

WHY RIP MATTERS? REEXAMINING THE PROBLEM OF COGNITIVE DYNAMICS

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ABSTRACT: The aim of this paper is to reexamine the importance of Rip van Winkle's case for the problem of cognitive dynamics. First I shall present the main problem of cognitive dynamics. Then I shall explain the relevance of Rip's case to this problem. After that I shall provide a short presentation of the main solutions to this problem. I shall explicate the problem concerning the manner in which philosophers who propose those solutions defend their response to the question of Rip's case. My argument shall be that they defend their response either in overly dogmatic or in circular way. Finally, I shall suggest a way out of that problem.

KEYWORDS: cognitive dynamics, belief retention, indexicals, propositions

1. The Problem of Cognitive Dynamics

In short, *cognitive dynamics* is an investigation of conditions required for either the retention of or the change in propositional attitudes. More extensively, the subject of cognitive dynamics is an investigation of conditions needed for the persistence of a propositional attitude – such as tokens of belief, hope, fear etc. – through time, as well as of those needed for such propositional attitudes to cease to exist at a given time.¹

Following Joao Branquinho, I shall note some basic assumptions about propositional attitudes that shall be assumed throughout this paper. I shall suppose that a propositional attitude is a relational mental state. As its relata we have subjects on one side and a certain type of abstract objects, called *propositions*, on the other.²

¹ Cf. Joao Branquinho, "The Problem of Cognitive Dynamics," accessed January 12, 2021, <http://www.joaomiguelbranquinho.com/uploads/9/5/3/8/9538249/cog.pdf>, 1, David Kaplan "Demonstratives: An Essay on the Semantics, Logic, Metaphysics, and Epistemology of Demonstratives and Other Indexicals," in *Themes From Kaplan*, eds. Joseph Almog, John Perry and Howard Wettstein (New York, Oxford: Oxford University Press, 1989), 537-8.

² Branquinho also refers to them as *thoughts*. Branquinho, "The Problem of Cognitive Dynamics," 1. Here I refer to them as propositions, not because I propose Russellian way of explaining the structure of propositions, as opposed to Fregean (Frege uses the term "thought"), but because I

A proposition is the content of a propositional attitude. The most important type of propositions for this paper shall be the *singular* propositions. These are the propositions that are about a particular object.³ A propositional attitude that has this type of proposition as its content – such proposition that can be expressed by a sentence which contains at least one indexical referring term (these propositions shall be called *indexical* propositions) – shall be the most interesting case of a propositional attitude for those who dwell on cognitive dynamics.⁴ The focus of this paper shall be on indexical propositions that are about particular times. However, it should be noted that there are indexical propositions that are about particular places, as well as those that are about objects that can be identified by means of several sensory modalities.⁵ Also, a belief shall be considered as a paradigmatic case of a propositional attitude.

Philosophers who deal with cognitive dynamics notice the following problem regarding beliefs that have indexical propositions as their content. There are cases in which a subject has to readjust the verbal term they use in order to express their belief at a specific time – such beliefs have indexical propositions as their content – in order to retain that belief at some later time. We shall see that situation becomes even more problematic when we find out that the verbal terms which are *prima facie* considered as appropriate means for a subject to use in order to retain their initial belief, are actually inappropriate.⁶

Before I proceed to that, due to the existence of the aforementioned problematic cases, a thesis that Branquinho refers to as *the central problem of cognitive dynamics* can be formulated. Branquinho formulates the problem by asking the following question: which circumstances must obtain in order for us to say that a subject has retained their belief from a time t ; that is which sentence (with an appropriate indexical expression) should a subject be inclined to accept at time t' – which is after time t – in order to retain the belief from a time t ?⁷

Let me clarify the situation with a help of the famous example. Suppose that a person on a particular day – that shall be called d – says “Today is a beautiful day” while truly believing in that. Which conditions must be satisfied, that is, which

consider the term “proposition” more neutral than the term “thought”, at least given this type of problematics.

³ Branquinho, “The Problem,” 1.

⁴ Cf. Branquinho, “The Problem,” 1-2.

⁵ Branquinho, “The Problem,” 2.

⁶ Branquinho, “The Problem,” 2.

⁷ Branquinho, as well as Kaplan, notices an analogue problem that arises when a propositional attitude is changed. However, I shall focus on the problem that arises due to its retention. Cf. Branquinho, “The Problem,” 2-3, Kaplan, “Demonstratives,” 537-8.

sentence should that person be inclined to accept on the following day – that shall be called $d+1$ – in order to retain their previous belief? The answer that probably first comes to mind, to people like Gottlob Frege, David Kaplan and others, is the following – that person must be inclined to accept the sentence “Yesterday was a beautiful day” on $d+1$.⁸ This claim, which hints at the possible solution to the problem of belief retention, Branquinho names the *natural realignment claim*.⁹

He offers two different readings of this claim. The first one is called the *necessity claim*, and the second one the *unqualified sufficiency claim*.¹⁰ According to the necessity claim, in order for a person from the previous example to be able to retain their belief it is *necessary* for them to be inclined to accept the sentence “Yesterday was a beautiful day” on $d+1$. On the other hand, according to the unqualified sufficiency claim, in order for this person to retain their belief it is *sufficient* that they are inclined to accept the given sentence on $d+1$.¹¹ Branquinho uses this difference between two readings of the natural realignment claim in order to define a more precise role for Rip’s case in the problem of cognitive dynamics. In the following chapter, I shall analyze to what extent is this Branquinho’s attempt successful.

2. The Case of Rip van Winkle

The natural realignment claim can be criticized either by criticizing the necessity claim or by criticizing the unqualified sufficiency claim. According to Branquinho’s interpretation, the first type of critique is important in order to demonstrate the relevance of Rip’s case to the problem of cognitive dynamics. In order to become clear what exactly is meant by the necessity claim and what exactly is reconsidered when we criticize it, it is useful to expose the argument that Branquinho offers as a possible justification for this claim. Branquinho thinks that this argument can be used by representatives of different solutions to the problem of cognitive dynamics – obviously, as long as they accept the necessity claim itself. This is the argument:

⁸ Branquinho, “The Problem,” 3. Frege did not consider the problem of cognitive dynamics specifically, although many commentators attribute such intuition to him and use it either to defend their own or to dispute others’ solutions to this problem. Cf. Gareth Evans, *The Varieties of Reference* (New York, Oxford: Oxford University Press, 1982), 192, Gareth Evans, “Understanding Demonstratives,” in *Collected Papers*, ed. Gareth Evans, 291-321 (Oxford: Clarendon Press, 1985), 291-2, Kaplan, “Demonstratives,” 501. On the other hand, Kaplan was the first to formulate the problem of cognitive dynamics and to consider the aforementioned solution as *prima facie* solution, although a problematic one. Cf. Kaplan, “Demonstratives,” 537-8.

⁹ Branquinho, “The Problem,” 3.

¹⁰ Branquinho, “The Problem,” 3-4.

¹¹ Branquinho, “The Problem,” 3-4.

1. Tracking an object over time and/or space is necessary in order to be able, at a later time, to retain the singular indexical belief that was expressed at some earlier time by a certain type of sentences (such as “Today is...” type of sentence from the previous example).
2. Having a disposition for accepting sentences of a certain kind (such as “Yesterday was...” type of sentence from the previous example) at some later times is necessarily involved in tracking.
3. Hence, having such disposition is necessary for belief retention.¹²

Here we should notice something that Branquinho does not mention explicitly enough, but is nevertheless important for the correct understanding of the necessity claim. Namely, the solution to the problem of cognitive dynamics should be able to show us what is necessary for a subject to keep a belief they had on d not just on $d+1$, but on some later day as well. For a subject to retain belief on some day after $d+1$ their inclination to accept the sentence “Yesterday was...” on $d+1$ is not enough; a subject should also be inclined to accept some other appropriate sentences on the days following $d+1$. It seems that Branquinho understands the necessity claim in the following manner: in order for a subject to retain their belief about d on some random later day – that shall be called d' – it is necessary for a subject to be disposed to accept an appropriate sentences on each day between d and d' , including on d' .¹³ Keeping in mind previously formulated argument, having such disposition is necessary for belief retention because this disposition is necessary for tracking days over time.

Hence the understanding regarding the property that should be shared by sentences which a subject has to be inclined to accept at later times. All of those sentences should share some temporal indexical term that refers to a day the original belief is about.¹⁴ By *temporal indexical term* I mean each indexical term that includes some temporal determinant, that is each indexical term whose appropriate use presupposes the possession of knowledge regarding how much time has passed – if not exactly, then at least approximately relative to a particular term – since the day we wish to refer to by that specific expression to the day that this expression is used. Those expressions include phrases such as ‘yesterday,’ ‘the day before yesterday,’ ‘exactly 17 days ago,’ ‘last Thursday,’ ‘on the first Saturday of the last month’ *etc.* The point is that a belief can be retained not just because we are inclined to accept sentences like “Yesterday was...” on $d+1$, “Two days ago was...” on $d+2$, “Three days ago was...” on $d+3$, *etc.* – which would be too tedious task as time goes on – but also

¹² Branquinho, “The Problem,” 9.

¹³ Cf. Branquinho, “The Problem,” 7-9.

¹⁴ In a couple of places Branquinho seems to be very close to explicitly accepting this claim. Cf. Branquinho, “The Problem,” 7-9.

by using our knowledge regarding certain properties of those days, as well as our knowledge regarding the positions those days occupy in a general timeline. I believe that this interpretation makes the necessity claim more plausible.

However, Branquinho thinks that not all philosophers accept the necessity claim. According to him, the strongest critique of the necessity claim is provided by Kaplan. Branquinho believes that this critique, which relies on Rip's case, reveals the fact that someone who accepts the necessity claim must give a negative answer to the question regarding Rip's belief retention. If, however, someone were to give a positive answer to this question, they would oblige themselves to reject the necessity claim.¹⁵

I shall not get into the entirety of Rip's story. For my purposes, it shall be enough to say that our unfortunate protagonist – through an unusual series of events – fell asleep one evening and woke up in a morning, not the next one, but twenty years later. Let's suppose that on the day he fell asleep – which I shall call D – Rip had come to a belief that he had been inclined to express with the sentence "Today is a beautiful day." The question that arises is the following: has he retained such belief after waking up from his twenty-year-long sleep, on the day that I shall call D' ?¹⁶

According to Branquinho's interpretation of Kaplan's critique, if we accept the necessity claim we have to give a negative answer to this question. The reason for that lies in Rip's inability to sincerely and reflectively accept, or be inclined to accept, sentences such as "Yesterday was a beautiful day" on $D+1$ – the day following D – which he, according to the necessity claim, should be able to do in order to retain his belief in the following days, including D' . It seems that Branquinho claims that Rip should not be able to do such thing since he had *systematically and massively* lost track of the time.¹⁷ According to this author, the impossibility of Rip's belief retention is an unacceptable consequence for Kaplan, so he rejects the necessity claim. More precisely, Branquinho claims that Kaplan rejects the 1st assumption of the previous argument, according to which tracking objects over time is necessary for belief retention.¹⁸ The relevance of Rip's case to the problem of cognitive dynamics would thus consist in the revelation of inconsistency between accepting the necessity claim and giving a positive answer to the question regarding Rip's belief retention.

¹⁵ Branquinho, "The Problem," 9.

¹⁶ Cf. Branquinho, "The Problem," 9, John Perry, "Rip van Winkle and Other Characters," in *Cognitive Dynamics*, ed. Jerome Dokic (Stanford: *European Review of Philosophy* 2, 1997), 35-6.

¹⁷ Branquinho, "The Problem," 9.

¹⁸ Branquinho, "The Problem," 9.

Does Branquinho's interpretation of Kaplan's critique provide a proper view of the relevance of Rip's case to the given problem? According to the necessity claim, in order for Rip to be able to retain his initial belief on D' it is necessary – among other things – for him to be inclined to accept the sentence “Yesterday was a beautiful day” on $D+I$, and to do it sincerely and reflectively. Branquinho thinks that the positive answer to the question of Rip's belief retention brings on suspicion regarding the necessity claim, since in that case Rip retains his initial belief on D' without being inclined to accept the sentence “Yesterday was a beautiful day” on $D+I$, at least not sincerely and reflectively.

But, is Rip truly not inclined to accept the given sentence on $D+I$ in a sincere and reflective way? In order for one to be inclined to do something, it is enough that they would do it given the appropriate circumstances, but it is not necessary to have such circumstances obtained. In order for Rip to be inclined to accept the sentence “Yesterday was a beautiful day” on $D+I$ he does not have to find himself in circumstances in which he could actually do it. It is supposed that Rip has not found himself in such circumstances, since he had slept through $D+I$ and one cannot accept the sentence while asleep, at least not sincerely and reflectively. However, it is unclear why he would not have accepted the given sentence in a sincere and reflective manner had he been awake on $D+I$. This is the reason why the positive answer to the question regarding Rip's case does not shed the doubt on the necessity claim – at least not by shedding doubt on his inclination to accept the sentence “Yesterday was a beautiful day” – since it seems that Rip does indeed have the appropriate inclination.

Does then Rip's case shed doubt on the (unqualified) sufficiency claim, since it does not shed the doubt on the necessity claim? In order for that to be the case, Rip must satisfy the sufficient conditions for belief retention, without having such belief. This is problematic for two reasons. First of all, Rip does not fulfill such conditions, at least not if the (unqualified) sufficiency claim is understood as analogous to my more precise formulation of the necessity claim; and there is no reason why it shouldn't be understood as such. In that case, in order for Rip to retain his belief on D' , it is sufficient for him to have a disposition for the acceptance of appropriate sentences on those days between D and D' , including D' . We do not have to get into details regarding which sentence would be appropriate on D' , although it would probably go something like this: “Exactly twenty years and one day ago, it was a beautiful day” or “On a particular date twenty years ago, it was a beautiful day.” What would, however, be a necessary condition that this type of sentences ought to satisfy is that such sentences should be about D . Nevertheless – as it is assumed – on D' Rip is inclined to accept the sentence “Yesterday was a beautiful

day” that is not about *D*. Since he is inclined to accept this sentence it appears that, on such particular day, it seems to be impossible for him to be inclined to accept any other sentence that includes a temporal indexical expression that refers to *D*. Thus Rip's case could not qualify as a counterexample to the (unqualified) sufficiency claim.¹⁹

On the other hand, it is problematic that Kaplan himself did not consider such a case as a counterexample to the (unqualified) sufficiency claim and instead considered it as a counterexample to something like the necessity claim. The reason for this is that he considers a positive answer to the question of Rip's belief retention as a difficulty for the solution to the problem of cognitive dynamics, instead of a negative one. According to him, a negative answer is in accordance with the solution.²⁰ That is why it seems that Rip's case, *i.e.* a positive answer to the question regarding the case, must somehow put in question the necessity claim.

At first, a possibility arises from the considerations of the previous paragraph. According to the necessity claim, in order for Rip to retain his belief, he must be inclined to accept a sentence that includes a temporal indexical expression that refers to *D* on *D'*. However, as it was exposed in the previous paragraph, on *D'* Rip is inclined to accept a sentence that is about *D'-I*, so it seems impossible for him to satisfy this necessary condition. That seems to be why Kaplan claims that Rip has lost track of the time, so it seems as if we have to deny his belief retention – if we accept the necessity claim, that is. Kaplan is not bothered by Rip's lack of inclination to accept the sentence “Yesterday was a beautiful day” – as Branquinho claims to be the case – but is instead bothered by Rip's inclination to accept such sentence on *D'*, which leads to his lack of inclination to accept an appropriate sentence on that day.

I think that it is useful to present the results of the considerations so far, as Branquinho does, in the form of an argument in favor of the (more precisely formulated) necessity claim. The assumptions of such argument shall be specified by referring to tracking the specific and relevant-for-our-case type of objects – days – instead of referring to the objects in general. It is important to note that tracking days is not exactly analogous to tracking three-dimensional objects. The latter requires more or less constant perceptive contact with the objects.²¹ However, when it comes to days, it is impossible to keep track of them in such a manner. When a certain day passes, there is no way for us to run into it again in the same way, at some time in the future, as it is the case with three-dimensional objects. This is why

¹⁹ This is the reason why it cannot serve as a counterexample to the qualified sufficiency claim, that is created by including some additional conditions. Branquinho, “The Problem,” 7.

²⁰ Cf. Kaplan, “Demonstratives,” 537-8.

²¹ Cf. Evans, “Understanding,” 310-1.

it is impossible to retain the constant direct contact with a certain day.²² How is it, then, possible to keep track of day over time? Possible ways to do this will be discussed later in this paper. For now, there is one more thing left to note – that “keeping track of day over time” means to keep a day in our cognitive view and in that way be able to have a belief regarding it at some time in the future.

Also, instead of the two standard assumptions, my argument will include three of them. The advantage of such argument will become clear in the following chapter, in which I shall consider different solutions to the problem of cognitive dynamics. Then the importance of Branquinho’s hidden assumption for the problem of cognitive dynamics shall become obvious. Until then, the new argument in favor of the necessity claim is as follows:

1. Tracking a day *d* over time is necessary in order for one to be able to, on some day in the future, retain a singular indexical belief that was, on *d*, expressed by a sentence that included a specific temporal indexical expression that referred to *d*.
2. Keeping track of the time regarding *d* is necessary for tracking *d* over time.
3. The possession of disposition to accept sentences that include specific temporal indexical expression that refer to *d* on the future days is necessary for keeping track of the time regarding *d*.
4. Hence, the possession of such disposition is necessary for belief retention.

Philosophers concerned with the problem of cognitive dynamics as a rule do not make a difference – or, at least, nothing in their writings suggests such difference – between keeping track of the time regarding *d* and tracking *d* over time. Moreover, it seems that the general view is that tracking *d* presupposes keeping track of the time regarding *d*. I do not think that this is a trivial assumption. Keeping track of the time regarding *d* is one way to track *d*. However, it is not clear why it should be the only one. We shall see that some philosophers claim that a belief regarding a certain day can be retained by memory. I believe that in such case we would not have to keep track of the time regarding *d* in order to be able to track *d* over time. Keeping track of the time regarding *d* presupposes the possession of certain knowledge regarding the place occupied by *d* relative to other (particular) days. If we accept the assumption 3 of the argument in favor of the necessity claim, that knowledge is manifested in the possession of disposition to accept appropriate sentences on certain days. Such knowledge, however, is not necessary for belief retention through memory.

After this consideration of the correctness of Branquinho’s interpretation of Kaplan’s view on the relevance of Rip’s case for the given problem, we are finally

²² Perry, “Rip van Winkle,” 35.

able to ask the following question – is Rip’s inability to retain his belief an acceptable consequence? The views of the philosophers concerned with the problem of cognitive dynamics differ regarding this issue. Kaplan, who was the first to react to this consequence, considers it problematic. As he states, Rip’s inability to retain his belief – given his loss of track of the time – *seems strange*.²³ Kaplan does not give a particular explanation for this impression; thus it seems to be an intuitive one. John Perry agrees with Kaplan regarding the unacceptability of this consequence. However, unlike Kaplan, he bases his belief on a certain argument that will be examined more closely in the following section.²⁴

On the other hand, Gareth Evans considers this consequence as unproblematic. As the reason for this acceptability, he refers to the obvious fact that someone who lost track of the time cannot retain their temporal beliefs.²⁵ Similarly to Evans, Branquinho claims to be inclined to think that Rip most likely is not able to retain his belief. He claims that someone who systematically and massively loses track of time can hardly retain their temporal beliefs. Moreover, he thinks that maybe it is best to say that someone in the given situation cannot form temporal beliefs at all.²⁶

We have seen why the answer to the question of Rip’s belief retention is relevant to the problem of cognitive dynamics. If someone who offers a solution to this problem accepts the necessity claim they commit themselves to the negative answer to the previous question. If, however, they claim the positive answer they would have to reject the necessity claim. Respectively, they would have to reject at least one of the three assumptions of the argument in favor of this claim. Now I shall briefly consider some of the main solutions to the problem of cognitive dynamics. We shall see that those solutions are, at least in part, results of the stances taken towards the Rip’s case and the necessity claim, *i.e.* towards the assumptions of the argument in favor of it.

3. Solutions to the Problem of Cognitive Dynamics

Although it cannot be said that Kaplan had provided a specific solution to the problem of cognitive dynamics, his view of this problem should be mentioned because of its influence on the latter solutions. Namely, as we have noticed, Kaplan considers the possibility of Rip’s belief retention as an intuitive one, so the necessity claim comes off as problematic to him. Moreover, Branquinho claims that Kaplan

²³ Kaplan, “Demonstratives,” 538.

²⁴ Cf. Perry, “Rip van Winkle,” 35-6.

²⁵ Evans, “Understanding,” 311.

²⁶ Cf. Branquinho, “The Problem,” 9-10.

rejects it; more precisely, Kaplan rejects the 1st assumption of the given argument in favor of this claim, since he does not consider keeping track of days over time as necessary for belief retention.²⁷ However, I do not think that we are given enough textual evidence in order to be able to ascribe the rejection of any specific assumption to Kaplan. All of the assumptions of the argument in favor of the necessity claim seem to be plausible for Kaplan – hence the problem – since he finds the possibility of Rip’s belief retention as equally plausible.²⁸ The idea of a possible solution to this problem can hardly be found in Kaplan; there is only a strong conviction that a problem regarding the original assumptions exists.

Unlike Kaplan, Evans provides a solution to the given problem by accepting the necessity claim and denying the possibility of Rip’s belief retention. On the one hand, there is strong textual evidence in favor of Evans’ acceptance of the 2nd assumption of the necessity claim, since he equates tracking day over time with keeping track of the time.²⁹ Given that, Evans explicitly accepts the other two assumptions – he considers keeping track of the time as necessary for belief retention and the disposition to accept certain sentences as necessary for keeping track of the time.³⁰ As a consequence of accepting the necessity claim Evans accepts Rip’s inability to retain his belief, without noticing any problems. According to him, Rip has lost track of the time and it is not a bit unusual for someone who has lost track of the time to be unable to retain their temporal beliefs.³¹

It can be noticed that Evans defends his answer to the question of Rip by referring to the assumption that is a part of his solution to the problem of cognitive dynamics. Here I shall not get into the more detailed examination of Evans’ solution.³² Just as it is the case with other solutions, my main goal here is to examine a solution given its context, that is based on the authors’ views regarding Rip’s case and the assumptions of the argument in favor of the necessity claim.

Perry’s solution to the problem of cognitive dynamics follows, in general, Kaplan’s view on this problem. Similarly to Kaplan, Perry considers Rip as able to retain his belief and, thus, is inclined to reject the necessity claim.³³ At first, it seems unclear which of the assumptions of the argument in favor of the necessity claim Perry would reject. The answer to this question can be examined more properly after

²⁷ Branquinho, “The Problem,” 9.

²⁸ Cf. Kaplan, “Demonstratives,” 537-8.

²⁹ Cf. Evans, *Varieties*, 194-6, Evans, “Understanding,” 309-11.

³⁰ Cf. Evans, *Varieties*, 194-6, Evans, “Understanding,” 309-11.

³¹ Evans, “Understanding Demonstratives,” 311.

³² More on that topic can be found in Evans, *Varieties*, 192-6, Evans, “Understanding,” 306-11.

³³ Perry, “Rip van Winkle,” 14.

examining how, according to Perry, belief retention is possible. Here Perry follows one of Kaplan's ideas as well. When we believe in a certain proposition we always do so under a certain – in Perry's case doxastic – *character*. Character is, simply told, a way in which we believe in a certain proposition. In order to be able to keep our belief in a proposition even after a few changes in the context, we must have an appropriate doxastic character under which we believe in it.³⁴ Besides the notion of doxastic character, another relevant part of Perry's solution to the problem of cognitive dynamics is the notion of *information games*. Information games involve the acquisition and later application of a belief about an object.³⁵ Among other things, they show us ways in which we can retain our beliefs about objects. Here I shall not go into a detailed account of the idea of information games, and shall limit myself to Perry's use of it and the notion of doxastic character in order to describe Rip's case.

Perry claims the following: Rip had, on the day he had fallen asleep, formed a belief that it had been a beautiful day. He believed in it under the character "Today (the day of this thought) is a beautiful day." After he had woken up twenty years later, Rip, thinking that he had woken up after just one night, tried to update his belief in accordance with his thought of the context change by using the character "Yesterday (the day before the day of this thought) was a beautiful day."³⁶ Since his opinion on the context change is wrong, he cannot retain his belief by using this character. However, this does not mean that he cannot do so by using another character. If he has some memories of that day he can retain his belief by using the character "That day (the one that I remember) was a beautiful day." If he, however, does not have any memories of that day, he can still retain his belief by using the character "That day (the day this belief had been formed) was a beautiful day."³⁷

We can notice that the key difference between Perry's take on necessary conditions for belief retention and that of those who accept the necessity claim lies in the different understanding of what makes a sentence an appropriate candidate to accept at later times in order to be able to retain the original belief. According to the necessity claim – as I had previously noticed – that sentence must include a temporal

³⁴ The notions of proposition (or content), context and character Perry inherits from Kaplan, but while Kaplan applies them to sentences Perry applies them to beliefs (thus the notion of *doxastic character*). Cf. Perry, "Rip van Winkle," 19-24.

³⁵ Cf. Perry, "Rip van Winkle," 24-31.

³⁶ Updating is, according to Perry, an information game in which we infer something about an object about which we have a belief; however, this inference is not based on observed or inferred movements or changes in object our belief is about, but is instead based on changes in our situation or some general change (such as the passage of time). Cf. Perry, "Rip van Winkle," 29-30.

³⁷ Perry, "Rip van Winkle," 35-6.

indexical term that, in Rip's case, refers to *D*. Perry accepts the condition that such sentence has to be about *D*. However, he does not think that an indexical expression that refers to that day has to be a *temporal* indexical expression. Characters such as those that Perry suggests in order for Rip to be able to retain his belief include indexical expressions (“that day,” “the day I remember,” “the day that this belief was formed”), but these are not temporal indexical expressions. The temporal indexical expressions refer to a particular day relative to the day of their utterance. By using a particular temporal indexical expression we cannot refer to the same day independently of the day of its utterance.

This is not the case with Perry's expressions. By using Perry's proposed characters Rip could – given that Perry is indeed right – retain his belief not just on *D'*, but on any other day as well. Moreover, in order to be able to refer to any day we wish to refer to by the use of some temporal indexical expression, we ought to have at least some vague knowledge of the positions that the day of our uttering the temporal indexical expression and the day we wish to refer to hold in the entire timeline. In other words, we need to have at least vague knowledge of the time that had passed between those days. That is, we need to keep track of the time. This is not the case with Perry's expressions. In order to be able to use them to refer to the day we wish to refer to we do not need to have any idea of how much time has passed since that day.

That is why I think that Perry's solution to the problem of cognitive dynamics rejects the 2nd assumption of the argument in favor of the necessity claim. Perry claims that belief retention is possible even once track of the time is lost by some other way of tracking a day (by memory, for example).³⁸ Although Perry does not state this explicitly, given our previous considerations – as well as the fact that Perry does not say anything that would support the claim that he rejects the 1st or the 3rd assumption, nor that he accepts the 2nd one – I think it would be for the best to ascribe to him such view of the argument in favor of the necessity claim.

Finally, there is Branquinho's solution, unique among the solutions to the problem of cognitive dynamics insofar as he rejects the necessity claim yet claims that Rip cannot retain his belief. Branquinho, like Perry, rejects the necessity claim. He does so since he believes that someone, Jones for example, who accepts the sentence “Today is a beautiful day” on *d* at 23:58 p.m., could retain belief expressed by such sentence without being inclined to accept the sentence “Yesterday was a beautiful day” on *d+1* at 00:01 a.m., since he did not know if midnight had passed.³⁹

³⁸ This is supported by the textual evidence according to which it is certain that Perry thinks that Rip had lost track of the time. Cf. Perry, “Rip van Winkle,” 35-6.

³⁹ Branquinho, “The Problem,” 10.

Branquinho thinks that Jones tracks d in a certain manner, without having the appropriate disposition, since he believes that tracking the relevant day in some way is necessary for belief retention. Moreover, Branquinho explicitly accepts the 1st assumption of the argument in favor of the necessity claim.⁴⁰ Which assumption he rejects then? Just like in Perry's case, I shall not immediately provide the answer to this question, but shall instead focus on the positive things Branquinho has to say about belief retention. Like Perry, Branquinho thinks that memory is important for belief retention. Namely, he thinks that in order for a subject to be able to retain their belief that p , it is necessary that they remember that p (this is an explanation for Jones' case as well).⁴¹ If someone remembers that d was a beautiful day, it is one way in which they can track d and thus retain their belief.

Which assumption of the argument in favor of the necessity claim does Branquinho reject then? Keeping the original argument (the one with two assumptions) in mind, I would claim that Branquinho would reject the 2nd assumption. However, as was previously mentioned, I believe that such argument is a consequence of the failure to make a difference between notions of tracking day over time and keeping track of the time. Thus, keeping in mind the improved version of the argument, it is best to understand Branquinho as claiming that keeping track of the time is not necessary for belief retention, thus rejecting the 2nd assumption. The rejection of the 3rd assumption would be problematic since it is unclear how we could keep track of the time without a disposition to accept appropriate sentences. On the other hand, Branquinho, similarly to Perry, proposes a way for tracking a day without keeping track of the time – through memory.

I think that Branquinho's views of the problem of cognitive dynamics face certain difficulties. First of all, it is questionable whether the case of Jones represents a better argument against the necessity claim than the Rip's case. Namely, Branquinho seems to understand the necessity claim as an assertion that someone, like Jones, could retain their belief about d at some time t on $d+1$, only if they were inclined to accept the sentence "Yesterday was..." at the same time t . However, I fail to see why the necessity claim could not be understood in a less rigid manner. This claim could be understood as an assertion that in order to be able to retain their belief about d at t on $d+1$ a person has to be inclined to accept the sentence "Yesterday was..." on $d+1$, but not necessarily at t , but somewhat later.

Our inclination to claim that Jones had retained his belief at 00:01 a.m. on $d+1$ could be explained in this manner. It is supposed that he is not inclined to accept the sentence "Yesterday was a beautiful day" at a given moment, since, knowing that it

⁴⁰ Branquinho, "The Problem," 10.

⁴¹ Branquinho, "The Problem," 11.

is somewhere around the midnight, he is unsure whether midnight had already passed. However, Jones most likely would be inclined to accept such sentence a bit later, as soon as he thinks that enough time has passed. Memory can play a certain role in Jones' having this inclination; however this explanation of Jones' belief retention seems, unlike Branquinho's, to be relying primarily on Jones having a certain disposition. Since Jones is inclined to accept the appropriate sentence at a later time, we shall also say that Jones had that very same belief even at the previous time t . Otherwise, it would remain unclear in which way the belief's vanishing at first and later reappearance could be explained. I think that this, somewhat less strict, understanding of the necessity claim, seems appropriate, at least at first glance. In that case, we could wonder whether Rip's case presents a bigger problem for the necessity claim than Jones'.

This leads us to the second problem. It concerns Branquinho's view of Rip's case. Is Branquinho's denial of the possibility of Rip's belief retention in accordance with his solution to the problem of cognitive dynamics? Nothing in Rip's narrative seems to suggest that he could not remember that D was a beautiful day. Moreover, given Rip's inclination to express the belief he had on D with the sentence "Yesterday was a beautiful day" on D' , and if we assume – just as Perry did – that such belief is the only explicit belief that Rip had formed on D ,⁴² it seems as though he does indeed remember that D was a beautiful day. Couldn't we, then, say that Rip had been tracking the day he fell asleep, and, thus, had retained his belief about that day?

Here Branquinho becomes somewhat unclear, by claiming that we could not say that Rip retained his belief, since he had lost track of the time systematically and massively.⁴³ Branquinho seems to claim that, although the loss of track of the time is not *necessarily* incompatible with the possibility of belief retention, it is so in cases of systematic and massive loss of track of the time. I do not think that this claim is of any help to Branquinho's argument. His reasons against Rip's ability to retain his belief remain unclear. What does it mean to say that someone had lost track of the time *systematically*? Does that mean that it happens to them often, *i.e.* that they more than once had overslept more than one night at the time? If that were the case, then it would be untrue that Rip had systematically lost track of the time. It is presupposed that the only way that his track of the time differs from other people's is that he had once, without realizing and under the influence of some mysterious forces, slept for twenty years. Other than this there were never any similar incidents

⁴² Perry, "Rip van Winkle," 36.

⁴³ Cf. Branquinho, "The Problem," 9-10.

involving him. Is one such incident enough to claim that he has systematically lost track of the time?

Perhaps the importance of this incident lies in its duration, as Branquinho seems to suggest.⁴⁴ In that case, this objection would be more suited for the case of Rip's *massive* loss of track of a time. However, why would the duration of his sleep turn out to be of such great importance? Would Branquinho claim that someone who sleeps over the period of two continuous nights, due to being extremely tired, could not retain their belief after waking up as well? It seems not, since he claims that the main reason for Rip's inability to retain his belief is his *massive* loss of track of the time, and not just any loss of track of the time. I am not sure whether sleep that lasted for two nights could qualify as a *massive* loss of track of the time. In any case, couldn't Rip, at least in principle, be able to update his beliefs after realizing that he had slept for twenty years, in the same way as someone who had slept for two nights? It seems as though the difficulties that Rip would face would be more of a psychological type, rather than a conceptual one. It would be way more difficult for someone to update their beliefs had they slept for twenty years than it would have been had they slept for two days. However, it is unclear why it shouldn't be *possible at least in principle* for someone to do so. Thus, it remains unclear why does it really matter whether Rip had slept for twenty years or for two days.

This is why Branquinho's argument against Rip's ability to retain his belief does not seem convincing. Moreover, Rip's ability to retain his belief – in case it is possible – looks like a much bigger issue for the necessity claim than the case of Jones. I do not see a convincing manner in which we could understand the necessity claim as if Rip could have the disposition to accept the appropriate sentences, *i.e.* those including temporal indexical expression referring to *D*. This is another confirmation of Rip's relevance to the consideration of the given problem.

4. Rip's Deeper Relevance to the Problem of Cognitive Dynamics

We have seen why Rip's case is relevant to the problem of cognitive dynamics. Now I shall provide a deeper understanding of this relevance. Kaplan and Perry think that Rip can retain his belief. Evans and Branquinho disagree. Although different, I believe that both of those types of answers to the question of Rip's belief retention share *two important characteristics*.

The first one is that all the mentioned philosophers think that *the adequate solution to the problem of cognitive dynamics should have the correct answer to this question as a consequence*. If a solution to this problem as its consequence has an

⁴⁴ Cf. Branquinho, "The Problem," 9-10.

answer to this question that is perceived as wrong that solution would be deemed as inadequate. This could be formulated in a more direct manner, without referring to someone's opinion – *the adequate solution to the problem of cognitive dynamics must have the correct answer to the question regarding Rip as a consequence*. I believe that all of the previously mentioned philosophers would agree with this statement. Due to this, giving the correct answer to the given question is of great importance to the problem of cognitive dynamics. Since the question, as I have previously noticed, cannot be answered in a manner everyone would immediately agree with, it is of great importance to look closer at the manner in which the answers are defended.

This leads us to another important characteristic that is shared by the different philosophers' answers. This similarity lies *in the manners their answers are defended*. Namely, they do so in one of the two following manners: they either rely on their own *intuitions* regarding the case in question; or they rely on the fact that their – allegedly adequate – solution to the problem of cognitive dynamics *has their own answer as a consequence*.

We have seen that Kaplan sees the problem in denying the possibility of Rip's belief retention. Although he does not explicitly rely on intuitions, this seems like the most appropriate understanding of his justification for his answer to the question of Rip. Evans, however, bases his answer on the obviousness of the assumption that someone who loses track of the time cannot retain their temporal beliefs. Evans accepts this assumption as a part of his solution to the problem of cognitive dynamics. Perry provides a different answer, but defends it in the same manner. In defending his answer, Perry relies on the notions of doxastic character and information games, which he uses to formulate his own solution to the problem of cognitive dynamics.

Finally, the only answer to the question of Rip that perhaps might be characterized as not sharing this other characteristic is Branquinho's. He does not claim that he simply feels that Rip cannot retain his belief – thus, he does not rely on his intuitions – nor his answer seems to be justified by referring to the ideas he bases his solution to the problem of cognitive dynamics on. However, his justification of his (negative) answer to the given question is problematic, as we have already seen. The positive answer to this question seems more in accordance with his solution to the problem of cognitive dynamics. However, if that were the case, Branquinho would have to defend his (now positive) answer by referring to his own solution to the given problem. But, even if it were that way, what exactly is the problem with the way Branquinho and others defend their answers?

A justification of a certain claim that relies on intuitions becomes especially problematic in cases of a serious conflict over the given claim. We have seen that philosophers disagree on the matter of whether Rip could retain his belief. Referring to intuitions in order to solve this problem does not seem like a fruitful project. Evans, like Kaplan, could probably refer to his intuitions, although their answers differ.

If relying on intuitions turns out to be a problem in this case, what is problematic with relying on one of the solutions to the problem of cognitive dynamics? A justification of a certain claim that is based on the fact that such claim is a consequence of a solution to a certain problem or a theory is not problematic *per se*. However, I do think that it is so in this case. If Rip's case should serve as an adequacy test for the solution to the problem of cognitive dynamics – and we have seen that it should according to philosophers engaged in this problem – we shall encounter a difficulty in justifying the answer to the question regarding Rip by referring to the solution to the given problem. Namely, since Rip's case represents an adequacy test for the solutions to the problem of cognitive dynamics, the justification of a certain solution will, in part, consist of it having the correct answer to the question regarding Rip as a consequence. But what *is* the correct answer to this question? If the answer to the question is defended by referring to it being the consequence of a given solution, it seems as if we are trapped in a vicious circle of reasoning. A certain solution is defended by referring to it having a certain answer as a consequence, while that same answer is defended by referring to it being the consequence of a given solution. This does not seem right. That is why I believe that this type of justification of an answer to the given question is not satisfying.

But is there a better way available? My answer to this question is positive. However – someone could perhaps claim – would not any argument that has a certain answer to the question regarding Rip as its conclusion also serve as a solution to the problem of cognitive dynamics? I do not think that this is the case for two reasons. First, the problem of cognitive dynamics does not refer to the Rip's case exclusively, but to many other cases as well. It seems unlikely that the argument – or some version of it – that has certain answer to the question regarding Rip as its conclusion, would also provide an answer to the questions regarding other cases. The other reason is that if the Rip's case should serve as an adequacy test for the solutions to the problem of cognitive dynamics then from that solution should follow not only *that* Rip can(not) retain his belief, but *how* is that (im)possible as well. On the other hand, the type of argument that I find desirable would show that Rip can(not) retain his belief, but not necessarily how it is (im)possible as well. This is a task for the solution to the problem of cognitive dynamics.

It should be noted here that Kaplan, Evans and Perry have a special motivation to take a specific stance regarding the question of the possibility of Rip's belief retention and the necessity claim. Namely, Kaplan and Evans, just like Frege, think that certain types of expressions – that include the indexical expressions – include a specific semantic component that has a double role. Firstly, it should determine the reference of a given expression and – secondly – it should do so by the use of cognitively significant mental content. Kaplan, as well as Perry, has *character* as such a semantic component, while Evans uses the Fregean notion of *sense*.⁴⁵

In spite of the differences between those notions, the possibility of Rip to retain his belief presents the threat for both of the solutions in the same manner. More precisely, if he could retain his original belief (the one that was about *D*) even on *D'* by the use of the expression “yesterday,” than a given semantic component could not satisfy both of the previous conditions. If an object that Rip's belief is about is determined by the expression “yesterday,” *i.e.* if he thinks of that object as of the day that preceded *D'*, then his belief would not be about *D*, but about the day right before *D'*, that I shall name *D'-1*. However, in that case he would have not retained his original belief, for the simple reason that the belief that *D* had been a beautiful day could be true while the belief that *D'-1* had been beautiful could be false at the same time. If, however, Rip's belief is about *D* due to the use of an expression “yesterday,” then it cannot follow from his thinking of an object that his belief is about as of a previous day. Since he fails to see which other expression could Rip use in order to retain his belief, while believing that he can do so, Kaplan encounters a problem to which he does not provide a solution. Evans sees a simple solution to this problem – Rip cannot retain his belief. On the other hand, Perry finds an adequate (at least according to him) alternative to the expression “yesterday” in the expression “that day.”

Now we see that more is at stake when considering Rip's case and the necessity claim than it perhaps seemed to be the case at first. However, this is not the case against what was previously claimed in this chapter. Kaplan, Evans and Perry do not defend – nor they could do so adequately – their answers to the question regarding Rip by referring to the considerations of this paragraph. That rather stands as their motivation behind the answers to the given question. We have seen, however, the type of reasons they actually use in order to defend their answers. Now that I had them presented, as well as what would be a more desirable type of an argument, I shall try to provide such an argument.

⁴⁵ Cf. Evans, *Varieties*, 14-7, Evans, “Understanding,” 124, Kaplan, “Demonstratives,” 505-6, 520-1, 523-4, 529-39, Perry, “Rip van Winkle,” 14-24.

5. An Argument in Favor of Rip's Ability to Retain His Belief

The argument I shall provide here satisfies the conditions I proposed before for this type of argument. As we shall see, the conclusion of this argument shall be that Rip is able to retain his belief. In order to deliver the argument more easily, I shall somewhat change Rip's circumstances, although the argument itself – if one uses enough imagination – can be applied to the original version as well. First, I shall change our hero's original 18th century background into contemporary times. Then, instead of supposing that Rip formed the belief expressed by the sentence "Today is a beautiful day" on D , I shall propose that on D he had formed the belief expressed by the sentence "Today is the last day for paper submission." The belief was formed by his superiors at the university telling him so when he came to inquire on the paper submission on D (in this changed scenario Rip is a university student). As in the original version, Rip had, unknowingly, woken up not on $D+1$, but twenty years later, on D' (some heavy partying might have been involved). The attempt to express his original belief by accepting the sentence "Yesterday was the last day for paper submission" – similarly to the original version – is determined to fail. A question arises – can Rip retain his original belief?

Let me include some additional details into this story. Suppose that Rip, on the day he had woken up, knowing that there is still some chance for his (very tolerant) superiors to accept his paper just one day after the deadline, rushed to the university to deliver his quickly finished paper. How could we explain this act? The usual philosophical method would require referring to Rip's beliefs and desires. In this case, we would claim that he had desire to submit his paper and thus pass the exam and that he had – among other relevant beliefs, such as that there is still a chance for his paper to be accepted on the day after the deadline – the belief he is inclined to express by accepting the sentence "Yesterday was the last day for paper submission" on D' .

We must not yet suppose that he has knowledge that $D'-1$ is the last day for paper submission. It is yet to be determined what day his belief is about. Also, we must not think that we have committed ourselves to claim that the expression "yesterday" that Rip uses on D' does not satisfy the aforementioned two conditions requested by Kaplan and the others. If Rip turns out to be able to retain his original belief that does not mean that we have committed ourselves to the claim that he can do so by using the sentence "Yesterday was the last day for paper submission." His inclination to express the belief in such manner does not mean it is an adequate way to express this belief, nor that he cannot express his belief in some other, more appropriate, manner. What is, however, without a doubt is that if we accept this standard model of explaining human action then Rip has a belief that he is inclined

to express by accepting the sentence “Yesterday was the last day for paper submission” on D' ; that is that he has a belief that a certain day is the last day for paper submission. Without ascribing such belief to him we would be unable to explain his action. What is left to be determined is the exact identity of such belief, *i.e.* what day it actually is about.

I believe that the choice easily comes down to two candidates, days D and $D'-1$. If we suppose that Rip’s belief is about any other day then it would not satisfy the condition of being that belief he would be inclined to express by the acceptance of the sentence “Yesterday was the last day for paper submission” on D' . If Rip would have believed that the last day for paper submission was $D+2$, for example, then he would not be inclined to express that belief in such manner – under, excluding his twenty-year-long sleep, usual circumstances that are supposed to be the case. That is why his belief is either about D or about $D'-1$.

Let us suppose that it is about $D'-1$. In that case the following question arises: in which way is it formed, that is, what is the cause of such belief? If that belief is about D , the answer to this question would be easy – the belief was formed as a consequence of Rip being told by his superiors that “Today is the last day for paper submission” on that day. But, if his belief is about $D'-1$, it seems as if there are no adequate candidates for an answer to such a question. What could cause Rip’s belief regarding the day almost twenty years ago after D , the day he had fallen asleep? Moreover, Rip had been asleep throughout the entire day $D'-1$. There is, however, one answer that seems acceptable. Rip had, on D , formed the belief that it is the last day for paper submission. After he had woken up on D' , believing that he had woken up on the day after D (the day $D+1$), he formed the belief that $D'-1$ was the last day for paper submission. This Rip’s implicit reasoning on D' can be presented in the following manner:

1. Rip believes that D is the last day for paper submission.
2. Rip believes that $D = D'-1$
3. Rip believes that $D'-1$ is the last day for paper submission.⁴⁶

However, according to the 1st assumption of this argument Rip has retained the belief he had formed on D . In order for this reasoning to have Rip’s belief that $D'-1$ is the last day for paper submission as a consequence, it ought to have occurred on D' . Otherwise, it does not seem possible that he would mistake $D'+1$ for D . In that

⁴⁶ An example that is somewhat analogous to this one can be found in Perry, “Rip van Winkle,” 31-2.

case, in order to arrive at the given conclusion, he would have had to believe that D was the last day for paper submission even on D' .⁴⁷

Now we can see that if we suppose that belief necessary for explaining Rip's rushing to the university with paper on D' is about $D'-I$, then we also suppose that he believes that D is also the last day for paper submission. The other option is to claim that belief necessary for the explanation of his act is about D . No matter which option we choose, it will have as a consequence the possibility of Rip to retain his belief that D is the last day for paper submission. Since there are no other plausible options, given that we can hardly provide an acceptable explanation of his belief being about any day other than D and $D'-I$, it seems that Rip can retain his temporal beliefs even after his twenty-year long sleep.

6. Conclusion

What are the consequences of this argument to the problem of cognitive dynamics? If the argument is sound, then all the solutions that accept the necessity claim are inadequate. Out of the examined solutions, this argument would exclude the one provided by Evans. When it comes to Branquinho's and Perry's solutions, this argument does not give us the insight into which one of them is true. It merely shows that Rip can retain his belief, without telling us anything either about the way it is possible, or about the way in which belief retention, in general, is possible. The contribution of this type of argument to the problem of cognitive dynamics lies in its elimination of certain solutions to the given problem as inadequate. However, this type of argument cannot show us what solution is the adequate one. In order to fulfill this important goal of cognitive dynamics another type of argumentation is needed.

⁴⁷ It is interesting to notice that Evans thinks that this type of reasoning is impossible, since the subject is not able to think the 2nd assumption. Evans, "Understanding," 294. The question is whether this is really the case. Why a subject, for example, would not at the same time be able to think of D as of a particular day they remember and of $D'-I$ as of the previous day, while believing that the day they remember is actually the previous day? Even in the case in which such reasoning is indeed impossible, that would only support my argument, since the given belief could not be about $D'-I$ and instead has to be about D .