

# An indexical characterization of disagreement based on possible worlds semantics

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In this paper, I discuss Robert Fogelin's definition of "deep disagreement" as a "clash of propositional frameworks", challenging the view that there are "deep disagreements" as opposed to "normal disagreement" (Fogelin, 1985). For this purpose, I use a possible worlds semantics (Lewis, 1986) to characterize the notion of "propositional framework" as a set of possible worlds and I explain why this perspective leads to question the opposition between "deep disagreement" and "normal disagreement".

KEYWORDS: [belief; belief network; David Lewis; deep disagreement; disagreement; indexical; modal realism; possible worlds semantics; propositional framework; Robert Fogelin]

## 1. INTRODUCTION

Robert Fogelin, in his canonical paper *The logic of deep disagreement* (1985), defines deep disagreement as resulting from a clash between two propositional frameworks. In his view, in certain rare circumstances, the sources of the propositions constituting the disagreement are such that its rational resolution is impossible. For example, in the context of the debate on the right to abortion, "parties on opposite sides of the abortion debate can agree on a wide range of biological facts-when the heartbeat begins in the fetus, when brain waves first appear, when viability occurs, etc., yet continue to disagree on the moral issue." (Fogelin, p. 6) In this case, still according to Fogelin, the primitive sources of the conflict are located in an opposition between religion and secularism. Indeed, if, in a religious context, one believes that "shortly after conception, an immortal soul enters into the fertilized egg" (Fogelin, p. 6) and if, in a secular context, one does not believe in the immortal soul, then the parties stand in conflicting

frameworks. In other words, the source of the disagreement is "a whole system of mutually supporting propositions (and paradigms, models, styles of acting and thinking) that constitute [...] a form of life." (Fogelin, p. 7) In contrast to cases of deep disagreement, Fogelin also explains, "an argument, or better, an argumentative exchange is normal when it takes place within a context of broadly shared beliefs and preferences", that is when the frameworks of the participants are globally shared.

Nevertheless, the distinction between deep and normal disagreement is not always clear. It seems to me that this difficulty is due to the ambiguity of the notion of "propositional framework". What is it? What is the nature of this "system of mutually supporting propositions" (Fogelin, p. 7)? According to Fogelin's paper, one might think that the notion refers to a set of propositions that base some given systems, for example, propositions of the Bible, of the Declaration of the Rights of Man and of the Citizen or propositions contained in constitutions.

However, these sets of propositions are not always precisely determined and localized, do not always constitute a clear source and are not always written. For example, the dream culture of the Australian Aborigines or the symbolic thought of the Middle Ages could be considered as propositional systems in the sense of Fogelin, without however it being possible to define precisely their outlines. They exist, in fact, as shared belief systems, in other words, as belief networks shared by many individuals.

Consequently, if a propositional framework is a network of shared beliefs, then any individual constitutes a particular form of life, because any individual has a particular belief network. Hence, any case of disagreement results from a clash between two propositional frameworks, that is, from a clash between two or more individual belief networks, necessarily dissimilar in some respects and necessarily similar in others. It is therefore difficult to distinguish between deep and normal cases of disagreement. Indeed, an apparent case of deep disagreement may in fact be normal if the belief networks of the disagreeing parties coincide relevantly with respect to that disagreement. On the other hand, an apparent case of normal disagreement may in fact be deep, if the belief networks of the disagreeing parties diverge relevantly with respect to that disagreement.

To illustrate this second possibility, assume that Mia and Laura disagree about the proposition "The speed must be limited to 30km/hour in the city". Mia, because of a whole series of experiences, learning, etc. since her birth, believes and expresses the opinion that speed must be limited. The reasons she gives to support this standpoint is that speed limit statistically minimizes the risk of accidents and that

this minimization of risk is worth more than the freedom of the driver. Laura expresses the opinion that speed must not be limited, because unlike Mia, even if she acknowledges that limitation minimizes the risk of accidents, she favours the freedom of the driver. Here, it seems that the disagreement described cannot be rationally resolved, because Laura and Mia stand in two incompatible frameworks (their individual framework). So, "dialogues of the deaf" (Angenot, 2008) are perhaps more frequent than Fogelin claims.

In this paper, I attempt to propose a more inclusive approach to disagreement than the one suggested by Fogelin. In my opinion, if disagreement is always the result of a clash between two propositional frameworks, these frameworks, relevantly to the disagreement in question, may be similar or dissimilar. In other words, there would not be two opposite categories of disagreement, deep disagreement and normal disagreement, but a continuum.

To illustrate this idea, I suggest using a semantics of possible worlds. This semantics has the merit, in my opinion, of being adapted to an accessible and user-friendly characterization of the notion of "propositional framework". From this semantics, I will first show that the propositional framework specific to an agent, i.e. the set of his or her beliefs, can be characterized as a set of possible worlds in which the propositional content of these beliefs is true. Then, I will define disagreement as a difference between two sets of possible worlds, before concluding by saying why such a definition allows us to adopt an indexical point of view on disagreement.

## 2. DISAGREEMENT SEEN AS A DIFFERENCE OF BELIEFS

Before explaining how the semantics of possible worlds could be useful in defining the notion of propositional framework, I would like to explain why it is relevant to consider these frameworks as belief networks and disagreement as a difference of beliefs, more broadly, as a difference between two parts of belief networks.

It is difficult to deny that disagreement implies ontologically the presence of mental states. Indeed, the very nature of disagreement is to be a difference of beliefs between two subjects. For example, Jean-Blaise Grize writes:

"The problem [of argumentation] is not through [the] discourse to preserve a supposed truth, but to give to see - more exactly to give to look - plausible representations, i.e. to manipulate belief values." [translation my own] (1996, p. 48)

However, recognizing the triviality of the link between mental states and argumentation does not imply, for the analyst, to consider these mental states at a methodological and metatheoretical level. On the contrary, according to David M. Godden:

“ Those theories of argumentation which hold the goal of persuasive argumentation to be the settling of a difference of opinion by rational means [...], not wanting to get bogged down in a quagmire of psychological considerations, hold that argumentation ends when there is some change in the commitments – rather than the beliefs – of the disputants.”  
(2010, p. 1)

One of those theories is the pragma-dialectics, which adopts as a metatheoretical premise a principle of externalisation. In short, pragma-dialectics analyses the argumentative discourse at the level of commitments attributed to the parties, which must be:

“(1) externalized by the parties themselves in the discourse,  
(2) externalizable from what has been said in the discourse, or  
(3) on other grounds regarded as understood in the discourse.” (Van Eemeren et al., 2014, p. 526)

In other words, adopting an externalization principle for the analysis of argumentation makes it possible to consider the phenomenon in a pragmatic way: argumentation is an observable communicative act aimed at resolving a disagreement considered as a difference of standpoints and not as a difference of beliefs, because the standpoint is external, whereas the belief is not.

Nevertheless, if externalism serves its purpose adequately, the principle is limiting when it comes to explain the nature of disagreement and to understand specific argumentative phenomena, such as deep disagreement. Indeed, if one argues to resolve a difference of opinion, it is also a question, for the agents involved in an argumentation process, of acting both on their own belief network and on that of the other (see e.g. Sperber, 2001). In other words, deep disagreements are deep because the roots of a difference of opinion are cognitive. Therefore, while it is sometimes possible to identify one or other external propositional framework within which this disagreement falls, this is not always the case.

For example, suppose that S1 and S2 disagree about the proposition “Between the Earth and Mars there is a china teapot revolving around the sun in an elliptical orbit” (Van Inwagen, 2012). In this case, the propositional framework in which the disagreement falls

is very specific and not describable other than referring to the belief networks of S1 and S2. Thus, if the propositional framework as described by Robert Fogelin is often a system or a form of life globally identifiable and roughly circumscribed (the aboriginal dream culture, the liberal-democratic framework, Christianity), its most elementary unit is a network of shared or unshared beliefs. As well, the most elementary units of disagreement are beliefs and therefore, its most elementary definition is in terms of a difference of beliefs.

### 3. DISAGREEMENT AND POSSIBLE WORLDS

David Lewis publishes *On the Plurality of Worlds* in 1986. In this book, he proposes a strange thesis: there is an infinity of possible worlds, which realizes all complete and consistent conceptualizations of logical domains alternative to reality. In other words, according to Lewis, "There are so many other worlds, in fact, that absolutely *every* way that a world could possibly be is a way that some world *is*." (Lewis, p. 2)

The possible worlds semantics was developed from the middle of the twentieth century in order to provide the modal logic with an extension principle (for more explanations, see Copeland, 2002). In this view, for example, the meaning of a modal proposition such as "Possibly, all crows are blue" is "In some worlds, all crows are blue", and the meaning of a modal proposition such as "Necessarily, P or non-P" is "In all possible worlds, P or non-P." This way, the definition of possibility and necessity is not circular.

From this point on, the question arises of the ontology of possible worlds. Roughly, there are three opposing conceptions. First, supporters of non-representational abstractionism consider that possible worlds are abstract entities and that this definition is sufficient (see e.g. Van Inwagen, 1986). Second, supporters of representational abstractionism consider that possible worlds are abstract constructions and specify the nature of these constructions, which can be sets of propositions; sets of properties, etc. (see e.g. Adams, 1974 or Heller, 1998). Third, David Lewis proposes the thesis that possible worlds are concrete entities, exactly in the same way that our world is concrete. According to him, possible worlds are strictly separated from each other spatially and temporally, but linked by "counterpart" relations (see Lewis, 1968).

For example, a world W1 and in this world W1, S1 having the property of being Bertrand Russell (and all properties related to the property of being Bertrand Russell, such as that of being British, being born on May 18, 1872, etc.). Likewise, a world W2 and in this world, S2 also having the property of being Bertrand Russell. In the Lewisian approach, S1 and S2 are not identical (there are numerically two objects

having the property of being Bertrand Russell), but they are counterparts of each other. Indeed, Bertrand Russell in W2 is the closest individual, in terms of properties, to Bertrand Russell in W1.

Now, a world W1 containing Bertrand Russell (a living being) and a W2 world containing only one goat (a living being) and stones. In W2, the counterpart of Bertrand Russell is a goat, because what most closely resembles Bertrand Russell in W2 is a goat. Moreover, if W1 contains other living beings in addition to Bertrand Russell, the goat is also their counterpart in W2 (the counterpart relation is not an equivalence relation). To simplify, we can say that, in general, worlds have relations of similarity and dissimilarity.

Eventually, a world W, which is the world where we live. This world is "actual" from our perspective. However, from the perspective of the inhabitants of a world W2, the world W2 is the actual world. In other words, the actuality is indexical. Each world is actual for itself and all possible propositions are true relatively to at least one possible world. (for complements and an overview of numerous objections to modal realism, see Menzel, 2017)

### *3.1 A possible worlds semantics to characterize belief*

In *On the Plurality of Worlds* (1986), David Lewis suggests an application of modal realism to doxastic and epistemic modalities, by approaching this second type of modality in a superficial way, because they pose additional difficulties. Like him, I focus here only on doxastic modalities. In addition, I leave aside technicalities and objections and I present only the foundations of the semantics, thus described:

Like other modalities, [doxastic modalities] may be explained as restricted quantifications over possible worlds. To do so, we may use possible worlds to characterise the content of thought. [...] The content of someone's system of belief about the world (encompassing both belief that qualifies as knowledge and belief that fails to qualify) is given by his class of doxastically accessible worlds. World W is one those iff he believes nothing, either explicitly or implicitly, to rule out the hypothesis that W is the world where he lives.

Whatever is true at some epistemically or doxastically accessible world is epistemically or doxastically possible for him. It might be true, for all he knows and for all he believes. He does not know or believe it to be false.

[...] If he is mistaken about anything, that is enough to prevent his own world from conforming perfectly to his system of belief (Lewis, 1986, p.27).

For example, assuming that Laura believes that "Speed should not be limited to 30 km/h" (P), that "Drivers' freedom is worth more than minimizing accident risk" (Q) and that "P justifies Q", there is a set of worlds W where P is true, where Q is true and where P justifies Q<sup>1</sup>.

This perspective may seem bizarre, because it forces us to adopt an absolute and almost frantic realism, even about evaluative and deontic judgments. However, it makes sense if we consider the direction of fit of belief, which aims to truth (see e.g. Anscombe, 1957, Searle, 2002, Humberstone, 1992). In this perspective, if Laura sincerely believes that P, she believes that P is true, regardless of the nature of P (epistemic, deontic, evaluative, etc.). In the same way, if Laura supports the standpoint that P, she supports the standpoint that P is true. She could, of course, practice zealous *zététique* (scepticism) and suspend its judgment when the truth of a proposition is not positively ascertainable. Nonetheless, in practice, it seems that subjects tend to believe and optimistically support the truth of all kinds of propositions. In addition, they justify these propositions with other propositions in which they also believe, in the space of their own rationality<sup>2</sup>.

Thus, modal realism applied to doxastic modalities preserve the bivalence of belief and explain at the same time the diversity of standpoints, without taking a position on the epistemic nature of justification, since the truth or falsity of propositions in the actual world is left aside. Therefore, the approach is meta-dialectic and minimally normative: as long as an inferential process does not contain a logical contradiction, it is true with respect to at least one possible world.

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<sup>1</sup> There would be much more to say (and to criticize) about the inference relation between P and Q in W but I leave this thorny question aside for now.

<sup>2</sup> For example, suppose a child goes to his parents and asks them: "I want to kill someone, do I have the right?" or "I want to kill someone, is that wrong?". To this question, it is doubtful, even if the parent is a specialist of argumentation or a philosopher, that he answers: "It depends on the point of view", "It is not right or wrong, but in the current context most people consider it wrong", "Do not do it because it is forbidden by law and you risk going to prison" or "Let me explain why it is not reasonable to be a moral (or deontic) realist". Instead, parents will answer, "Yes, it's wrong" (it's *really* wrong) or "You have no right" (and then they will take their child to the psychiatrist). In other words, if we are forced to recognize that it is difficult to determine the truth-value of certain statements and what bases it, in practice we tend to act as if propositions were true or false.

### *3.2 A possible worlds semantics to characterize disagreement*

From the possible worlds semantics proposed by Lewis for doxastic modality, I suggest characterizing disagreement in the following way. In a world *W*, *S1* and *S2* sincerely disagree about *P* if and only if:

1. In some set of possible worlds *W1*, *P* is true.
2. In some set of possible worlds *W2*, *P* is not true.
3. *S1* expresses *P* and *S2* expresses non-*P*.
4. *S1* has doxastic access to *W1* and *S2* has doxastic access to *W2*.
5. *S1* and *S2* are individuals of the same world.

Note that, on this basis, since the propositions are expressed, *S1* has modal access to *W2*, *S2* has modal access to *W1* and the observer has modal access to *W1* and *W2* (in addition, if he/she believes *P* or not-*P*, he also has doxastic access to *W1* or *W2*). As well, *S1* has epistemic access to some of the content of the belief network of *S2*, *S2* has epistemic access to some of the content of the belief network of *S1* and the observer has epistemic access to some of the content of the belief network of *S1* and *S2*.

## 4. AN INDEXICAL PERSPECTIVE ON DISAGREEMENT

At the beginning of this paper, I explained that, in my opinion, the propositional framework, in its most elementary form, corresponds to the belief network of an individual and that disagreement is a difference of belief. Further, I pointed out that the definition of disagreement as a difference of belief does not seem sufficient, insofar as the content of a belief, from the point of view of the subject, is not only plausible, it is true. Moreover, this is not only the case for factual judgments, but also for evaluative judgements, deontic judgements, etc. Therefore, from the point of view of subjects disagreeing about a proposition such as "shortly after conception, an immortal soul enters into the fertilized egg" (Fogelin. 1985, p. 6), there is no difference in nature between the proposition and its negation. Indeed, in the set of worlds *W1* doxastically accessible to *S1*, the proposition is the case and is therefore a judgment of fact from the point of view of *W1* where this judgement is true. As well, in the set of worlds *W2* doxastically accessible to *S2*, the proposition is not the case and is therefore, in its negative form, a judgment of fact from the point of view of *W2*.

In addition, since there is no essential difference between *P* and non-*P*, there is no essential difference neither between the architecture of the justification of *P* and non-*P* in *W1* and *W2*. For example, in the set of worlds *W1* where it is case that "shortly after conception, an



immortal soul enters into the fertilized egg", then it is also the case that God exists, that he has revealed a message through the Bible writers, etc. In the set of W2 worlds where this proposition is not the case, then it is not the case, for example, that God exists, or that he has revealed a message, etc.

Consequently, the difference between the set of worlds W1 and the set of worlds W2 that characterize a sincere disagreement (i.e. when expressed propositions are contained in the beliefs of the subjects) is a difference of properties, since in one of these worlds, P is the case and in the other, P is not the case. From this difference, S1 and S2, by explicitly expressing propositions that justify P or non-P, exhibit other properties (other facts) of W1 and W2 that they consider causally related to the propositions they support. This causal relation is true in W1 and W2, assuming that the subjects believe that there is a causal relation between the propositions they defend and their justifications. Therefore, from the difference between W1 and W2 expressed in the disagreement, subjects exhibit properties of W1 and W2 relevant to P and non-P. Note that relevance, in this definition, is also indexical, i.e. relative to W1 and W2. For example, if a subject sincerely believes that "shortly after conception, an immortal soul enters into the fertilized egg" because "God exists" and "God sends an immortal soul into the egg", these justifications are relevant to W1, since in W1, God sends an immortal soul into the fertilized egg.

In this perspective, since the worlds W1 and W2 are discernible worlds, any case of disagreement is the result of a "clash" of worlds or the result of something else than a "clash", depending on how one considers a difference of properties. This approach is indexical, because the use of the possible worlds semantics allows to index the truth of the propositional content of a belief not to a certain context, a form of subjectivity, a norm, etc. in the actual world (which is logically problematic), but to a set of possible worlds in which this content is true. The depth or superficiality of the disagreement would therefore be connected to the extent rather than the kind of differences between the worlds in which the propositions constituting the disagreement are true.

## 5. CONCLUSION

The conception of disagreement as presented in this paper may seem strange. It is because it is. Moreover, the problems it raises are many and perhaps insurmountable; when people argue, do not they talk about their world and not about another one? How can we reasonably believe in an infinity of possible worlds that physically exist? How to distinguish

a reasonable argument from a fallacious one? How is the disagreement resolved?

However, it has the merit, in my opinion, of reflecting the idea of ordinary sense that disagreements arise when and because individuals "do not live in the same world". In a certain way, this is true. They live physically in the actual world, but doxastically in worlds that are sometimes very far from it and very far from each other. Moreover, from a methodological point of view, the indexical approach helps to distinguish the question of epistemic truth from that of doxastic truth. Of course, the analyst of argumentation knows that the Earth is ellipsoid, that the existence of an immortal soul is not provable in the same way as the biological processes involved in the development of the foetus or that Donald Trump often lies. Yet some subjects with an operational cognitive system believe that the Earth is flat, that the existence of an immortal soul is provable in the same way as the biological processes involved in the development of the foetus or that Donald Trump is trustworthy, with reasons and reason (even though they are wrong).

Furthermore, it seems to me that individual belief systems are rarely homogeneous. Indeed, it often happens that two systems contradict each other even though the argumentative exchange "takes place within a context of broadly shared beliefs and preferences" (Fogelin, 1985, p. 4). For example, a Christian may believe that God created the world, but not in seven days, a biologist may believe in the reality of biological processes while believing that the love he/she has for his/her friends is not reducible to chemical attachment processes or an evolutionary function, etc.

In conclusion, I would like to echo Marc Angenot's incipit of *Dialogues de sourds* (quoting Saint-Jérôme speaking of the controversies between Christians and pagans): "We judge each other the same way: we seem crazy to each other" (Angenot, 2008, p. 7). However, I do not think we are all crazy. Why, how are we not crazy? Because our reason is so broad, that it embraces, to a certain extent, the diversity of *possibilia*.

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