelligence moderne ne l'a pas produite de prime saut et de toutes pièces dès que la lecture d'Archimède lui eut révélé l'art d'appliquer la Géométrie aux effets naturels. L'habileté mathématique acquise dans le commerce des géomètres de l'Antiquité, Galilée et ses contemporains en ont usé pour préciser et développer une Science mécanique dont le Moyen-Âge chrétien avait posé les principes et formulé les propositions les plus essentielles. Cette Mécanique, les

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times, it has been reproduced in Jaki, *Pierre Duhem*, 235-239 (Nr. 15: "Deux chaires catholiques pour les sciences").

[21] As a faithful of the Roman Catholic Church, perhaps Duhem would have liked to believe that the church has stimulated the free research, but before the *annus mirabilis* 1903 he did not have evidence that this would have happened. Therefore, as a good scientist, he allowed the Christian in himself only the exercise of faith, accepting as *factum* only what historical knowledge allowed him to accept as philosophical truth. Thus, he stated in his studies prior to the discovery of the physics of the Middle Ages exactly the opposite of what he would have perhaps liked to believe, namely that the period of maximum social development of Christianity was also an era of total scientific sterility. Therefore the discovery of the physics of the Middle Ages was not an apologist's work.

> physiciens qui enseignaient, au XIVe siècle, à l'Université de Paris l'avaient substitué à la Dynamique d'Aristote […]. Au temps de la Renaissance, l'archaïsme superstitieux, où se complaisaient également le bel esprit des Humanistes et la routine averroïste d'une Scolastique rétrograde, repoussa cette doctrine des 'Modernes.' […] Mais à la suite des condamnations portées, en 1277, par l'évêque de Paris, Étienne Tempier, contre une foule de thèses que soutenaient 'Aristote et ceux de sa suite,' voici qu'un grand nombre se dessine, qui va libérer la pensée chrétienne du joug du Péripatétisme et du Néoplatonisme, et produire ce que l'archaïsme de la Renaissance appellera la Science des 'Modernes.' […] Cette Mécanique, à la fois céleste et terrestre, à laquelle Newton devait donner la forme que nous admirons aujourd'hui, la voici, d'ailleurs, qui, dès le XIVe siècle, tente de se constituer. […] Cette substitution de la Physique moderne à la Physique d'Aristote a résulté d'un effort de longue durée et d'extraordinaire puissance. […] Jusqu'à ces dernières années, la Science du Moyen-Âge était tenue pour inexistante.[22]

When he was writing these lines, on the 24th of May 1913, the first volume of *Le Système du Monde* had already appeared, and the next four volumes were probably already drafted[23]. This history of cosmological doctrines from Plato to Copernicus, the crowning and final mark of the discovery from the autumn of 1903, was designed to completely change the fate of specialized historical scholarship, creating a new academic discipline and setting in a sustainable and authoritative manner its further developmental milestones.[24] In these volumes

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[22] Pierre Duhem, *Études sur Léonard de Vinci. Les précurseurs parisiens de Galilée*, troisième série, 1913. (Montreux: éditions des archives contemporaines, 1984), v, vii, x, xiii.

[23] Martin, *Pierre Duhem*, 10.

[24] John E. Murdoch, a very severe critic of Duhem's thesis, acknowledges in the conclusion of an article dedicated to his contribution to the history of medieval science that

> Duhem has to a great extent set the topics for subsequent historians of late medieval science. Not only have earlier investigators, like Dijksterhuis and Michalski, followed Duhem's scenario, but the same has been true to a large extent in the case of others who have addressed the history of fourteenth-century science in general, such as Maier and Clagett. Duhem's influence in this regard is, moreover, no less evident among historians of medieval philosophy than among historians of medieval science. [...] In conclusion, then, when Dana Durand claimed that all future historians would spend most of their time 'working intensively the veins' Duhem had opened, he did not sufficiently appreciate that the lode ran well beyond the history of medieval science and penetrated well into the terrain of late medieval philosophy. And all that in spite of the continued successful criticism of the yield Duhem had derived from it.

there are comprised in their most elaborate form all the findings and interpretations which, put together, we could call the 'Pierre Duhem Thesis.'[25] I claim that there is an argument which encompasses all of Pierre Duhem's discoveries regarding the history of science and that this argument can be synthesized as a combination of several principles, sentences and conjectures forming a whole which I call the 'Pierre Duhem Thesis.'

## 3.

What is, then, the 'Pierre Duhem Thesis'? Most generally, the 'Pierre Duhem Thesis' states that the Latin Middle Ages had a significant and important (even decisive) contribution to the gradual progress of science, from Antiquity until the 17th century. Analyzed in its particular statements, the 'Pierre Duhem Thesis' can be summed up by stating several sub-theses:

(i) The sub-thesis 'The Theological Revolution.'[26] In the preface to the third part of *Le Système du monde*, significantly entitled "Le péripatétisme, les religions et la science d'observation,"[27] Duhem advances the argument that Greek science was prevented from developing and evolving beyond a certain threshold (where it was blockaded) by its philosophical and religious premises, which were neo-platonic and 'astro-biological' (the divine nature of stars, the animation of matter,

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(Murdoch, "Pierre Duhem and the History of Late Medieval Science," 299; 301-302). See also Dana B. Durand, "Nicole Oresme and the Medieval Origins of Modern Science," *Speculum* 16, 2 (1941): 167-185.

[25] What I call here the 'Duhem Thesis' has nothing to do with the 'Quine-Duhem thesis' (sometimes called the 'Duhem-Quine thesis,' the 'Duhem thesis,' or the 'D-Thesis'); the 'Duhem Thesis' I refer to is deducted directly from his writings and is not assigned to him *par méprise*, such as the 'Quine-Duhem thesis,' which, as demonstrated by Robert Ariew, is *not* related with what Duhem himself advocated (*cf.* Roger Ariew, "The Duhem Thesis," *British Journal of the Philosophy of Science* 35 (1984): 313-325).

[26] Curiously enough, the notion of the 'Theological Revolution,' although central in Duhem's argument, has never been analyzed in the specialized literature.

[27] The subject is treated in Pierre Duhem, *Le Système du Monde. Histoire des doctrines cosmologiques de Platon à Copernic*, tome IV, 1916, Nouveau tirage (Paris: Hermann, 1973), 309-320 ("La crue de l'aristotélisme," "Avant-propos," "Le péripatétisme, les religions et la science d'observation"). Anastasios Brenner underlines the importance of this section by fully reproducing it in Pierre Duhem, *L'aube du savoir. Épitomé du Système du Monde. Histoire des doctrines cosmologiques de Platon à Copernic*, ed. Anastasios Brenner (Paris: Hermann, Éditeurs des sciences et des arts, 1997), 225-236 (with a small omission: compare Duhem, *Le Système du Monde IV*, 314 to Duhem, *L'aube du savoir*, 230).

etc.).[28] This blockage could only be overcome by ensuring a 'theological revolution' as a precondition for the adoption of the Copernican theory; through the 'theological revolution' applied to the mind, the scientific mind was freed from the ontological premises of Neoplatonism and astrobiology, which allowed its opening to an ontological perspective compatible with the data of existence of the modern science of nature.[29]

A similar argument is to be found in the second part of *Le Système du Monde*, which is entitled "L'Astronomie latine au Moyen Âge" and begins with a section called "Les Pères de l'Église et la science profane."[30] Duhem brings into attention that, although it is not possible to find in the works of the Church Fathers scientific contributions comparable to those of the Greek science, their views should not be ignored because

> their teachings in Physics and Astronomy are the primal germs out of which medieval Christian cosmology will slowly and gradually develop.[31]

The Church Fathers attacked from the perspective of Christian theology the principles of Greek science which happened to be exactly those which, according to Paul Tannery,[32] contributed the most to stop the progress of ancient science and exhausted its fertility: the principle of the eternity of prime matter, the faith in the domination of stars over sublunary life, and the temporal cyclicity of the world. Duhem's conclusion is:

> En ruinant, par ses attaques, les Cosmologies du Péripatétisme, du Stoïcisme et du Néo-Platonisme, les Pères de l'Église font place nette à la Science moderne.[33]

And here, even though he does not explicitly use the formula of 'theological revolution,' one still basically speaks of a 'theological revolution,' understood by Duhem, like in the first case, as a prior mental framework able to make possible 'the reason of the believer'[34] – that is, the reason which, thus *positioned*, could modern-physically think of nature.

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[28] The term 'astrobiology' was coined by René Berthelot, *La pensée de l'Asie et l'astrobiologie* (Paris: Payot, 1938).

[29] Duhem, *Le Système du Monde IV*, 316-317.

[30] Pierre Duhem, *Le Système du Monde. Histoire des doctrines cosmologiques de Platon à Copernic*, tome II, 1914, Nouveau tirage (Paris: Hermann, 1984), 392-408; Duhem, *L'aube du savoir*, 125-138.

[31] Duhem, *Le Système du Monde II*, 407-408; Duhem, *L'aube du savoir*, 138.

[32] Paul Tannery, *Recherches sur l'histoire de l'Astronomie ancienne* (Paris: Gauthier-Villars & Fils, 1983), 280-281.

[33] Duhem, *Le Système du Monde II*, 408; Duhem, *L'aube du savoir*, 138.

[34] Duhem, *Le Système du Monde II*, 315; Duhem, *L'aube du savoir*, 231.

(ii) The sub-thesis 'The Condemnation of 1277.' Although medieval Aristotelianism was important for the maturation and professionalization of reflection in natural philosophy, the release from its philosophical premises was the second fundamental precondition for the further development of science beyond the achievements of ancient science. The second precondition was realized by what we could conventionally call 'the Condemnation of 1277,' by which the medieval mind was compelled by the exigencies of the Christian faith to think the natural world starting not from the Greek (Aristotelian) necessitarianism, as did the 13th-century scholasticism, but from the absolute power of God (*potentia Dei absoluta*). The spirit of the Condemnation is illustrated by Article 147, which condemns the opinion that it is impossible for God something suitable for nature (where the impossible did not designate the logical impossible, which was accepted, but the natural one, which was rejected). This mode of vision removed the Aristotelian obstacles in the conception of nature and in the discourse about it (it was only thus that one could admit the plurality of worlds and the existence of vacuum, which nature such as Aristotelianism understood it rejected as impossible), and favored the thought regarding the counterfactuals by the appearance and generalization of the ratiocination by 'thought experiments' (*Gedankenexperimente*).[35] For this reason, according with Duhem, the Condemnation of 1277 are one of the possible points that might date the 'birth' of the modern science of nature.[36]

(iii) The sub-thesis 'The Continuity.' After having discovered the statics of the Middle Ages (*annus mirabillis* 1903), Duhem has become convinced that not only the selection of the hypotheses on which physical theory is built is subjected to a principle of continuity (1893),[37] but also the history of science follows this principle, according to the historical observation that science progresses gradually and continuously, without rupture or revolution:

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[35] Edward Grant, „The Effect of the Condemnation of 1277," in *The Cambridge History of Later Medieval Philosophy. From the Rediscovery of Aristotle to the Desintegration of Scholasticism 1100-1600*, eds. Norman Kretzmann, Antony Kenny, and Jan Pinborg (Cambridge: Cambridge University Press, 1984), 537-539.

[36] Pierre Duhem, *Études sur Léonard de Vinci. Ceux qu'il a lus et ceux qui l'ont lu*, deuxième série, 1909 (Montreux: éditions des archives contemporaines, 1984), 408-423; Duhem, *Études sur Léonard de Vinci. Les précurseurs parisiens de Galilée*, vii; the complete discussion of the Condemnation's consequences is in Pierre Duhem, *Le Système du Monde. Histoire des doctrines cosmologiques de Platon à Copernic*, tome VI, Nouveau tirage (Paris: Hermann, 1984), *passim*.

[37] Pierre Duhem, "L'école anglaise et les théories physiques," *Revue des Questions Scientifiques* 34 (1983): 345-378. Reprinted in Pierre Duhem, *Prémices philosophiques*, ed. Stanley L. Jaki (Leiden, New York etc.: E.J. Brill, 1987), 113-146.

> La science mécanique et physique dont s'enorgueillissent à bon droit les temps modernes découle, par une suite ininterrompue de perfectionnements à peine sensibles, des doctrines professées au sein des écoles du moyen âge ; les prétendues révolutions intellectuelles n'ont été, le plus souvent, que des évolutions lentes et longuement préparées ; les soi-disant renaissances que des réactions fréquemment injustes et stériles ; le respect de la tradition est une condition essentielle du progrès scientifique.[38]

The sub-thesis of the continuity has therefore a double aspect: an epistemological one, when it is applied to science; a historical one, when it is applied to the history of science.

(iv) The sub-thesis 'Galileo's forerrunners of the 14th century' (or 'Duhem's canonical list'). Within the overall framework of the thesis of continuity, Duhem argues the exceptional importance of the contributions belonging to the scholastics of the 14th century, primarily those who taught at the University of Paris (Jean Buridan, Nicole Oresme, Albert de Saxonie, Themon Judaeus, Marsilius din Inghen), and then of those who were associated with Merton College, Oxford (Thomas Bradwardine, Roger Swineshead, William Heytesbury, Richard Kilvington, John Dumbleton).[39] These contributions form 'Duhem's canonical list' (or, as John E. Murdoch named it, 'Duhem's canonic roster of fourteenth-century accomplishments').[40] The scientific achievements of the 14th century, which

[38] Duhem, *Les Origines de la Statique I*, iv (the Preface is dated March 21, 1905).

[39] The different appraisals of the two schools, the Paris and the Oxonian ones, have two explanations: firstly, a sort of anti-English preconception and a French nationalism, argued by the taste for the elegant ratiocination (*l'esprit de finesse*) and the repulsion for (the excess of) logicism; secondly, there is an epistemological limit of understanding (see Murdoch, "Pierre Duhem and the History of Late Medieval Science," 262-270): according to Murdoch, Duhem did not understand the exceptional epistemological value of the 'sophismata' exercises, which he treated as "cette acrobatie logique [qui] était le *sport* en vogue à l'École d'Oxford" (Pierre Duhem, *Le Système du Monde. Histoire des doctrines cosmologiques de Platon à Copernic*, tome VII (Paris: Hermann, 1956), 619): the type of ratiocination developed and refined in order to solve the *sophismata*, named by Murdoch '*secundum imaginationem* reasoning,' was in his opinion the fundamental scientific novelty of the 14th century, a fact completely unnoticed by Duhem (Murdoch, 291-292). Murdoch quotes two important authors to support his point of view (Murdoch, 294, note 192): „Man möchtet beinahe sagen: Bradwardine wollte die Principia mathematica philosophie naturalis seines Jahrhunderts schreiben" (Anneliese Maier, *Die Vorläufer Galileis im 14. Jahrhundert. Studien zur Naturphilosophie der Spätscholastik*, Band I (Roma: Edizioni di Storia e Letteratura, 1949), 86, note 10); „[Bradwardine's *Tractatus de proportionibus*] should be seen as at least a partial attempt to create a new mathematical science of motion" (Andrew George Molland, „Medieval Ideas of Scientific Progress," *Journal of History of Ideas* 39 (1978): 572).

[40] Murdoch, "Pierre Duhem and the History of Late Medieval Science," 258.

according to Duhem show the debt of Galileo and Descartes to the physics of the Middle Ages, would run as it follows (I pursue the list established by Murdoch): the correct explanation of the reason for which the motion of a projectile continues after he is not moved by an agent; the correct explanation of the uniformly accelerated motion in free fall; the development of the theory regarding the 'latitude of forms;' the postulation of the possibility of existence of infinite and infinitesimal quantities, of space vacuum, of the rotation of the earth, and of the plurality of worlds; the crystallization of new and clear concepts of motion, place and time, which were non-Aristotelian.

(v) The sub-thesis 'The Domingo de Soto connection.' Duhem discovered, in a treatise on Aristotle's physics written by Domingo de Soto and published in 1545, that in the scholastic tradition to which the author pertained the following theorems were well known: the free fall of bodies is a motion accelerated with respect to time; the motion of a body thrown vertically upwards is uniformly slowed; in order to calculate the space covered in both movements, one must apply the demonstrations developed by Nicole Oresme for the *uniformiter difformis* movement (or, which is the same thing, the mean speed theorem developed by the Mertonians).[41] "Ces lois, d'ailleurs," says Duhem,

> il n'en revendique pas l'invention; bien plutôt, il semble les donner comme vérités communément reçues; sans doute, elles étaient couramment admises par les maîtres dont, à Paris, Soto a suivi les leçons. Ainsi, de Guillaume d'Ockam à Dominique Soto, voyons-nous les physiciens de l'École parisienne poser tous les fondements de la Mécanique que développeront Galilée, ses contemporains et ses disciples.[42]

Historiography took on this thesis of Duhem under the form of two research programs designed to solve the 'two de Soto enigmas.' Koyré is the first who, in an article in the late 50s, referred to this Duhem thesis as the 'enigma of Domingo de Soto.' Here we have it in his wording:

> [h]ow did [Domingo de] Soto arrive to give the movement of falling as an example of uniformly accelerated motion and even to describe as something self-understood this transposition of a purely mathematical conception into physical reality, although the mathematicians and logicians of the schools in Paris and Oxford have not realized this transposition?[43]

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[41] Duhem, *Études sur Léonard de Vinci. Les précurseurs parisiens de Galilée*, 555-562. Duhem only refers to Oresme (561) and mentions Bradwardine in passing (557).

[42] Duhem, *Études sur Léonard de Vinci. Les précurseurs parisiens de Galilée*, xi.

[43] Alexandre Koyré, "Fizica," in *Istoria generală a științei*, vol. II, ed. René Taton (București: Editura Științifică, 1971), 106. Koyré's question departs from the assumption that Sotto, while

The second 'de Soto enigma' is whether and how Galileo came to know Domingo de Soto's theorems (Duhem's conjecture being that the missing link between Galileo and the 14th-century physics is Domingo de Soto).[44] The answer to the second enigma and the acceptance of the truth of the three theorems attributed by Duhem to Domingo de Soto represent the 'Domingo de Soto connection.'

## 4.

While contemplating the nature of the five special sub-theses which compose together the general 'Duhem Thesis,' two implicit observations emerge.

The first observation is that, in relation to what we now call "the birth of the modern science of nature in the 17th century," sub-theses (i) and (ii) are of one type, while sub-theses (iv) and (v) are of another. The former have the structure of transcendental reasoning, which has the form: "in order for 'X' to be possible, the $\{y_n\}$ conditions must take place;" the latter have the structure of causal reasoning, having the form: "the existence of 'Y' produces the existence of 'X.'" Neither the 'theological revolution,' nor the 'Condemnation of 1277' do not represent *effective causes* of the emergence of the modern science of nature. We could call them transcendental 'conditionalities,' in order to decidedly distinguish them from the effective causes, which alone are 'causal.' The transcendental 'conditionalities' create the framework which makes possible, under certain conditions, the appearance of something, but do not necessarily or directly actuate its appearance. To make possible does not effectively mean to be a cause, but rather to open a field of possibilities. If this 'field of possibilities' is not opened, the occurrence of the causes which could theoretically be effective remains without effect. The effectiveness of the effective causes is conditioned by the existence of a 'field of possibilities;' and the 'field of possibilities' is opened only by the activation of some transcendental 'conditionalities.'

The second observation is that the two aspects of sub-thesis (iii) ('the thesis of continuity'), the epistemological-methodological and the historical one, are fundamentally inseparable. On the one hand, the thesis of continuity is a

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not being 'a great philosopher' and his physics being 'traditional and eclectic,' surprisingly fell on an innovative and correct solution to the problem of falling and vertical projection of bodies; in the same time, Koyré wondered, "how come that from him to Galilei [Sotto's solution] was not adopted by anyone?"

[44] This second enigma was finally solved by William A. Wallace, who confirmed Duhem entirely (William A. Wallace, "The Enigma of Domingo de Soto: *Uniformiter difformis* and Falling Bodies in Late Medieval Physics," *Isis* 59, 4 (1964): 384-401).

methodological principle of prescriptive nature, deeply rooted in Duhem's conception of physical theory:

> The thesis of historical continuity is one part of his epistemology with which Duhem attempts to resolve the problem of the choice of hypotheses.[45]

The methodological principle of continuity saves from mutual incoherence the particular theories of physics and makes them advance in their historical evolution towards a 'natural classification' of things which will reflect the ontological truth of the final theory.[46] It is exactly the methodological aspect of the thesis of historical continuity that makes Duhem's epistemology to be not conventionalist or instrumentalist, but realistic in a special way ('convergent or motivational realism').[47]

On the other hand, when referring to the history of science, the thesis of continuity has a contingent aspect, as Ariew and Barker noticed:

> the thesis is most compelling as a contingent claim about history of science: continuity just happens to be the case; it could have been otherwise.[48]

Indeed, Duhem reached the thesis of 'continuity' *a posteriori*, as a result of the discovery he had made, and not *a priori*, as a result of the identification of a

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[45] Roberto Maiocchi, "Pierre Duhem's *Aim and Structure of Physical Theory*: A Book Against Conventionalism," *Synthese* 83, 3 (1990): 395. Maiocchi's thesis on Duhem was extensively developed in his *Chimica e filosofie. Scienza, epistemologia, storia e religione nell' opera di Piere Duhem* (Firenze: La Nuova Italia Editrice, 1985).

[46] Duhem, *Prémices philosophiques*, 132-138: at pp. 134-135, Duhem speaks of the fact that the methodological principle of continuity eliminates the incoherence of the theories based on irreconcilable hypotheses; and at pp. 136-138 he speaks of the natural classification and of the perfection of the ideal theory. For natural classification, see also: Pierre Duhem, *La théorie physique: son objet, sa structure. Deuxième édition revue et augmentée* (Paris: Librairie philosophique J. Vrin), 460. In recent literature, Sonia Maria Dion argued that

> [t]he association of natural classification to the thesis of historical continuity [is] an essential condition to the possibility of assigning a goal to the evolution of physical theory.

(Sonia Maria Dion,. "Pierre Duhem and the Inconsistency Between Instrumentalism and Natural Classification," *Studies in History and Philosophy of Science* 44 (2013): 12–19).

[47] The phrase 'motivational realism' belongs to Karen Merikangas Darling (Karen Merikangas Darling, "Motivational Realism: The Natural Classification for Pierre Duhem," *Philosophy of Science* 70, 5 (2003): 1125–1136); see also Roger Ariew, "Pierre Duhem," in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Fall 2014 Edition. http://plato.stanford.edu/archives/fall2014/entries/duhem/, § 2.2.

[48] Roger Ariew and Peter Barker, "Duhem and Continuity in the History of Science," *Revue internationalle de philosophie* 46, 182 (1992): 323.

philosophical principle that lies beyond experience and is independent of it. As such, from a historical perspective, we could say that the thesis of continuity does not function with Duhem as a philosophical or teleological principle, but as a description.

At the same time, we must note that the methodological prescription imposed on particular theories *in epistemology* has necessary consequences on the evolution of theories towards a 'natural classification' (the final theory) *in history*. In fact, the *proper* functioning of epistemology creates a *certain* history and no other. That is why I said that the two aspects of sub-thesis (iii), the epistemological-methodological and the historical ones, are non-separable. And for this reason I think that the real challenge of the thesis of continuity formulated by Duhem is not in its understanding as a historical-contingent statement of the type "it may have also been different, even though it actually happened so" (the Ariew and Barker interpretation cited above), but as a strong statement of the type „it happened so, because it could only happen thus" (the Jaki thesis).[49] Formulated briefly, the Duhem-Jaki thesis (as Eric V. Snow names it)[50] argues that "the world view of Christianity was absolutely necessary for the rise of modern science."[51]

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[49] The main books in which Stanley L. Jaki dealt with the conditions necessary for the birth of the modern science of nature, analyzing both the situations when science could not appear, although its birth seemed imminent (what he calls 'the 'stillbirth' of science'), as well as the situations when science could appear are: *Science and Creation. From Eternal Cycles to an Oscillating Universe* (Edinburgh: Scottish Academic Press, 1974); *The Road of Science and the Ways to God. The Gifford Lectures 1975 and 1976* (Chicago: University of Chicago Press; Edinburgh: Scottish Academic Press, 1978); *The Origin of Science and the Science of its Origins* (Edinburgh: Scottish Academic Press; South Bend, Ind.: Gateway Editions, 1978); *The Savior of Science* (Washington, D.C.: Regnery Gateway, 1988); *Christ and Science* (Royal Oak, Michigan: Real View Books, 2000).

[50] Eric V. Snow, „Christianity: A Cause of Modern Science?" *Acts & Facts* 27, 4 (1998). https://archive.org/details/IsChristianityACauseOfScienceTheDuhem-jakiAndMertonTheses Explained. Accessed on February 17, 2015.

[51] That does not mean, as François Mentré already warned shortly after the death of Duhem, that science is a 'Christian product:' "Duhem does not say that modern science is a product of Christianity; he rather says that Christianity has been an auxiliary, and an indispensable one, to the scientific development" (François Mentré, "Pierre Duhem: Historien et Philosophe," *Revue des Jeunes* 15 (1917): 139, note). Stanley Jaki, who quotes this warning, wholly aproves it: "This is an all-important point, often forgotten in sympathetic portrayals of the role of Christianity in the rise of science" (Jaki, *Uneasy Genius*, 231-232, note 36).

## 5.

These two observations allow us to more clearly evaluate the complex structure of what I call the 'Pierre Duhem Thesis.' 'The Duhem thesis' is, in my opinion, the central argument of Pierre Duhem's work as historian of science. The 'Pierre Duhem thesis' can not be reduced to any of its sub-theses. The five sub-theses are not independent, they do not work separately and do not relate to reality separately (but only as a system). Their diverse theoretical status (some have a transcendental character, while some other causal, factual, or descriptive ones) makes the way in which they relate each and all together to historical reality to be particularly complex. Therefore, the factual assessment of the sub-theses, as well as the historical judgment on the value of the overall argument advanced by Duhem must, I think, be both balanced and prudent, and the identification of the direct causalities must always be combined with the understanding of the role of transcendental 'conditionalities.'

The distinction between transcendental 'conditionalities' and effective causes is essential to understand the finesse of Duhem's argument. For example, Duhem never claimed that the modern science of nature is due to the Condemnation of 1277.[52] He referred to the Condemnation as to some transcendental 'conditionalities' which opened for the physics of the 14th century a 'field of possibilities,' just as the 'Theological Revolution' functioned, in relation to the 'astrobiology' of the Greeks, as an inhibitor of ontological representations, opening by these very inhibitions the horizon of some other representations, more capable than their antecessors to make system with principles favorable to the

[52] This is how Alexandre Koyré chose to read Duhem's statements, and his interpretation became authoritative, *y compris* among the historians of the Middle Ages (even though he was not one): Alexandre Koyré, "Le Vide et l'espace infini au XIVe siècle," *Archives d'histoire doctrinale et littéraire du Moyen Âge* XVIII (1949), reprinted in Alexandre Koyré, *Études d'histoire de la pensée philosophique* (Paris: Gallimard, 1971), 37-45); for the effect on the historians of the Middle Ages, see the influence of this article on Marshall Clagett: "I was […] impressed by his beautiful paper "Le Vide et l'espace infini au XIVe siècle," and particularly by the doubt it cast on the easy generalizations of Pierre Duhem." ("Commemoration," *Isis* 57 (1966), quoted in I. Bernard Cohen, „Alexandre Koyré in America: Some Personal Reminiscences," in *Science: The Renaissance of a History*, ed. Redondi, 60) — Clagett was mainly impressed by the way Koyré amended Duhem! It was precisely this malicious readings, which positively impressed Clagett, that the later historians of the Middle Ages would reveal as historically false (see Beaujouan, "Alexandre Koyré," 425-429; and Edward Grant, "The Condemnation of 1277. God's Absolute Power, and Physical Thought in the Late Middle Ages," *Viator* 10 (1979): 211-244; for an overall assessment, see Edward Grant, *The Foundations of Modern Science in the Middle Ages. Their Religious, Institutional, and Intellectual Contexts* (Cambridge: Cambridge University Press, 1996, 70-126).

development of a mathematical science of nature, overcoming thus the impasse of the Greek science. At the same time, the sub-thesis of continuity must be understood both in its double epistemological-normative and historical-descriptive aspect (see discussion above), as well as in terms of the complex historical causalities: a fine interaction between transcendental 'conditionalities' and effective causes.

Given the complexity of the historical argument formulated by Duhem (which I named the 'Pierre Duhem Thesis'), the legacy of his findings was reportedly extremely complex. Duhem established a number of facts (the physics of the Middle Ages, the "canonical roster" etc.), proposed several causal links (the Domingo de Soto conjecture, implying the Collegio Romano connection etc.), argued some historical 'conditionalities' of transcendental type (the Theological Revolution, the Condemnation of 1277), and advanced the great historical hypothesis of continuity (the Parisian precursors of Galileo).

Pierre Duhem's findings were epoch-making. They revealed a sunken and completely forgotten continent (the physics of the Middle Ages), put on the map the topic of the links between the modern and the medieval worlds (which seemed to be resolved by the extremist views of Petrarch in the 14th century and Voltaire in the 18th), restructured completely the contents of the history of science and of the history of medieval philosophy, and gave impetus to a deeper institutional transformation in the teaching of history and philosophy of science. But the fact that the physics of the Middle Ages existed, and that the emergence of the modern science of nature, whatever its relation to it, cannot be imagined without it, has remained what Jean-François Revel called 'une connaissance inutile.' By tracing the complex and complicated manner in which this formidable discovery was only partially integrated into the dominant historiography of science, and the failure of our general culture to integrate it one can understand that the reasons of this resistance to the 'Pierre Duhem Thesis' are deeply rooted into the moral and philosophical settings of our modern civilization. But this is a story to be told in another article.[53, 54]

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[53] See Horia-Roman Patapievici, "The Discovery of the Physics of the Middle Ages by Pierre Duhem. The Fate and Meaning of a Truth," forthcoming in *Meaning and Truth*, eds. Sorin Costreie and Mircea Dumitru (București: Pro Universitaria, 2015).

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# DISCUSSION NOTES/ DEBATE

# EASY KNOWLEDGE MAKES NO DIFFERENCE: REPLY TO WIELENBERG[1]

Juan COMESAÑA and Carolina SARTORIO

ABSTRACT: We have recently proposed a diagnosis of what goes wrong in cases of 'easy-knowledge.' Erik Wielenberg argues that there are cases of easy knowledge that our proposal cannot handle. In this note we reply to Wielenberg, arguing that our proposal does indeed handle his cases.

KEYWORDS: easy knowledge, evidential support, reliability, Erik Wielenberg

We have recently proposed a diagnosis of what goes wrong in cases of 'easy-knowledge.'[2] Erik Wielenberg argues that there are cases of easy knowledge that our proposal cannot handle.[3] In this note we reply to Wielenberg, arguing that our proposal does indeed handle his cases.

We claim that cases of easy knowledge violate the following constraint on evidential support:

> **Epistemic DM2**: E evidentially supports P (relative to a background of evidence B) only if it's not the case that not-E evidentially supports P (relative to B).

Wielenberg presents one of his cases as follows:[4]

> Suppose that Roxanne has no idea whether her car's fuel gauge is reliable. She checks the fuel gauge and reasons as follows (where 'X' indicates some precise level of fuel in the tank – e.g., completely full, one-half full, etc.):
>
> **Reasoning C**
>
> (4) The gas gauge indicates X.

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[1] Thanks to Eric Wielenberg for his note and for comments on drafts of this note. Thanks also to the editors of *Logos and Episteme* for the opportunity to reply.

[2] Juan Comesaña and Carolina Sartorio, "Difference-Making in Epistemology" *Noûs* 84, 2 (2014): 368-87. For further relevant discussion, see also Juan Comesaña, "Reply to Prior," in *Contemporary Debates in Epistemology*, 2nd edition, eds. Matthias Steup, John Turri, and Ernest Sosa (Oxford: Wiley-Blackwell, 2014), 239-243.

[3] Erik Wielenberg, "Difference-Making and Easy Knowledge: Reply to Comesaña and Sartorio," *Logos and Episteme* VI, 1 (2015): 141-146.

[4] Completely analogous remarks apply to Wielenberg's other case.

So, (5) the gas tank is X.

Therefore, (6) on this occasion, the reading on the gas gauge corresponded exactly to the amount of gas in the tank.

As before, Roxanne can use the same sort of reasoning on multiple occasions to build a solid inductive case for the reliability of the gas gauge. So, suppose she draws on multiple instances of reasoning C to arrive at:

(7) The gas gauge is very reliable – it's disposed to indicate the level of fuel in the tank with a high degree of accuracy.[5]

According to Wielenberg, this is a case of easy knowledge that does not violate **Epistemic DM2**. This is because "the conjunction of not-(4) and not-(5) does not imply (6)."[6] From the fact that the gauge does not indicate X and that the tank is not X Roxanne cannot conclude that the reading on the gauge corresponds exactly to the amount of gas on the tank – only that the gauge did not err this time by reading X while the tank is not X.

We agree that the conjunction of not-(4) and not-(5) does not imply (6) – but, nevertheless, we shall argue that **Reasoning C** is not a counterexample to **Epistemic DM2**.

Let us start by being more precise about Roxanne's inference in **Reasoning C**. Let '$Gx$' be the proposition that the gas gauge reads X and '$Tx$' be the proposition that the tank is X. (4) and (5) then are, respectively, just '$Gx$' and '$Tx$'. But how should we understand (6) and (7)? That the reading of the gauge corresponds exactly to the amount of gas in the tank is a disjunction of conjunctions: either the gauge reads full and the tank is full, or the gauge reads one-half and the tank is one-half full, etc. Remember that, in Wielenberg's presentation, '$x$' is functioning not as a variable but as corresponding to "some precise level of fuel in the tank." Let us suppose that the gas gauge can indicate readings between $x$ and $x_n$, for some finite $n$. Then (6) should be read as:

(6*): Either $Gx$ and $Tx$, or … , or $Gx_n$ and $Tx_n$.

Notice that (4) and (5) support (6*) only because they support one of the disjuncts:

(6.1): $Gx$ and $Tx$.

[5] Wielenberg, "Difference-Making and Easy Knowledge," 143-144.

[6] Wielenberg, "Difference-Making and Easy Knowledge," 144.

What about (7)? What is it for a gauge to accurately indicate the level of fuel in the tank? It is for the tank to be full if the gauge reads full, half-full if the gauge reads half-full, etc. So, to a first approximation, (7) should be read along these lines:

(7*) For all x, if the gauge reads x, then the tank is x.

Wielenberg incorporates reliability considerations into the *content* of (7) itself – but, more plausible, what is reliable is the *inference* from repeated instances of (6*) to (7*) – after verifying (6*) over and over, Roxanne becomes more and more confident of (7*).

But perhaps repeated instances of (6*) justify Roxanne in drawing a stronger inference – not only does the gas gauge happen to correctly indicate the content of the tank, but it does so in a modally robust way. If so, then perhaps we should reformulate (7*) as follows:

(7**) For all x, if the gauge were to read x, then the tank would be x.

Consider now how to apply **Epistemic DM2** to **Reasoning C**. We start with the negation of (4), which supports the negation of (5) provided that (4) supports (5):

not-(4): not-G**x**

not-(5): not-T**x**

Now, Wielenberg is correct that we cannot get to (6*) from not-(4) and not-(5). But getting to (6*) from (4) and (5) is not an instance of easy knowledge – or, at least, it is not (6*) that almost everyone finds objectionable (a bit more on this below). What almost everyone finds objectionable is, rather, the inference to (7*) and (7**). And notice that, whereas not-(4) and not-(5) don't entail (6*), they do support (7*) and (7**). For not-(4) entails:

(8): not-(G**x** and not-T**x**)

That is to say: from the fact that the gauge does not read, for instance, one-half, it follows that it is not the case that both the gauge reads one-half but the tank is not one-half. In other words, from the fact that the gauge does not read one-half it follows that either it does not read one-half or the tank is one-half. In still other words, the following conditional (read as a material conditional) follows from not-(4):

(8*) If G**x**, then T**x**

Roxanne can now rely on multiple instances of the reasoning from not-(4) to (8*) to conclude with a high degree of confidence, just as before:

(7*) For all **x**, if the gauge reads **x**, then the tank is **x**; and

(7**) For all x, if the gauge were to read x, then the tank would be x.

So, not-(4) supports (7*) and (7**) if (4) does. After all, repeated instances of (8*) support (7*) and (7**).[7] So, if (4) supports (7*) and (7**), then not-(4) supports them as well. Therefore, **Epistemic DM2** does block the move from (4) to (7*) and (7**), and so does explain why there is no easy knowledge in Wielenberg's case.

There is a residual question: what about the move from (4) to (6*)? Isn't that an inference that should also be banned? On this question, we wish to make two points. First, notice that (6*) is entailed by (6.1), and that (6.1) follows from (4) is barely more than the statement of the views that allow for easy knowledge. So (6*) is not, as we remarked before, what almost everyone finds objectionable about those views (nor does Wielenberg claim that it is). The objection is that, once we get to (6*), the move to (7*) and (7**) cannot be stopped, and it is those further inferences that are objectionable. Our view explains why those further inferences are objectionable, and so explains what is wrong with easy knowledge. Second, notice that (6*) entails (8*). So, given a proper closure principle, (4) supports (6*) only if (4) supports (8*). Therefore, modulo that closure principle, **Epistemic DM2** entails that (4) does not support (6*). Some philosophers might prefer to give up the corresponding closure principle before giving up the claim that (4) supports (6*). **Epistemic DM2** is consistent with that position as well.

In sum, **Epistemic DM2** can handle Wielenberg's case.

[7] (7*) and (7**) entail (8*). Therefore, one way in which (7*) and (7**) could be false is for (8*) to be false. Given that the falsity of (8*) would refute (7*) and (7**), its truth supports them. Indeed, under standard assumptions, a probabilistic construal of the evidential support relation *guarantees* that (8*) supports (7*) and (7**). As in our previous paper, we do not assume that this probabilistic construal is correct in the details, but we do believe that it gives the right result in this case. This is compatible, of course, with the claim that (6*) also supports (7*) and (7**), and indeed compatible also with the claim that (6*) supports those propositions more than (8*) does.

# ON INFERENTIALLY REMEMBERING THAT *P*

Andrew NAYLOR

ABSTRACT: Most of our memories are inferential, so says Sven Bernecker in *Memory: A Philosophical Study*. I show that his account of inferentially remembering that *p* is too strong. A revision of the account that avoids the difficulty is proposed. Since inferential memory that *p* is memory that *q* (a proposition distinct from *p*) with an admixture of inference from one's memory that *q* and a true thought one has that *r*, its analysis presupposes an adequate account of the (presumably non-inferential) memory that *q*. Bernecker's account of non-inferentially remembering-that is shown to be inadequate. A remedy lies in strengthening the account by requiring the rememberer to have had prima facie justification to believe that *q*, any defeaters of which were misleading.

KEYWORDS: inferential memory, epistemic justification, inference, memory, Sven Bernecker

According to Sven Bernecker in his recent book on memory,[1] most of our memories are inferential: they are causally based on (conscious or unconscious) inferential reasoning. Inferential memories deserve philosophical attention in light of evidence from cognitive psychology that remembering is often a constructive process in which inferential reasoning plays an important part. Although Bernecker devotes most of his book to memories that are non-inferential, when he does turn to inferential memories, he sets forth an adaptation of the following account tentatively given by Arnold Cusmariu:

> Where *p*, *q*, and *r* are logically inequivalent propositions, *S* remembers impurely that *p* iff (i) *S* remembers that *q* & (ii) *S* knows now that *r* & (iii) *S* knows now that *p* inferentially from (i) and (ii), & (iv) the conjunction of *q* and *r* entails but is not entailed by *p*.[2]

Because Bernecker is opposed to epistemic theories of memory, according to which one remembers that *p* only if one knows and/or justifiedly believes that *p*, he modifies Cusmariu's account as follows:

> [W]here *p*, *q*, and *r* are logically inequivalent propositions, *S* [at $t_2$] inferentially remembers that *p* only if: ... (i) *S* remembers at $t_2$ that *q* & (ii) *S* comes to truly

[1] Sven Bernecker, *Memory: A Philosophical Study* (Oxford: Oxford University Press, 2010), 25.
[2] Arnold Cusmariu, "A Definition of Impure Memory," *Philosophical Studies* 38 (1980): 307.

> think at $t_2$ that $r$ & (iii) $S$ comes to truly think at $t_2$ that $p$ inferentially from (i) and (ii), & (iv) the conjunction of $q$ and $r$ entails but is not entailed by $p$.[3]

The account is meant to apply, in the first instance, to cases of what Malcolm labels 'impure memory', where, for example, $S$ at $t_1$ sees a bird but does not then know that it is a cardinal; later, at $t_2$, $S$ remembers from $t_1$ that he saw a bird having a certain appearance, learns that birds with that appearance are cardinals, and thereupon realizes that he saw a cardinal. If one says "*S remembers* that he saw a cardinal," this is elliptical for "$S$ remembers that he saw a bird having a certain appearance *and* now he truly thinks that it was a cardinal."[4]

Condition (iv) exposes Bernecker's account to a counterexample that shows the account to be too strong. Let conditions (i), (ii) and (iii) be met as follows. At $t_1$ Judy sees a skunk through an open window, but because it is twilight she comes to believe only that she sees a small animal, either a cat or a skunk. Shortly thereafter, at $t_2$, with the animal no longer in view, she remembers that

> ($q$) either she saw a cat outside or she saw a skunk outside.

Then, catching a whiff of a skunk, she comes to truly think that

> ($r$) there was a skunk outside.

Thereupon she comes to truly think, inferentially from her memory that $q$ and her thought that $r$, that

> ($p$) she saw a skunk outside.

(Her inference here is abductive: it is an inference to the best explanation from her memory that $q$ and her true thought that $r$ to her true thought that $p$.) The example, I take it, is an instance of Judy's inferentially remembering that ($p$) she saw a skunk outside. However, Bernecker's condition (iv), that the conjunction of $q$ and $r$ entails but is not entailed by $p$, is not met – first because while (in the situation described) the conjunction of $q$ and $r$ provides good reason to think that $p$, it does not entail $p$, since it is remotely possible that the skunk she smelled was not the animal she saw; and second because $p$ *does* entail the conjunction of $q$ and $r$, since $p$ entails $r$ as well as the disjunctive proposition $q$ .

Bernecker's condition (iv) may be emended – to allow $S$ to inferentially remember that $p$ in the case about Judy and, more generally, to accommodate relations of support in addition to entailment – as follows:

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[3] Bernecker, *Memory*, 96.

[4] Norman Malcolm, "A Definition of Factual Memory," in his *Knowledge and Certainty: Essays and Lectures* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1963), 223-224.

(iv') the conjunction of *q* and *r* (but neither *q* nor *r* alone) entails *p*, or provides inductive or abductive support for *p*.

This is an important emendation to Bernecker's account because accounts of memory retrieval as a reconstructive, inferential process typically speak of processes such as pulling together "bits and pieces of information from various sources,"[5] or "the filling in of a pattern on the basis of particular (perhaps partial or distorted) input,"[6] or the memory system making "its best guess as to what [a] scene must have looked like,"[7] all of which are closer to abductive inference than to the type of simple deductive inference that occurs in Malcolm's case about the cardinal.

Inferential memory that *p* is memory that *q* (a proposition distinct from *p*) with an admixture of inference from one's memory that *q* and a true thought one has that *r*. But what about the memory that *q*? Is it inferential or non-inferential? While there may be radical constructivist views which hold that all remembering is inferential, that is not Bernecker's view since all but a few pages of his book deal with non-inferential remembering. So let's look at what Bernecker says about non-inferential remembering. For present purposes, what Bernecker requires for *S* at $t_2$ to non-inferentially remember that *p* amounts to the following:

(Non-Inf) *S* at $t_2$ has a representation that *p* (*p* being a true proposition) which representation is memory-connected to a sufficiently similar representation that $p^*$ which S had at $t_1$.[8]

($p^*$ and *p* are sufficiently similar just in case $p^*$ relevantly entails *p*. Bernecker's example: *S* at $t_1$ believes that ($p^*$) Caesar was assassinated, but at $t_2$ remembers only that (*p*) Caesar died of unnatural causes; because *p* is relevantly entailed by $p^*$, *S's* state at $t_2$ counts as remembering that *p*, provided condition (Non-Inf) as a whole is satisfied.[9]) But, according to Bernecker, *S* need not, either at $t_2$ or at $t_1$, justifiedly believe or have justifiedly believed (even prima facie) that *p* or that $p^*$, or have or have had any belief at all that *p* or that $p^*$.[10]

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[5] Daniel L. Schachter and Donna Rose Addis, "The Cognitive Neuroscience of Constructive Memory: Remembering the Past and Imagining the Future," *Philosophical Transactions of the Royal Society B* 362 (2007): 773.

[6] John Sutton, "Memory," in *The Stanford Encyclopedia of Philosophy* (Winter 2012 Edition), ed. Edward N. Zalta, http://plato.stanford.edu/archives/win2012/entries/memory/: 28.

[7] Kourken Michaelian, "The Information Effect: Constructive Memory, Testimony, and Epistemic Luck," *Synthese* 190 (2013): 2444.

[8] See Bernecker, *Memory*, 34–42.

[9] Bernecker, *Memory*, 222.

[10] See Bernecker, *Memory*, 71–96.

A variation on the case about Judy points to a shortcoming in Bernecker's account of non-inferentially remembering that *p*. Just when (at $t_1$) a skunk is passing by his window Joe has a veridical hallucination as of just such a skunk passing by – in other words, Joe has a hallucination that just happens to match what he would otherwise see looking out his window – whereupon he comes to believe that ($p^*$) a skunk passed by. Joe forms this belief despite his knowing that he had ingested a strong hallucinogen and that moments earlier it had seemed to him that an ostrich and then a cow and then a lion had passed by. Joe's true belief that he had ingested a strong hallucinogen is a non-misleading defeater of his prima facie justification for believing that a skunk passed by. Nevertheless, Joe goes on believing that a skunk passed by. Later, at $t_2$, Joe has a belief, suitably memory-connected to his belief at $t_1$ (the time at which he hallucinated), that (*p*) a skunk passed by. Bernecker's requirement for non-inferentially remembering that p – (Non-Inf) above – is satisfied. Yet it is hardly the case that Joe *remembers that* a skunk passed by. If I am right about this then Bernecker's account of non-inferentially remembering that *p* is inadequate as it stands.

What needs to be added to (Non-Inf), it seems to me, is a further requirement that *S* at $t_1$ had prima facie justification to believe that $p^*$. Is it necessary for such justification to have been undefeated? If so, this would explain Joe's failure at t2 to remember that (*p*) a skunk passed by, since there was a non-misleading defeater of his justification for believing that $p^*$. Such a requirement, however, would be too strong. For *S* may well remember that *p* in certain cases where *S's* prima facie justification to believe that $p^*$ was defeated, provided that all such defeaters were misleading. Suppose, in contrast to Joe, that at $t_1$ Jane falsely believed that she had ingested a strong hallucinogen; suppose too that she actually saw that ($p^*$) a skunk passed by, and that she believed that this was so despite her belief that she had ingested the hallucinogen. If, at $t_2$, by which time she has forgotten about the hallucinogen, she believes that (*p*) a skunk passed by on the basis of what she saw at $t_1$, we allow that she *remembers* that (*p*) a skunk passed by. The called-for addition to (Non-Inf) is:

> *S* at $t_1$ had prima facie justification to believe that $p^*$, and any defeaters of such justification were misleading.[11]

With this requirement added, (Non-Inf) is strong enough to rule out Joe's case as an instance of remembering that p without also ruling out Jane's case.

[11] Andrew Naylor, "Remembering without Knowing – Not without Justification," *Philosophical Studies* 49 (1986): 304.

Such a requirement, in turn, places the following constraint on Bernecker's account of inferential memory: insofar as *S* at $t_2$ inferentially *remembers* that *p*, *S* at $t_1$ must have had prima facie justification to believe at least those components of $q^*$ that entail the proposition that *q* which condition (i) says *S* remembers at $t_2$, and it must be that any defeaters of such justification were misleading. (If *S's* memory that *q* is itself inferential, this same constraint applies to *S's* inferentially remembering that *q*.)

In concluding, let's consider the following case which might seem to pose a difficulty for Bernecker's account in terms of conditions (i–iii) and (iv′) if these are taken to be jointly sufficient for inferentially remembering that *p*. Suppose that at $t_2$ Jessica remembers from $t_1$ that (*q*) Colorado borders Kansas, learns and thus comes to truly think that (*r*) her friend Jeff won the Epistemology Prize, and comes to truly think, inferentially from her memory that *q* and her thought that *r*, that (*p*) Colorado borders Kansas *and* some friend of hers won the Epistemology Prize. Clearly, Jessica at $t_2$ does not inferentially *remember* that (*p*) Colorado borders Kansas *and* some friend of hers won the Epistemology Prize.[12] Yet conditions (i–iii) and (iv′) are all satisfied.

Now Bernecker may be able to rule out this case – and other such cases where *p* is a 'hodgepodge conjunction' – by appealing to his 'entailment condition' (EC), which, he claims,[13] applies not only to non-inferentially remembering that *p* but also to inferentially remembering that *p*:

> (EC) *p* (the proposition *S* represents at $t_2$) is relevantly entailed by $p^*$ (the proposition *S* represented at $t_1$).

Letting $p^*$ have the same content as *q* (i.e. Colorado borders Kansas), $p^*$ does not relevantly entail *p* (i.e. Colorado borders Kansas *and* some friend of hers (Jessica's) won the Epistemology Prize) – which, Bernecker can say, is why Jessica does not inferentially remember that *p*.

Making (EC) an additional necessary condition for inferentially remembering that *p* may work well enough in this case about Jessica, but it is questionable that it works as intended in all cases. It does not work, for instance, in the case where Judy does inferentially remember that (*p*) she saw a skunk outside; for in this case (EC) is not satisfied. To see this, let $p^*$ (the proposition Judy represented at $t_1$) have the same content as *q* (the proposition she remembered at $t_2$, i.e. either she saw a cat outside or she saw a skunk outside). However, $p^*$ does not, as it should for Bernecker's account to allow this case,

[12] Thanks to Earl Conee for suggesting this type of example.

[13] Bernecker, *Memory*, 226–27.

relevantly entail *p* (i.e. she saw a skunk outside), the proposition she inferentially remembers. So (EC) is not a necessary condition for inferentially remembering that *p*.[14]

[14] I am grateful to Sven Bernecker and Arnold Cusmariu for helpful comments.

# CARTESIANISM, NEO-REIDIANISM, AND THE A PRIORI: REPLY TO PUST

Gregory STOUTENBURG

ABSTRACT: Joel Pust has recently challenged the Thomas Reid-inspired argument against the reliability of the a priori defended by Alvin Plantinga, Nicholas Wolterstorff, William Alston, and Michael Bergmann. The Reidian argument alleges that the Cartesian insistence on the primacy of a priori rationality and subjective sensory experience as the foundations of epistemic justification is unwarranted because the same kind of global skeptical scenario that Cartesians recognize as challenging the legitimacy of perceptual beliefs about the external world also undermine the reliability of a priori rationality. In reply, Pust contends that some a priori propositions are beyond doubt and that fact can be used to support the overall reliability of reason. This paper challenges Pust's argument. I argue that while Pust successfully undermines a radical skeptical view of reason, he does not refute a more modest skepticism. I conclude with some suggestions for Cartesian a priorists.

KEYWORDS: a priori, skepticism, reformed epistemology, René Descartes, Thomas Reid

Joel Pust has recently argued for the reliability of a priori intuition against an argument that attempts to show that reason is to be trusted no more than sensory experience.[1] The anti-rationalist argument goes wrong, Pust thinks, by attempting to undermine the reliability of reason by thinking of the deliverances of reason under a description (e.g. as *beliefs produced by reason*) rather than thinking of them directly (e.g. *2+2=4*). While I think Pust succeeds in showing that the skeptical argument against the a priori is insufficient to induce doubt in *all* a priori propositions, his defense of the reliability of reason only succeeds for a small, privileged class of a priori propositions. Therefore, while Pust successfully undermines a *radical* skeptical view of reason, he does not refute a more modest skeptical view.

Descartes' familiar Dream Argument against the reliability of sensory experience goes something like this. If I were asleep, I could have just the same sensations as I would have if I were awake. But if the same sensations could occur whether I was asleep or awake, then I have no way of telling whether or not my sensations are veridical. If I can't tell whether my sensations are veridical or not,

[1] Joel Pust, "Skepticism, Reason, and Reidianism," in *The a Priori in Philosophy*, eds. Albert Casullo and Joshua C. Thurow (New York: Oxford University Press, 2013).

then I cannot know anything about the external world on the basis of those sensations. Therefore, I cannot know anything about the external world on the basis of sensation.

A key assumption of the argument is that one could be radically deceived such that when one forms a belief on the basis of a kind of experience, that belief could be false while one is unable to tell 'from the inside.' In the Dream Argument, the radical deception possibility is that one might be dreaming. In Descartes' later, more severe Evil Demon argument, the radical deception possibility is that one might be subject to the machinations of a very powerful deceiver whose goal is to thwart one's attempts to arrive at true beliefs, whether by the senses or through the exercise of reason.

The kind of skeptical argument motivated by contemporary Reidians – Alvin Plantinga, Nicholas Wolterstorff, William Alston, and Michael Bergmann – makes use of the skeptical concern that appears in the Evil Demon argument.[2] The meditator/Descartes wonders whether it is possible for a deceiver to cause massive confusion that obscures the truth of even very simple claims of reason. If we can imagine seeming to correctly perform simple inferences while unbeknownst to us some deceiver is at work causing us to falsely believe our inferences are good, then we have reason to doubt the reliability of our faculty of reason. Due to the possibility of sensory deception, Cartesians treat reason as foundational, but not sensation. But Reidians are puzzled: if just the same type of skeptical worry—namely, the possibility of global deception – suffices to undermine the reliability of sensory experience, it should also undermine the reliability of reason. Reidians thus accuse Cartesians of unjustifiably privileging reason over perception.

Pust argues that, contrary to appearances, the cases are not alike.[3] Here is his key move. Pust argues that when we entertain doubts about the reliability of reason, we are thinking of the deliverances of reason *indirectly* rather than directly. Skeptical concerns raised indirectly do not actually concern the probable truth of claims of reason considered directly.[4]

An example can illustrate this claim. I can entertain the proposition *red is a color* in multiple ways. To entertain the proposition directly is just to think *red is*

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[2] Alvin Plantinga, *God and Other Minds* (Ithaca: Cornell University Press, 1968); Nicholas Wolterstorff, *Reason within the Bounds of Religion*, 2nd ed. (Grand Rapids: Wm. B. Eerdmans Publishing Co., 1988); William Alston, "Christian Experience and Christian Belief," in *Faith and Rationality*, eds. Alvin Plantinga and Nicholas Wolterstorff (Notre Dame: University of Notre Dame Press, 1983); Michael Bergmann, *Justification without Awareness* (New York: Oxford University Press, 2006).

[3] Pust, "Skepticism," 214.

[4] Pust, "Skepticism," 217.

*a color*. Suppose a moment after thinking *red is a color* directly, I am briefly distracted. Now I can think of that same proposition under a different description: *the proposition I was thinking about before I got distracted*. The latter thought is an indirect way of entertaining the proposition *red is a color*.

Pust puts the direct/indirect distinction to work as follows. When we wonder whether *the class* of propositions justifiable a priori might be subject to massive skeptical error, we are thinking of them *under a description* that picks out the propositions by way of the group in which they are members. When thought of in that way, putatively a priori propositions are thought of indirectly. That way of thinking is in contrast to thinking of a priori propositions directly: e.g. thinking to oneself *2+2=4,* or *whatever thinks exists*, or *nothing is both entirely green and entirely red*, etc. Pust argues that skeptical concerns raised against the a priori indirectly are bogus: I am not *really* considering whether I might be mistaken about simple a priori propositions if I ask myself whether I can imagine being mistaken about *whatever it is* that I might call 'a priori.' Rather, I need to consider a priori propositions directly.[5] But when I directly consider a proposition like *2+2=4*, the clear grasp I have of its truth renders idle any skeptical challenge aimed at undermining the faculty responsible for my clear grasp of the proposition.

While Pust avoids overtly Cartesian terminology, let us call 'clear and distinct' a proposition the truth of which is guaranteed to one while one is considering the proposition *directly*.[6] Pust's argument is basically that the existence of clear and distinct propositions refutes any attempt to argue *indirectly* against the general reliability of reason.

Granting Pust's premises, there is still a serious skeptical concern with the a priori: the fact that *some* propositions are clear and distinct provides no reason to think the deliverances of reason are *generally* likely to be true. To defend the general reliability of reason would require an argument showing that the source of clarity and distinctness is reliable because it produces clarity and distinctness in just some cases. But the fact that clear and distinct propositions are individually guaranteed to be true does little to support the overall reliability of the faculty that provides a clear and distinct grasp of those propositions when the propositions in question are not *themselves* clear and distinct.

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[5] Pust, "Skepticism," 217.

[6] Throughout I write of clear and distinct propositions. That is shorthand for 'clear and distinct perception of the truth of a proposition.' I trust that the substitution does not create confusion. I also ignore the possibility of holding that clear and distinct propositions are highly likely to be true though not so likely as to be guaranteed. Such a lesser epistemic status for clear and distinct propositions is compatible with what I say throughout.

According to the Cartesian view that interests us, the *only* feature that guarantees the truth of some a priori propositions is their clarity and distinctness. A defender of the a priori might attempt to defend the general reliability of reason by identifying some other property – perhaps *being a belief produced by reason* – as the one that makes a priori beliefs likely to be true. The argument needed here would establish the reliability of reason *directly*. But how? It is surely not clear and distinct that beliefs produced by reason are likely to be true. Even Descartes did not pursue that line of argument. (Notably, it was at just this point in the Meditations that he called in God to secure the general reliability of reason.) It is at least unclear how a direct argument for the general reliability of reason would go. (I think it's hopeless.) In any case, that is not Pust's argument.

The *indirect* skeptical worry reappears with respect to the class of a priori propositions that are not clear and distinct: surely we can imagine that although *some* a priori propositions are true, many or *most* a priori propositions are false. One cannot acquire in Pust's way any reason for thinking that other propositions which are given to one by reason are likely to be true on account of their etiology when those propositions are not clear and distinct upon direct examination. That problem is all that moderate skeptics about the a priori, including the Reidians, need to defend their skepticism against Pust.

Even in the face of this moderate skepticism, though, Pust and Cartesians can continue to claim that reason is better suited to play a foundational role than sensory experience. Reason offers propositions whose excellent epistemic credentials are transparent. Sensory experience does not. While the same sort of argument that undermines the reliability of sensory experience also challenges the reliability of reason, reason offers a safe haven in the form of clear and distinct propositions. A priori propositions capable of serving as foundations for knowledge, then, are not just whatever propositions are the product of reason, but propositions that are clear and distinct upon *direct* consideration.

As a result, Cartesians do not *need* to argue for the general reliability of the a priori. The only reliability claim about the a priori Cartesians have to defend is that *clear and distinct* propositions are guaranteed to be true. The same considerations Pust uses to undermine indirect a priori skepticism also show that one need not attempt a *general* (indirect!) defense of reason. It is enough to rely upon propositions that are clear and distinct.

A skeptical concern arises: relying exclusively on clear and distinct foundations cannot sustain what we ordinarily think is the extent of our a priori knowledge. I have two replies. First, the epistemologist's primary task is to discover the epistemic standards we hold. If our deepest epistemic standards

suggest that we have less knowledge than we ordinarily think, then so be it.[7] Second, one *might* argue that less alleged knowledge is threatened than first appears. One might extend the privileged class of propositions that are *now* considered clear and distinct to include those one believes and for which one *would* easily have a clear and distinct perception of the proposition's truth if one *were* to consider the proposition. The fact that I was not having a clear and distinct perception of the truth of *2+2=4* as I was writing this paragraph would not, on this suggested amendment, prevent *2+2=4* from counting as a bit of foundational knowledge, because I already believe *2+2=4* and it would again be clear and distinct to me simply upon entertaining it. According to this suggestion, the class of propositions that count as foundationally justified by reason is constrained by what one believes and by what can easily become clear and distinct for one. Thus, contrary to the Reidians' concern, we need not uncritically allow that *whatever* beliefs reason produces count as justified. But it is unclear how a subject can, by Cartesian standards, be justified in *relying* on these propositions that count as clear and distinct only as members of the expanded class. Surely one can wonder to oneself, "Couldn't my future clear and distinct beliefs be false?" If the beliefs in question are ones the subject now holds and that would easily become clear and distinct upon future reflection, then the answer to the question is "No": but that fact provides little intellectual satisfaction for the Descartes who wants to be *sure* that he will not fall into intellectual error.[8]

[7] I defend this view as a consequence of an 'armchair' method of conceptual analysis in Gregory Stoutenburg, "Vicious Regresses, Conceptual Analysis, and Strong Awareness Internalism," *Ratio* (forthcoming 2015), doi:10.1111/rati.12087.

[8] For helpful discussion on the central problem in this paper I thank the participants of Ali Hasan's seminar on a priori justification held in fall 2014 at the University of Iowa. That group includes (but is not limited to) Ali Hasan, Bryan Appley, Landon Elkind, Dave Redmond, Nik Maggos, and Emily Waddle. Thanks also to Brian Collins and Nik Maggos for comments on a draft.

# KNOWLEDGE IS *NOT* BELIEF FOR SUFFICIENT (OBJECTIVE AND SUBJECTIVE) REASON

Daniel WHITING

ABSTRACT: Mark Schroeder has recently proposed a new analysis of *knowledge*. I examine that analysis and show that it fails. More specifically, I show that it faces a problem all too familiar from the post-Gettier literature, namely, that it is delivers the wrong verdict in fake barn cases.

KEYWORDS: knowledge, analysis, luck, Edmund Gettier, objective and subjective reasons, rationality, Mark Schroeder

## 1. Introduction

Here is a familiar narrative. We used to think that knowledge is justified true belief. Then Edmund Gettier presented counterexamples to this view which appeared to refute it.[1] Then philosophers spent years, decades even, trying to modify or supplement the view only to see their revised versions face further counterexamples. Then we gave up trying to say what knowledge is.

Whether this narrative is faithful to the actual course of events is not my present concern. It is certainly true that a growing trend in epistemology is to abandon the search for a non-circular account which specifies the necessary and sufficient conditions under which a person knows a proposition, and to take the notion of knowledge, or that which it picks out, as primitive.[2]

In a recent paper, Mark Schroeder seeks to resist this trend.[3] He presents a new analysis of knowledge, one which aims to be informative and non-circular. While his proposal is intriguing and original, my aim here is to show that it is false. More specifically, I hope to show that it fails for reasons all too familiar from the above narrative – it is subject to Gettier-style counterexamples.

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[1] Edmund Gettier, "Is Justified True Belief Knowledge," *Analysis* 23 (1963): 121-123.

[2] See Timothy Williamson, *Knowledge and its Limits* (Oxford: Oxford University Press, 2000).

[3] Mark Schroeder, "Knowledge is Belief for Sufficient (Objective and Subjective) Reason," in *Oxford Studies in Epistemology: Volume 5*, eds. Tamar Szabó Gendler and John Hawthorne (Oxford: Oxford University Press, 2015), 226-252.

## 2. The analysis

To introduce Schroeder's analysis, I will briefly explain three distinctions he appeals to. First, there is a distinction between *objective* reasons and *subjective* reasons.[4] Objective reasons are facts which favour some act or attitude. Subjective reasons are apparent objective reasons. Suppose that, having read the film-listings, checked online, etc., Sophie believes that her favourite movie is showing at the cinema. She turns up at the cinema to find that the screening was cancelled without notification. In this case, while there is no objective reason for Sophie to go to the cinema, what she believes is a subjective reason for doing so.

It is important to note that, in some cases, a subjective reason *is* an objective reason – when the relevant apparent fact *is* a fact (in the above case, had what Sophie believed been true).

Second, there is a distinction between the objective reasons which a person *possesses* and those which she does not possess. To say that a person possesses a reason is to say that she is in a position to act or hold an attitude on the basis of or for that reason. Suppose that, unbeknownst to her, Sophie's favourite film is showing on TV. In that case, there is an objective reason for her to watch TV but, as Sophie is unaware of this, she does not possess that reason (in the relevant sense).

What does it take to have a reason, so understood? I will not try to resolve that question here but it presumably involves standing in some doxastic or epistemic relation to the consideration which provides it.[5]

With Schroeder, I assume that all subjective reasons are possessed. That is, if there is a subjective reason for a person to φ, she is in a position to φ for that reason, hence, she has that reason. Nothing turns on this assumption.

Third, there is a distinction between the reasons a person possesses for *φ*ing and the reasons *for which* or *on the basis of which* she *φ*s.[6] In the above example,

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[4] Schroeder, "Knowledge is Belief," 236-238. For recent discussion of this distinction, see Kurt Sylvan, "What Apparent Reasons Appear to Be," *Philosophical Studies* 172 (2015): 587-606; Daniel Whiting, "Keep Things in Perspective: Reasons, Rationality, and the A Priori," *Journal of Ethics and Social Philosophy* 8 (2014): 1-22.

[5] Schroeder, "Knowledge is Belief," 237-238. For recent discussion, see Juan Comesaña and Matthew McGrath, "Having False Reasons," in *Epistemic Norms*, ed. Clayton Littlejohn and John Turri (Oxford: Oxford University Press, 2014), 59-80; Mark Schroeder, "What Does it Take to 'Have' a Reason?," in *Reasons for Belief*, ed. Andrew Reisner and Asbjørn Steglich-Petersen (Cambridge: Cambridge University Press, 2011), 201-222. In "How Knowledge Works," *Philosophical Quarterly* 49 (1999): 433-451, John Hyman argues that a person possesses that *p* as an objective reason for *φ*ing just in case she knows that *p*. If that is right, Schroeder's account of knowledge might be open to a charge of circularity. I will not pursue the issue here.

Sophie might go to the cinema and have a reason for doing so, namely, that her favourite film is showing, but not go for that reason. Perhaps she goes for some other reason or for no reason at all.

In light of this, consider the reason for which a person holds a certain belief.[7] That reason is one of her subjective reasons. According to Schroeder, if the subjective reason for which a person believes is weightier than any of her subjective reasons against believing – that is, for disbelieving or withholding with respect to the relevant proposition – her reason for believing is *subjectively sufficient*. If a person believes for sufficient subjective reason, her belief is *rational* or *justified*.[8]

The reason for which a person holds a belief might also be a possessed objective reason. According to Schroeder, if the objective reason for which she believes is weightier than any of the objective reasons against believing, her reason for believing is *objectively sufficient*. If a person believes for sufficient objective reason, her belief is *correct* – in which case, Schroeder points out, it is true.

It is important that, on Schroeder's view, an objective reason for believing is sufficient when it is weightier than *all* objective reasons against believing, not just when it is weightier than *all possessed* objective reasons against believing.

Suppose that the reason for which a person believes is both objectively and subjectively sufficient. In that case, Schroeder says, she has knowledge. So, the proposed analysis is:

> A person knows that *p* if and only if she believes that *p* for sufficient (objective and subjective) reason.[9]

## 3. The counterexample

I will suggest that Schroeder's analysis of knowledge is open to Gettier-style counterexamples, more specifically, that it delivers the wrong verdict in fake barn cases.[10]

Suppose that Sophie knows what barns look like and is driving through the countryside. She passes many structures which look like barns. Sophie stops in a

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[6] Schroeder, "Belief is Knowledge," 240-241.

[7] Typically, a person holds a belief on the basis of more than one reason. For ease of presentation, I set this aside.

[8] Schroeder uses these terms interchangeably.

[9] Schroeder, "Belief is Knowledge," 242.

[10] See Alvin Goldman, "Discrimination and Perceptual Knowledge," *Journal of Philosophy* 73 (1976): 771-791.

field before one such structure and, on the basis of its appearance, forms the belief: that's a barn. Unbeknownst to Sophie, she is travelling through fake-barn county. She just happened to stop at the one genuine barn in the area. According to orthodoxy, and to Schroeder,[11] Sophie has a rational (justified) true belief but lacks knowledge that it's a barn.[12]

Schroeder thinks that his analysis of knowledge is not only consistent with this verdict but explains it. According to Schroeder, Sophie lacks knowledge because the reason for which she believes – namely, that it looks like a barn – is *objectively insufficient*.[13] It is insufficient due to the obtaining of an objective defeater, namely, the fact that Sophie is in fake-barn county. That fact, on Schroeder's view, undercuts (reduces in weight) Sophie's reason for believing that it's a barn. As Schroeder puts it, when Sophie is in fake barn county, "visual evidence of a barn is not such a great reason to believe [s]he is seeing a barn."[14] Given that Sophie is in fake-barn county, her reason for believing is insufficient, not good or weighty enough, to outweigh all the objective reasons for disbelieving this or withholding with respect to it. As a result, Sophie lacks knowledge.[15]

According to Schroeder, that Sophie is in fake-barn county objectively undercuts the reason for which she believes that it's a barn, namely, that it looks like one. Surely, however, that undercutting defeater will itself be defeated. After all, while Sophie is in fake-barn county, she is in no-fake-barn field (that is, an environment without fake barns). And, to adapt Schroeder's words, the fact that something looks like a barn is a great reason to believe that it is a barn, if you are in no-fake-barn field. Since the defeater for the reason for which Sophie believes is defeated in turn, that reason remains objectively sufficient. So, Schroeder's account wrongly predicts that Sophie knows that it's a barn.

One might revise the case so that there are fake-barns in the field, that is, so that Sophie is in fake-barn field. That fact, one might think, undercuts the reason

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[11] Schroeder, "Belief is Knowledge," 229.

[12] Ernest Sosa is one of the minority who maintains that subjects in fake barn cases *do* enjoy knowledge. See Ernest Sosa, *A Virtue Epistemology: Apt Belief and Reflective Knowledge, Volume 1* (Oxford: Oxford University Press, 2007). I cannot engage here with that view, which Schroeder does not share. I note only that it is highly controversial. For critical discussion, see Christoph Kelp, "Unreflective Epistemology," *Episteme* 11 (2014): 411-422.

[13] As Schroeder describes the case, the objective reason for which the subject in fake barn county believes is *that the relevant structure looks like a barn*. You might wonder if her reason could be the (apparent fact) *that it is a barn*. I set this issue aside.

[14] Schroeder, "Knowledge is Belief," 247.

[15] Just to be clear: that Sophie is in fake-barn county is supposed to make the set of objective reasons *for which she believes* insufficient, not the set of all objective reasons.

for which she believes that it's a barn, namely, that it looks like one. So, according to Schroeder's analysis, Sophie does *not* know that it's a barn. And that is the right verdict.

However, this move does not help. Even if Schroeder's account delivers the right verdict in this revised case, it still does not deliver the right verdict in the original case. So, it remains extensionally inadequate. Moreover, the revision only postpones the problem. Suppose that Sophie is in fake-barn field. Still, she is in in no-fake-barn sub-field. And the fact that something looks like a barn is a good reason to believe that it's a barn, if you are in no-fake-barn sub-field.

To bolster the claim that in the original case the fact that Sophie is in no-fake-barn field is a defeater-defeater, consider the following chains of reasoning:

(1) That looks like a barn. So, it's a barn.

(2) That looks like a barn. And I'm in fake-barn county. So, it's a barn.

(3) That looks like a barn. And I'm in fake-barn county. But I'm in no-fake-barn field. So, it's a barn.

(1) seems like good reasoning, which confirms the thought that the fact something looks like a barn is a (defeasible) reason for thinking that it's a barn. (2), in contrast, seems like bad reasoning, which confirms the thought that the fact that the subject is in fake-barn county defeats (specifically, undercuts) the reason provided by the fact that it looks to her like a barn. (3), in contrast, seems like good reasoning again, which confirms the thought that the fact that the subject is in no-fake-barn field defeats the aforementioned defeater.

## 4. Weighing reasons

In presenting the counterexample to Schroeder's analysis of knowledge, I made some claims about defeat. You might suspect that those claims rest on a controversial theory of defeat, one Schroeder might object to. To show that this is not so, I will develop the objection by appeal to the analysis of defeat which Schroeder himself advances.[16]

Schroeder accounts for the weights of reasons in terms of the activity of weighing reasons. On his view, very roughly, for a reason to have a certain weight is for there to be sufficient objective reason – that is, for it to be correct – to place that weight on it in deliberation. An undercutting consideration reduces the weight of a reason (in some cases to zero) by providing a reason to place less (in some cases no) weight on that reason when deliberating. To illustrate, suppose

[16] Mark Schroeder, *Slaves of the Passions* (Oxford: Oxford University Press), chapter 7.

that Mike promised to meet Sophie at the cinema. This is a fairly weighty reason for going to the cinema, which is to say that it is correct for Mike to place a fair amount of weight on that consideration when deciding what to do this evening. If Sophie releases Mike from this promise, that is a reason for Mike to place less (perhaps no) weight on his promise when deliberating further. Hence, the fact that Sophie releases Mike from his promise undercuts his reason for going to the cinema, namely, that he promised to do so.

This is a rough sketch of Schroeder's theory. There are more details to provide and questions to ask but it suffices for present purposes. I will now return in light of it to the fake barn case.

Consider only the fact that the structure looks to Sophie like a barn. This is, let us suppose, a weighty reason for her to believe that it's a barn, which is to say that there is sufficient reason for Sophie to place a lot of weight on the fact that it looks like a barn when deliberating as to whether to believe that it's a barn. Now add that Sophie is in fake-barn county. According to Schroeder, this consideration objectively defeats – more specifically, undercuts – Sophie's reason for believing that it's a barn, which is to say that it is a reason for her to place less weight on the fact that it looks like a barn when deliberating as to whether to believe that it's a barn. Now add that Sophie is in no-fake-barn field. This consideration objectively defeats the aforementioned defeater, which is to say that it is a reason for Sophie to return to placing a lot of weight on the fact that it looks like a barn when deliberating as to whether to believe that it's a barn.[17]

According to Schroeder, a subject lacks knowledge in a fake barn case because the reason for which she believes is defeated by a fact about her environment. In the previous section, I claimed that that defeating consideration will itself be defeated in fake barn cases. In which case, Schroeder's analysis of knowledge predicts that the relevant subject possesses knowledge. In this section, I have shown that Schroeder's account of undercutting defeat is consistent with – indeed, vindicates – these points.

## 5. Conclusion

According to Schroeder, knowledge is belief for sufficient (objective and subjective) reason. Fake barn cases are Gettier-style counterexamples to this.

[17] More fully, that Sophie is in no-fake-barn field is a reason for her not to place any weight on the fact that she is in fake-barn county when deliberating as to whether to place weight on the fact that it looks like a barn when deliberating as to whether to believe that it's a barn.

Believing for sufficient (objective and subjective) reason is insufficient for knowledge.[18]

[18] Thanks to Conor McHugh and Mark Schroeder for comments on an earlier version of this material. Thanks also to the Arts and Humanities Research Council (AH/K008188/1) for funding in support of this research.

# REVIEWS

# Jaroslav Peregrin: *Inferentialism. Why Rules Matter*, New York, Palgrave Macmillan, 2014.

**Reviewed by Thomas Dabay**

Inferentialism is the view that meaning is constituted, at least in part, by the inferential relations that exist between sentences in a language. In his book, aptly titled *Inferentialism*, Jaroslav Peregrin attempts to clearly and concisely restate a version of the strong, normative form of inferentialism most convincingly argued for in Robert Brandom's *Making It Explicit*. At the start, it is important to note the clear overlap between Peregrin's project and Brandom's in his own *Articulating Reasons*. What separates these projects are, first, Peregrin's extended focus on logical languages, and second, Peregrin's efforts at bringing new metaphors to bear on well-established problems. These new metaphors are *Inferentialism's* greatest strength, insofar as they promise a deeper understanding of rule-following and inferentialism, but also its greatest weakness, insofar as they too often allow Peregrin to overlook pressing issues.

Here, I will outline the major theses of *Inferentialism* before focusing in more detail on Peregrin's metaphors. Ultimately, *Inferentialism* is worth reading for those already engaged with the inferentialist literature, and can serve as a helpful supplement to Brandom's *Articulating Reasons* for those coming to inferentialism for the first time.

Structurally, *Inferentialism* consists of eleven chapters, the first of which serves as an introduction. The remaining ten chapters are split evenly into two parts, with Part I focusing on familiar Brandomian issues concerning representation and the semantics of empirical languages, and Part II focusing on less familiar issues concerning logical constants in formal languages.

Chapters 1 through 3 function together to develop the overall framework of inferentialism. Importantly, Peregrin defends *strong inferentialism* – the claim that meaning is constituted *solely*, and not just in part, by inferential relations – and *normative inferentialism* – the claim that meaning-constituting inferential relations are *proprieties of proper inference*, not (dispositions towards) *performances of actual inference*.

In Chapter 4, Peregrin focuses on the status of individual rules and their role in our linguistic practices, and it is here that he introduces the metaphors I will focus on below.

In Chapter 5, Peregrin's focus zooms out to consider systems of rules. In order to understand how it is that (as he claims) only jointly are rules able to

constitute linguistic spaces within which we can engage in language games, Peregrin provides a detailed analysis of the Wittgensteinian analogy between language and chess, as well as what it tells us about the constitution of Sellars's space of reasons.

Peregrin concludes Part I with Chapter 6, where he sketches an evolutionary account of how rule-following creatures could emerge naturally, and propagate themselves and the rules they follow.

Chapter 7 opens Part II with a discussion of inference and logical consequence. As an inferentialist, Peregrin wants to account for consequence in terms of inference, but he quickly runs into the objection that consequence (understood in terms of truth-preservation) cannot be reduced to inference (understood in terms of human proofing) because a proposition can be the consequence of an infinite set of premises even though finite humans cannot complete an inference with infinite premises. Peregrin argues that this highlights a difference merely in degree between consequence and inference, not one in kind, and so an inferentialist account can still be illuminating.

In Chapter 8, Peregrin poses another objection to inferentialism: given how Peregrin sets up his inferentialism, no inferential relations can give the sign '∨' the meaning of disjunction as conceived in classical logic.

Peregrin rebuts this objection in Chapter 9, arguing first that the most this proves is that intuitionist logic is more natural for the inferentialist, not that the inferentialist fails to give '∨' a meaning. If this is not taken as an adequate response, Peregrin next argues that, by introducing what he calls multiple-conclusion inferences, an inferentialist can construct the system of classical logic. Both arguments are developed in terms of and in service to Peregrin's expressivist conception of logic.

Finally, across Chapters 10 and 11 Peregrin argues that the rules of logic are constitutive of the space of reasons, and argues that this has two important consequences. First, the rules of logic cannot be rationally justified, because any rational justification presupposes the rules of logic. Therefore, their only justification is pragmatic insofar as they expand the possibilities of cognition and help us cope in life. Second, the rules of logic are not rules of reasoning in the sense of directing actual processes of reasoning, although they are in the more fundamental sense of making possible any reasonings whatsoever.

Turning now to Peregrin's metaphors, there are two I would like to highlight. Peregrin's first metaphor, that of *bouncing off* rules, is meant to shift the inferentialist's discussion away from rule-*following*. This is warranted because, according to Peregrin, linguistic rules are "not *prescriptive* in the narrow sense of

the word in which rules dictate what to do, but rather *restrictive*; rules tell us what *not* to do, what is *prohibited*."[1] The image this leaves us with has rules functioning as barriers that constrain our linguistic practices. Furthermore, when combined appropriately, rules may "*delimit* some new spaces for our actions" precisely "through *limiting* us in what we may do."[2] To supplement this metaphorical language, Peregrin describes how what he says latches onto Wilfrid Sellars's distinctions between rules of doing and rules of criticism, and between ought-to-dos and ought-to-bes.[3] By cashing out his first metaphor in this manner, Peregrin demonstrates the value his metaphors can have in making technical inferentialist points considerably more vivid and more intuitive.

Unfortunately, Peregrin does not always cash out his metaphors in this manner, and it is in these cases that his arguments become less enlightening. To see why, we need only consider Peregrin's second metaphor, that of *inhabiting* a linguistic space. Because rules delimit linguistic spaces, we can understand them from either an insider's perspective or an outsider's perspective. This difference in perspectives introduces an issue that strikes at the core of the normative inferentialist's position,[4] namely how he is to balance his naturalistic inclinations with his desire to acknowledge robust normativity. As Peregrin admits, when we describe linguistic spaces from the outside, their normativity seems to dissolve into mere dispositions of the sort antithetical to normative inferentialism. Peregrin's response is to prioritize the insider's perspective, from which the normativity of the linguistic space appears genuine. The reason we get to prioritize this perspective is, Peregrin claims, because we inhabit linguistic spaces such that we have our dwelling within them. Unfortunately, Peregrin never explains what this means in non-metaphorical language, and the best his reader is left to make of it is that we inhabit certain spaces in the sense that we have normative attitudes concerning what is proper within those spaces.

But if this is all that Peregrin's metaphor amounts to, it cannot do the work he wants it to. Barring some argument, the mere fact that we can inhabit a space from within or describe it from without gives us no reason to prioritize one perspective over the other. Additionally, the more obvious candidate for

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[1] Peregrin, *Inferentialism*, 72

[2] Peregrin, *Inferentialism*, 73.

[3] See, respectively, Wilfrid Sellars, *Science and Metaphysics* (London: Routledge and Kegan Paul, 1968), 76; and Wilfrid Sellars, "Language as Thought and Communication," in *In the Space of Reasons: Selected Essays of Wilfrid Sellars* (Cambridge, MA: Harvard University Press, 2007), 59-65.

[4] For Brandom's treatment of this issue, see his *Making It Explicit: Reasoning, Representing, and Discursive Commitment* (Cambridge, MA: Harvard University Press, 1998), Conclusion.

prioritizing is the outsider's perspective, if only because the insider's is more limited and parochial. Of course, someone sympathetic to Peregrin would argue that this response leads to a regress insofar as the outsider's perspective must still be situated within a linguistic space, and so we must take a meta-outsider's perspective on the outsider's linguistic space, and so on. But from here the most plausible responses are (1) to say that some perspective has proven most useful to us, in which case the best candidate would seem to be the sort of philosophically-informed scientific perspective that would dissolve normativity into dispositions, or (2) to accept the regress and argue that this proves the essential finitude of humans, in which case we might be unable but to take the insider's perspective, but this merely offers an exculpation of our normative attitudes and not a justification.

All of this is not to say that Peregrin's position cannot be defended, nor that Peregrin's second metaphor is idle. What it does say is that Peregrin's metaphor is merely the beginning of an account of a naturalistic normative inferentialism, and not the full account he takes it to be.

In conclusion, the merits of *Inferentialism* – which include Peregrin's new perspective on old problems and extended focus on inferentialism in logic – make it worthy of being read by those working in the problem areas surrounding inferentialism, and as an introduction to these areas Peregrin's book is second only to Brandom's *Articulating Reasons*.[5]

[5] Robert Brandom, *Articulating Reasons: An Introduction to Inferentialism* (Cambridge, MA: Harvard University Press, 2001).

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