

Between Gareth Evans and Bill Evans: Andrea Bonomi's Multi-Propositionalism

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Abstract

Evans claims that a sentence should always be considered correct or incorrect at the time of its utterance, to preserve what is called the “stability principle”. To introduce the debate, I refer to some remarks by Kamangar and Perry, who show how Frege could have treated future contingents in a way that would contrast Evans’ claim. I then discuss the more traditional contrast between Frege and Prior on different conceptions of propositions that lies at the core of Evans’ view, and I show how Dummett seems to find a compromise on the use of temporal operators as criticized by Evans. After these two introductory sections, I present the radical criticism of the stability principle made by Bonomi on the ground of an analysis of the speakers’ use of presupposition triggers like “no longer” and “know”. I claim that his analysis concerns more the epistemological limitations of speakers than a semantic justification of a metaphysical view on the indeterminacy of actions and events. From this point of view, his analysis might be a contribution to the semantics of belief updating. In the last section I present what seems to me to be the most relevant contribution of Bonomi’s paper: his multi-propositionalism grounded on the consideration of relations among three kinds of times, the time of the utterance, the time of evaluation, and the time of what is spoken about. It is a new contribution to multipropositionalism under the view of what is needed to take into account in different scenarios.

Keywords: Contexts, Eternal truths, Future contingents, Minimal content, Multi-propositionalism, Presuppositions, Semantics.

1. Fregean Thoughts and Future Contingents

Radical Temporalism (RT), according to Evans, claims that an utterance of a sentence is “correct” when the sentence is true at time t , where time t may not be the time of the utterance. According to Evans’ *stability principle*, if an utterance is evaluated as correct at the time of the utterance, then it must be evaluated as correct in any moment after the time of the utterance. This sounds, at first sight, coherent with the Fregean view of the truth of a thought as “atemporal”. According to Frege, a thought, if true, is true independent of the time in which it is grasped; if true, it has always been true, and it always will be true. As Frege (1918) remarked,

- (1) “Today it is raining” (uttered today)
 (2) “Yesterday it was raining” (uttered the day after)

express the *same thought*, which—if true—is true independently of the time in which it has been expressed. Kripke (2008) denies that, saying that Frege here is wrong about his own principles: a thought is the sense of an utterance, and (1) and (2) are utterances composed of expressions with different senses or modes of presentation (“tomorrow” and “today”). Therefore, they should express different thoughts.¹ However, there are different explanations of the Fregean stance: sentences expressed by (1) and (2) are not “complete” unless the time indication is considered, together with the time of the utterance. The tense of the verb brings about the needed difference that makes the two utterances express the same truth conditions, and therefore they are either both true or both false, allowing Frege to claim they express the same thought. However, and here Dummett comes to justify Kripke’s worry, we need to distinguish the *assertive content* (both utterances express the same content or the same truth conditions) and the *ingredient sense* (where we consider the difference of the expressions that make the two sentences contribute in different ways to a more complex sentence in which they can be embedded).² In other terminology, we may say that although the two utterances express the same truth-conditional thought, they express different cognitive access to the same truth conditions, as also suggested by Küne 2007, speaking of “different ways of articulating” a thought. We might link these differences to what Frege calls “inessential properties” of thought, that is properties that depend on time and on our different ways of grasping the thought. On this idea of inessential properties, Kamangar and Perry (2024) develop a new take on Frege about future contingents.

Frege never made examples of future contingents, but we may wonder what he would say about the following pair:

- (3) “Tomorrow will be raining” (uttered today—let us say at time *t*).
 (4) “Today it is raining” (uttered the day later—let us say at time *t'*).

In principle, this would not change the basic structure: the two sentences express the same truth conditions, that is, they should be true if, at the time indicated

¹ According to Kripke (2008: 201–202), a sentence like “It is raining in Stockholm” is not a complete expression of a thought but needs the completion of the time of the utterance, so that a proper expression of the thought is an ordered pair with the linguistic expression and the time of the utterance $\langle L, t \rangle$, where the time of the utterance is considered a “non-recognized piece of language” (it sounds not so distant from Perry’s idea of unarticulated constituents).

² The distinction between assertoric content and ingredient sense (Dummett 1991: Ch. 2, § 4) can be exemplified in a simple way in this context. Although (1) and (2) express the same assertoric content, something changes if we embed them in a sentence with the operator “where I am” (or “here”) as:

- (1*) “Tomorrow will be raining where I am”
 (2*) “Today it is raining where I am” (uttered the day later)

While both in (1) and (2) we may assume a location as nonarticulated constituent of the utterances, when this constituent (“here” or “where I am”) is explicitly expressed, we realize that, given the different times of the utterance, we are not guaranteed that we are referring to the same location, and therefore (1*) and (2*) may have different truth conditions depending on the location of the speaker, which is not necessarily the same place today and tomorrow.

by the two different utterances, it will be raining or not. The only difference with respect to (1) and (2) is that, in uttering (3), we don't yet know whether the sentence will be true in the future. How relevant is this difference?

Kamangar and Perry (2024) claim that Frege had the tools to align his theory with more recent theories of future contingents. They rely on Frege's distinction about essential and inessential properties of a thought. Inessential properties of thoughts are linked to the fact that the thought is "grasped": whether (and, following Künne, I would also say "how") a thought is grasped does not change the thought itself. There is similarity between grasping a thought and evaluating its truth: like grasping a thought, evaluating a thought as true may depend on time, given that we cannot know whether a thought about the future will be true or false. Shortly put, Frege's view is open to treating both being true and being grasped as inessential properties of contingent propositions. *We* cannot speak of the truth or falsity of a sentence in the future tense before some event happens that makes it true. Therefore, the truth of a thought will be evaluated at the time of the event that makes us recognize the thought as true.³

However, Frege's framework was given before the development of modal logic, and Evans's view deals with what he thinks is a wrong comparison between temporal and modal logic. In the following section, I consider the main argument of Evans against Radical Temporalism, and what lies at the core of his argument: the stability principle. In Section 3, I present Bonomi's criticism of Evans's view and the stability principle, and I will comment on what I believe is the actual range of Bonomi's theory. In Section 4, I give some hints towards the particular form of multi-propositionalism suggested by Bonomi, which appears to be his main contribution.

2. Gareth Evans on Eternal and Relative Truth

Evans criticizes the idea according to which an utterance is evaluated not only at the time of utterance but at different times, changing its truth value depending on the time of evaluation. The idea depends on a similarity with possible world semantics: a sentence uttered at a time t may change its truth value depending on the time of evaluation, just like a proposition may change its truth value depending on possible worlds. It is with the analogy with modal logic that temporal logic emerged, using temporal operators (for future and past) in analogy with modal operators.

On the contrary, Evans claims that we cannot compare times and possible worlds, for this step runs the risk of destroying the notion of truth simpliciter. In modal logic, we may contrast possible worlds with the actual world, which is the privileged world. The correctness of an utterance can vary, depending on possible worlds, but the idea of "possible" worlds relies on the idea of the "actual" world. The point is that we have an idea of "truth simpliciter", which is "truth at the actual world", from which we may derive the idea of "truth at a (possible) world" and the idea of absolute truth. As I have understood Evans, we cannot have a similar passage with temporal logic: we do not have an idea of truth-simpliciter, given that, by definition, truth is relative to the time of utterance:

³ Indeed, Kamangar and Perry's choice is to put this Fregean idea in line with a trivalued logic for which some propositions are at some time neither true nor false. This would put Frege in tune with a supervaluational semantics with truth value gaps, as it has been developed since Thomason 1970.

For any time t , $\text{true}_t(X)$ iff it is raining at t ,

where X stands for any tensed logical sentence. The idea that a tensed sentence is relative to a time seems intuitive, until we ask which idea of truth simpliciter lies behind this relation. To make the point clear, Evans defines radical temporalism as:

(RT) $(\forall t) (\forall S) (\forall u) [\text{Of}(S, u) \supset (\text{Correct-at-}t(u) \equiv \text{True}_t(S))]$.

(RT) claims that the correctness of an utterance depends on the evaluation time, and not on the time of the utterance. On the one hand, (RT) seems innocuous: a sentence can apparently change truth value when uttered at different times. Assuming that yesterday was raining and today is not, an utterance of “It is raining” uttered yesterday is correct, while it is incorrect when uttered today. However, we are not dealing with sentences only, but with utterances. According to (RT) the utterance of a sentence can change the truth value depending on the time of evaluation. But, differently from modal logic, temporal logic (RT) doesn’t leave the possibility of a privileged time on which to define truth *simpliciter*. If all truths are time dependent, then we cannot have a notion of truth simpliciter, which instead is given in modal logic, as truth in the actual world.

Looking for an alternative to radical temporalism, Evans defines two possible solutions, the second of which has the following formulation:

(3) $(\forall S) (\forall u) (\forall t) [(\text{Of}(S, u) \ \& \ \text{At}(t, u)) \supset (\text{Correct}(u) \equiv \text{True}_t(S))]$.

(5) inserts a new feature with respect to (RT): instead of linking the correctness of an utterance to the time I which the uttered sentence is evaluated, it links the correctness of an utterance to the time when the utterance is made. This means that the correctness of the utterance depends on the truth of the uttered sentence at the time when the utterance is made $[\text{At}(t, u)]$. The solution suggested by Evans would make an utterance *correct simpliciter*, and therefore, if correct, it would be eternally correct. Evans’ point wouldn’t be *so* different from Kaplan’s solution: the correctness of an utterance would depend on the truth of the uttered sentence in the possible world and at the time of the context of utterance. Therefore, Kaplan’s solution might be a good approximation of Evans’ desiderata.⁴

Evans’ view contains a reminder of the traditional Fregean stance on the truth of a thought (or proposition) once you fill all the relevant completing conditions (mainly the time of the utterance and the reference of indexicals). Jonny McIntosh⁵ claims:

Since the correctness of an utterance, on (5), depends only on the time of utterance, it has the consequence that an utterance is correct, if at all, relative to every time. Given that an utterance is correct in the relevant sense just in case the proposition thereby expressed is true, it follows that the proposition expressed by an utterance is true, if at all, relative to every time—that propositions expressed by utterances have their truth values eternally (McIntosh 2014: 96).

This is what distinguishes a Fregean approach from a Prior approach to propositions, as Dummett (2006: 12–13) suggested: for Frege, what thought is expressed

⁴ Evans’ paper is from 1979, before the publication of Kaplan’s 1977 paper on demonstratives in Kaplan 1989. Bonomi (2023: 121) remarks that, according to Kölbel, Evans would have rejected Kaplan’s view, but he does not elaborate on that.

⁵ I made McIntosh’s quotation coherent with the content, changing the number, given that McIntosh refers to the third formulation of Evans as (6).

by a sentence depends on the time of the utterance, and therefore—if true—the thought is eternally true. On the contrary, for Prior, a proposition is a kind of “minimal proposition” whose truth value may change over time. “It is raining in Genoa” will express different thoughts in a Fregean view, depending on the time of the utterance, while, for Prior, it expresses the same proposition that changes truth value depending on the time of utterance.

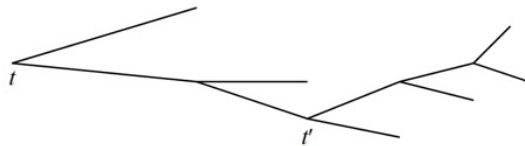
However, Dummett finds a solution to Evans’ criticism of the parallelism between temporal and modal operators. He claims that using temporal operators in analogy with modal operators, allows for diverse possible interpretations. Typically, temporal operators work on sentences at the present tense, and a sentence like “it will rain in Genoa tomorrow” might be construed as

(4) “It will be the case tomorrow that it is raining in Genoa”.

Given this form of presenting future contingents, we still have the possibility to decide how to treat the utterance of a complex sentence like (6) in a way that is compatible with the Frege’s standard view, making the thought expressed by the utterance depending on the time of the utterance of (6) in the possible world of the context of utterance. Furthermore, this step would make temporal operators coherent with the main principle that Evans wants to preserve, that is the stability principle:

(SP) Utterances must be evaluated as correct/incorrect at the time of the utterance. If an utterance is evaluated as correct/incorrect at the time t of the utterance, it will be so evaluated at any moment $t' > t$.

In the literature, the stability principle has been maintained in various forms.⁶ We might maintain the stability principle even under a Branching Time framework, where from a metaphysical point of view we cannot know which branch of the timeline (or which possible world, if we take possible worlds seriously) will give an assessment of the truth of the utterance. A future contingent event is evaluated not at the time of the utterance, but at the time in which the event can be assessed, as in the interpretation of Frege suggested by Kamangar and Perry (2024) presented above. But even so, we may maintain a monotonic perspective: if there is time $t' > t$ when a sentence, uttered at t , is evaluated, this point of time is linked to one and only one past course of events that are linked to the time of utterance (and to possible different future courses of events).



In Prior’s version of Aristotle’s sea battle, if I say at $t < t'$:

(1) Either A or B will fall over the cliff

I know at t that it is true that $A \vee B$ will fall, but I don’t know yet whether A will fall, or B will fall. When, at time t' , I can evaluate the correctness of “A will fall”, I am directly connected with one course of events in the past. We may say that

⁶ I use a simplified version of Bonomi 2023 (§§ 3 and 4), who relies on Thomason 1970.

(2) A will fall over the cliff

is not yet *settled* at time t , but it is settled at a later time t' . Following Thomason (1970), the new stability principle could be expressed as:

(SP*) Utterances must be evaluated as correct/incorrect at the time t in which they are settled (be it the time of the utterance or a later time).

Once an utterance is evaluated as correct/incorrect at the time t at which it is settled, it will be so evaluated at any moment of time $t' > t$.

The stability principle in this more liberal form is somehow maintained in contemporary treatments of future contingents, like MacFarlane (2008: 86-87): relative to a context of assessment, an utterance, once assessed as true at a point of evaluation (a context, a possible world, and an assignment), will remain true at any moment of time $t' > t$ in that world.⁷ Bonomi challenges the stability principle even in the more liberal version, providing an alternative justification for an indeterministic metaphysical view which is often considered at the core of temporal radical relativism. His justification, however, is not metaphysical but semantical.

3. No Longer True: The Future in the Past

Bonomi's argument for an indeterministic view of the future is not metaphysical but semantical, and mainly concerns the use of the future tense inside sentences with the past tense, or, shortly, the future in the past. Take the following assertions:

(9) Leo knew that Lea would leave with the night train.

(10) So, he ran to the station and convinced her to leave with the morning train.

(11) [after convincing her] Leo knows that Lea didn't leave with the night train.

Assuming that "to know" is factive, we should infer that (9) implies the truth of what is said by "Lea will leave with the night train" and (11) implies the truth of "Lea will not leave with the night train". The real point is the future tense inside a past tense sentence. Bonomi comments on the sequence (9)-(11): "Since the future, unlike the past, is (seen as) open, what is settled as true at t may not be settled as true at a time t' later than t ". In (9) it is settled that Lea will leave with the night train, but in

⁷ I don't want to discuss MacFarlane's contribution here, but there is a conceptual point in MacFarlane 2003 that lies behind his criticism of Evans and deserves at least a short remark: his claim that "aiming to the truth" shouldn't play any part in an account of assertion. This perspective conceptualizes the norm of assertion as the set of entitlements and commitments speakers share with their interlocutors, and it avoids linking assertions to judgments, differently from Frege, who views an assertion as the expression of a judgment. Against the traditional Fregean view, MacFarlane claims that lying with an assertion does not violate the constitutive norm of assertion, as if lying were just a problem of morality. But we have here not only a problem of morality, but also a problem of the structure of the assertion. Surely acts of assertion or of promise are performed even if insincere; however, they are what Austin calls "abuses" (see also Searle 1969: §3.2 on insincere promises). The fact that somebody may make an insincere assertion is the point that makes the relation between assertion and truth fundamental for the notion of assertion. It is exactly the fact that people presume that assertions aim to the truth that permits liars to lie. To reduce the notion of assertion to commitment and entitlements is too weak and runs the risk to create a sociological view of assertion. I may say something true and withdraw the assertion if challenged and unable to reply; but, if true, my assertion may still be true, and objectively such, even if my ability to justify it is not robust enough. The *content* of an assertion is independent of the ability of the speaker to justify its truth.

(11) this truth is rejected for intervening factors. The logic of the future in the past seems to be non-monotonic. An assertion settled as correct, therefore, can be found *no longer* true at a later time. What does “no longer true” mean in this case?

To explain the relevance of the expression “no longer true”, Bonomi 2023 proposes the following scenario. There is a famous jazz festival at Montreux. We know now that Bill Evans, the famous pianist, played with his trio at the Montreux festival in 1968. Let us imagine that, according to the program, in 1968 Bill Evans was supposed instead to play with the guitarist Jim Hall (with whom he had played for two famous albums in 1962 and 1966), and two jazz lovers discuss the event:

(12) Leo: “Is it true that tomorrow Bill Evans is playing with Jim Hall?”

(13) Lea: “Yes, it is true”.

(14) Lea: “Tomorrow Bill Evans is playing with Jim Hall”.

However, the following day, Lea comes to know that the program changed, and Bill Evans is going to play with his trio – as it happened – and informs Leo of this change:

(15) Bill Evans is *no longer* playing with Jim Hall.

A normal occurrence of “no longer” would mean that there is an event in the past (Bill Evans playing with Jim Hall) that is no longer going on. However, in this case, the presupposition trigger “no longer” needs to be explained by background information concerning the program. Background information is relevant for deciding when an assertion is settled: in (14) the assertion is settled when we read the original program, while in (15) is settled by the new program with new information. When we interpret the presupposition trigger “no longer” according to the background information, we have to distinguish, in (15) the *presupposition* expressed, and the *assertion* made:

(15/P) *Presupposition*: “No longer” presupposes that the utterance of (14) *was true* at the time of the utterance of (14).

(15/A) *Assertion*: Lea *asserts* that (14) is not true at the time of the utterance of (15).

The best rendering of (15) would be to use “no longer” as an operator, as follows:

(16) It is no longer true that Bill Evans is playing with Jim Hall⁸

In this case, the use of presuppositions shows that we can change the truth value of a proposition in the future tense depending on background information, which typically functions as a point of evaluation that settles the truth of the matter. Bonomi concludes:

the adverb “no longer” signals a change of the truth value which is to be assigned to the statement made by the utterance at issue, depending on the moment at which this statement is evaluated. The idea is that what is asserted by an utterance of a given sentence can be evaluated not only at the utterance moment itself, but at different moments, in function of the time flow. And since a transition from truth to falsehood (and vice versa) is always possible in the case of future oriented statements, there is no reason to stick to the stability principle (Bonomi 2023: 132).

⁸ A small adjustment might make the case more perspicuous. Both (15) and (16) show a slight asymmetry with respect to (14): where in (14) we have an explicit “tomorrow”, this is no longer present in (15) or (16). We have here two different propositions. The case would be better presented if we had a case where the change of program would happen the same day and, therefore, (16) would sound like “It is no longer true that tomorrow Bill Evans is playing with Jim Hall”.

On the basis of this evidence, Bonomi (2023) suggests a formal treatment of statements in the future tense that also embeds a function from background information to the evaluation of a statement in the future tense. I don't discuss the formal treatment, but I want to raise two worries about the theoretical analysis that grounds the formal treatment: one concerning the justification through the analysis of presuppositions in natural language, and the second, depending on the first, concerning the notion of an utterance being settled.

Concerning the presuppositional analysis, it seems that natural language semantics invites the consideration of a change in truth value attribution depending on the changes in the time of assessment and the corresponding background information. The evidence comes from the interesting situation of the use of future tenses inside the past tense, as in (9), and the use of presupposition triggers like "no longer" that presuppose a change in truth value attributions depending on the time of assessment. Bonomi's idea is that the semantics of the future in the past seem perfectly compatible with some metaphysical theories on the indeterminacy of actions and events.

To make the case about Bill Evans stronger, we may use the structure of the argument with an explicit use of the verb "to know", following the structure of the argument as given in (9)-(11):

(14*) Lea *knew* that Bill Evans would have been playing with Jim Hall.

(15*) [after seeing the revised program] Lea *knew* that it was *no longer true* that Bill Evans would have been playing with Jim Hall.

The change in truth value in this case is not dependent on any action performed by our actors, but on a change in the background information. The past tense in (14*) takes us back to a moment $t < u$, where u is the utterance moment of (14*) and the background information refers to time t and not to the utterance time. Bonomi insists on the role of presupposition triggers like "no longer" or "to know". "No longer true" presupposes that something was true before, and "to know", as a factive verb, presupposes the truth of what is known.

However, there is something awkward about the application of this standard presupposition analysis. In particular, I wonder whether in this case the verb "to know" has the factive role philosophers and linguists normally attribute to it. In (14*), and analogously in (9), it seems to me that the occurrence of "to know" is just a variant of "being certain" or "strongly believing", expressing a psychological attitude that is not factive. Bonomi (2013: 27) would answer that this objection "does not mirror the real behavior of the speakers and the way future tensed sentences are used and evaluated (as true or false) in the appropriate circumstances". We need therefore consider what the real behavior of the speakers means in these kinds of circumstances. To do that, it is not incongruous to look for some experimental data about speakers' behaviors concerning the verb "to know". Domaneschi and Di Paola (2019) have shown, with a robust experimental setting, that the verb "to know" is often and *regularly* used not only as a factive verb, but also as standing for "being certain". They claim that there is a fairly common distinction between the literal factive use of "know" and cases of non-literal occurrences of "know".⁹ Following these two

⁹ To be precise, they didn't make experiments on the use of the past tense of "know", and it might be interesting to have further experimental data. However, their results seem easily extendable to past uses of "to know". It is relevant to remark that they are also very critical of the thesis for which the factivity of "know" is a myth, and knowing, as used in normal speech, is reduced to justified belief. On the contrary, they insist that speakers clearly

distinct uses of “know”, we may suggest that, in our case, “Lea knew it was true”, amounts to claiming that something was believed, and “Lea knew it was no longer true” amounts to saying that something strongly believed with some justification (the reading of the old program) is no longer justified. Common speech bypasses the technical definition of knowing as a factive verb and requires more analysis. In a more reasonable understanding, beliefs, not knowledge, change with changing information: the change concerns the point of view of speakers, referring to their strongly held and justified beliefs (that they *assume* to know).

Does this analysis of the different uses of “to know” show that Bonomi’s treatment is of no value? Not really. This analysis of “no longer true” does not show that there is a “change” in the truth value of an assertion from a semantic “objective” point of view but makes Bonomi’s treatment of future contingents a new proposal for a semantics of belief updating.

The second worry, evidently connected with the first, concerns the notion of a proposition being settled at a time, where Bonomi gives a more flexible notion of settledness, partly depending on background information (e.g. the program of a concert). Prior distinguished propositions that could be considered settled at the time of the utterance (for instance, “A or B will fall over the cliff”) and the ones that are not yet settled (for instance, “A will fall over the cliff”).¹⁰ In Bonomi’s examples (9) and (14) the truth of a future event is considered settled given the background information. But, given the problem of the dubious use of the verb “to know” as factive, we might be driven to go back to the less flexible notion of an assertion being settled at the time at which the event happens that certifies the truth of the proposition.

On this stricter requirement, Bonomi’s proposal would still have a fundamental role as an *epistemological* proposal on *how people reason* about future events, and their truth attributions to their own beliefs, and not a *metaphysical* proposal on how a proposition can change truth value at different times depending on background assumptions.

We can therefore recover the stability principle (SP*) from a metaphysical point of view. Both Gareth Evans and Bill Evans would be satisfied: Bill Evans had the opportunity to perform with his trio, albeit without Jim Hall, while Gareth Evans would have been able to uphold his argument for the stability principle, albeit in a modified version. However, the natural language ambiguity of the treatment of the verb “to know” reveals an ambiguity in the way speakers react to truth assignments. The peculiar ways of treating truth and knowledge attributions in the minds of the speakers may leave space of a semantic of truth attribution and belief update that violates the stability principle.

4. Ambiguity of “No Longer True”: Multipropositionalism

Up until now we have been considering only two variables: the time of the utterance and the time of evaluation or assessment. What Bonomi aims at is a logic in which we have to consider three kinds of time: the time of the utterance, the time of the evaluation, and the target time, which is the time *about which* we speak. Often, they are considered together, as in

distinguish cases in which we have literal occurrences of “know” that are factive, and non factive uses that are a form of non-literal uses.

¹⁰ Assuming that, given background information, either one or the other will fall over the cliff, but not both.

(1) Today it is raining (uttered today).

Here the time referred to by the proposition, or *time which is spoken about*, or *target time*, is the time of the utterance itself, and the proposition expressed is evaluated at the time of the utterance. Its structure is something like (using Bonomi's classification):

(Profile 1) *utterance time = evaluation time = target time*

A future contingent proposition would have a different profile, something like the following:

(Profile 2) *utterance time ≠ evaluation time = target time*

But there are different possibilities. For instance, the proposition expressed by

(2) "Yesterday was raining" (uttered the day later)

would have the following profile:

(Profile 3) *utterance time = evaluation time ≠ target time.*

Considering the interaction of these three different kinds of moments of time, we may give a further consideration of the problem of the future in the past and other kinds of cases. Bonomi lists eight different ways to connect these different times with contexts and possible worlds. I will use one example only and I will come back on the example about Bill Evans's concert to give an idea of what is at stake.

Let us begin with an example that aims to show when we cannot do without a "neutral" time, or a "timeless" way to consider the content of an assertion, something like a minimal proposition or the "*lekton*" (following Recanati 2008). The example is as follows: After the famous economic crisis in Greece, in 2011, the sovereign debt crisis brought about an economic and political crisis in Italy too. Berlusconi was compelled to leave as prime minister, and was substituted by the economist Mario Monti. The crisis was overcome one year later after many efforts and the introduction of the quantitative easing mechanism in Europe. At the end of 2011 Leo, a famous economist, claims:

(17) Italy is facing a severe crisis.

And this is a true statement. A year later, assuming the situation has changed, Leo is coming back on his previous statement, and says:

(18) Thanks goodness, what I said one year ago is no longer true.

What does (18) refer to? If we take (17) as a full-blown proposition, filled with all the temporal indicators, as Frege and Evans would like a proposition to be, it would be very difficult to understand (18), which would mean that in 2011, at the time of utterance, it was not true that Italy was facing a severe crisis. To make a reasonable interpretation of the latter statement, we need to understand its content as referring to the tenseless proposition "Italy is facing a severe crisis", which, uttered after one year, is evaluated as no longer true. Therefore, here, "no longer" does not mean that the full-blown proposition expressed in (17) changes truth value. "What I said" is not linked to a proposition anchored to its utterance time, but to a temporally neutral content that can be obtained by abstracting over the parameters of (17), which has the structure of profile (1), where utterance time is the same as evaluation time and target time. In this case what shifts is *the target time*, and "what I said" refers to content that is applied to a different target time. That's why the "no longer true" claim is different from the claim held by Leo in

(16) It is no longer true that Bill Evans is playing with Jim Hall

Here Lea rejects the truth of proposition (14) (“Tomorrow Bill Evans is playing with Jim Hall”). Both assertions (14) and (16) have the profile (3), in which the target time differs from the evaluation time. Lea denies what she asserted before, the complete, full-blown proposition, representing a hypothetical (future) situation in which Bill Evans is playing with Jim Hall at a certain target time. The rendering of (16) as:

(16*) What I said before is no longer true.

is very different from the rendering of (18). In (16*), “what I said” refers to what Lea said at the time of the utterance of (14), where the target time does not change, and what changes is the different evaluation, brought about by new information. On the contrary, in (18) the economist shifts the target time; therefore (18) could be paraphrased as:

(18*) If I should *now* say what I said *one year ago*, I would say something false.

This last case points to a new justification of atemporal content, or a minimal proposition, which, in this case, is the content of “what is said”, different from the full-blown content used in the case of the retraction of truth value concerning the Bill Evans’s concert.

Bonomi’s main point therefore seems to propose a form of multi-propositionalism, for which “what is said” depends on what we abstract from (target time, utterance time, evaluation time, viewpoints). To make a simple example, commenting on (17), the economist truly claims, as reported before:

(18) What I said is no longer true.

But also, in the context of a different conversation, he could also truly say:

(19) What I said is absolutely true.

There is no contradiction, if we assume that in (18) we refer to the atemporal proposition, while in (19) we refer to the temporally anchored and therefore eternal proposition expressed in (17) concerning the 2011 crisis in Italy. As Bonomi (2023: 152) comments: “different propositional contents are available here, depending on different scenarios”. This result seems a reminder to MacFarlane’s idea (2003: 334) that assertions of what he calls “*a*-contextual sentences” are different from assertions of non-*a*-contextual sentences. However, we have here a more precise specification of the different uses of the same sentence, once to refer to a full-blown proposition and another time to refer to a minimal proposition. In this case, linguistic behavior is a guide to different views of propositions.

At the end of his paper, the eight different kinds of propositional content show different propositional profiles in a more formal way. Multi-propositionalism has many views, like the one grounded on the difference between reflexive truth conditions and subject matter truth conditions (Perry 2001, Korta and Perry 2008). This last distinction is grounded in the difference between reflexive content and referential content, where reflexive content is the content of an utterance with indexicals where the indexicals are not saturated. We need reflexive content because of our cognitive limitations. I see an analogy with some aspects of the future in the past, that makes me think that Bonomi’s multi-propositionalism, on the one hand, concerns our epistemological limitations, and on the other, compels us to introduce different kinds of propositional content, depending on particular scenarios where we need to abstract to many parameters that need not be filled. It seems that this approach may overcome some criticisms of multipropositionalism such as Ciecierski 2009.

As I previously suggested, the future in the past seems to be linked to our cognitive limitations. Referring to the example of Bill Evans' concert, saying "Lea knew that p ", we are speaking of the actual world in which Lea has access to a possible world where p is true, and – given that the situation changed, in the actual world p is no longer true. On the other hand, referring to the example of the Italian economist, who claimed that what he said is no longer true, we are speaking of the actual world where the minimal content p was true uttered at t and was no longer true uttered at t' . We have to learn from our different ways to use the different intersections of tense and time, and, in particular, the use of the expression "no longer" in different scenarios. Bonomi has given us a way to begin an exploration of a rich variety of cases concerning the relation between the semantics of tense, contexts, situations, and possible worlds, where we are compelled by a variety of conversational contexts to introduce new varieties of propositional content.¹¹

References

- Bonomi, A., 2023. Non-Persistent Truths. *Argumenta*, 9 (1), 119–156.
- Ciecierski, T., 2009. The multiple-proposition approach reconsidered. *Logique & analyse* 208, 423–440.
- Domaneschi, F. and Di Paola, S., 2019. Relevance and non-factive knowledge attributions. *Acta analytica*, 34, 83–115.
- Dummett, M., 1991. *The logical basis of metaphysics*. Oxford: Oxford University Press.
- Dummett, M., 2006, *Thought and reality*, Oxford: Clarendon Press.
- Evans, G., 1985. Does tense logic rest on a mistake? In: *Collected papers*. Oxford: Oxford University Press, 343–363.
- Frege, G., 1918. The thought: a logical inquiry. Engl. Transl. in M. Beaney, *The Frege Reader*. Oxford: Blackwell.
- Garcia Carpintero, M. and Kölbel, M., eds., 2008. *Relative truth*. Oxford: Oxford University Press.
- Kamangar, M. and Perry, J., 2024. Future contingents: a Frege-inspired approach. Manuscript submitted for publication.
- Kaplan, D., 1989. Demonstratives. In: J. Almog, J. Perry, and H. Wettstein, eds. *Themes from Kaplan*, Oxford: Oxford University Press, 481–565.
- Korta, K. and Perry, J., 2011. *Critical pragmatics: an inquiry into reference and communication*. Cambridge: Cambridge University Press.
- Kripke, S., 2008. Frege's theory of sense and reference: some exegetical notes. *Theoria*, 74, 181–218 (reprinted in S. Kripke, *Philosophical troubles*, Oxford: Oxford University Press, 2011, 254–291).
- Künne, W., 2007. A dilemma in Frege's philosophy of thought and language. *Rivista di estetica*, 34, 95–120.
- MacFarlane, J., 2003. Future contingents and relative truth. *The philosophical quarterly*, 53 (212), 321–336.
- MacFarlane, J. 2008. Truth in the garden of forking paths. In: Garcia Carpintero and Kölbel 2008, 81–102.

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- McIntosh, J., 2014. Evans's challenge to temporalism: technical report, *UCL working papers in linguistics*.
- Perry, J., 2001/2012. *Reference and reflexivity*. Stanford: CSLI Publications.
- Prior, A.N., 1957. *Time and modality*. Oxford: Clarendon Press.
- Recanati, F. 2008. Moderate relativism. *In: Garcia Carpintero and Kölbel 2008*: 41–62.
- Searle, J., 1969. *Speech acts*. Cambridge: Cambridge University Press.
- Thomason, R., 1970. Indeterminist time and truth value gaps. *Theoria*, 36, 264–281.