

Fine's McTaggart: Reloaded

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Keywords:

Kit Fine

McTaggart

Metaphysics of time

Reality of tense

Fragmentalism

ABSTRACT

In this paper I will present three arguments (based on the notions of constitution, metaphysical reality, and truth, respectively) with the aim of shedding some new light on the structure of Fine's (2005, 2006) 'McTaggartian' arguments against the reality of tense. Along the way, I will also (i) draw a novel map of the main realist positions about tense, (ii) unearth a previously unnoticed but potentially interesting form of external relativism (which I will label 'hyper-presentism') and (iii) sketch a novel interpretation of Fine's fragmentalism (which I contrast with Lipman's 2015, 2016b, forthcoming).

I. Introduction

According to Kit Fine's (2005, 2006) 'McTaggartian' argument against the reality of tense, the tense-realist idea that reality is constituted by tensed facts

REALISM: Reality is constituted (at least, in part) by tensed facts. (Fine, 2005: 271)¹

is incompatible with the following three theses:

NEUTRALITY: No time is privileged, the tensed facts that constitute reality are not oriented towards one time as opposed to another.

ABSOLUTISM: The constitution of reality is an absolute matter, i.e. not relative to a time or other form of temporal standpoint.

¹ Notice that Fine (2005) explicitly takes talk about facts to be completely reducible to an 'official idiom' featuring the operator 'in reality it is the case that'. I will address this issue in section 5.

COHERENCE: Reality is not contradictory, it is not constituted by facts with incompatible content. (Fine, 2005: 271)²

It appears fair to say that both Fine's arguments and his novel map of 'standard' and 'non-standard' forms of tense-realism represent one of the most interesting contributions to the philosophy of time in recent years. However, despite all the attention and interest it has attracted in the literature, Fine's discussion of tense-realism has often been met as posing a certain interpretative challenge, which has sometimes even lead to question its very intelligibility.³ As a result, there seems to be no clear consensus in the literature, as of today, on how *exactly* Fine's arguments and 'non-standard' realist positions are to be interpreted. For this reason, the aim of this paper is to present and articulate three structurally similar arguments (based on the notions of constitution, metaphysical reality, and truth, respectively), which seem to capture in a clear and simple way at least the spirit (if not the letter) of Fine's original arguments.

The 'argument from constitution' follows the lines of Fine's original argument targeting the realist idea that reality is constituted by tensed facts. The 'argument from reality' takes its steps from Fine's 'reductionist' idea that talk about facts can always be dispensed for by using a reality operator 'in reality, it is the case that'. Finally, the 'argument from truth' stems directly from an interpretation of Fine's fragmentalism (which I will contrast with Lipman's 2015, 2016b, forthcoming) that is in turn animated by the idea that Fine's reality operator should be taken to be factive.

Along the way, I will also show how is it possible to re-draw Fine's map of possible tense-realist positions in an intuitive and seemingly natural way. This will allow me to unearth a potentially interesting version of relativist tense-realism (which I will label 'hyper-presentism') that appears to have gone unnoticed in the literature so far. In addition, I will argue that the three arguments presented appear to be deeply inter-connected not only by some intuitive ideas concerning the 'derivative' character of conjunctions and mereological fusions, but also by some seemingly plausible principles (at least in this context) concerning truth and truthmaking.

Although reasons of space will force me to leave many important issues and questions for another occasion, my hope is that despite its mainly expository character, this work may

² In this paper I will only focus on the more detailed presentation of the arguments given in Fine (2005).

³ Consider, just as a way of example, the following passages taken from the recent literature: 'It would seem, then, that non-standard realism does not constitute a genuine alternative. It is the conceptual gesture that results from trying to do full justice to our intuitive picture of passage. That picture is composed of incompatible elements which together deprive it of literal content' (Deng, 2012: 28-9); '[...] if we cling to the standard understanding of incompatibility, then fragmentalism risks being outright unintelligible (Lipman 2015: 3125); 'But does [Fine's] argument succeed? One difficulty in answering this question is that it is far from obvious how the four principles are to be understood' (Correia and Rosenkranz, 2012: 309).

nevertheless begin to shed some new and interesting light both on ‘Fine’s McTaggart’ and on the general question of how to adequately chart the fascinating, if perilous, landscape of tense-realism.

II. Absolutism, Neutrality and Coherence

An important clue on how to properly interpret Neutrality, Absolutism, and Coherence can be found in section 4 of Fine (2005), which is dedicated to the ‘sophisticated’ version of Fine’s McTaggart.⁴ There, Fine begins to (re-)present his argument by stating that, when it comes to the idea that reality is constituted by tensed facts, tense-realists face a choice, as they can take their notion of constitution to be either

- (F1) tensed or tenseless,
- (F2) relative or absolute,
- (F3) coherent or incoherent.⁵

In this paper I will assume, for simplicity’s sake, that realists are in possession of a *basic* notion of constitution. Given this assumption, three important points immediately follow from the choices represented by (F1)-(F3). First, since (F2) and (F3) are clearly ways to express the idea that realists must decide whether to accept Absolutism and Coherence, (F1) allows us to interpret Neutrality as the idea that the basic notion of constitution is *tenseless*. Second, it follows from merely combinatorial considerations that there are actually *eight* tense-realist positions resulting from (F1)-(F3) (see Figure 1 below). Finally, Fine’s argument can be presented as an argument that is directed against the tense-realist position holding that the basic notion of constitution is both *tenseless* (by Neutrality), *absolute* (by Absolutism), and *coherent* (by Coherence) (I will call this position ‘Naïve Realism’).

⁴ In his ‘sophisticated McTaggart’ (2005: section 4) Fine considers the possibility that realists may use some non-basic notion of constitution (for this reason he uses in his second argument the word ‘composition’ instead of ‘constitution’ to signal that said notion may not be basic). He also considers the possibility that the realist, faced with the McTaggartian objection, may reject the idea that there is a basic notion of constitution and embark thus on an *infinite regress*, which he clearly considers to be vicious. For simplicity’s sake in this paper I take tense-realism as equipped with a basic notion of constitution and leave a discussion of the alleged viciousness of such an infinite regress for another occasion. Among others, see Bliss (2013, 2014), Morganti (2009) and Tahko (2014) for recent criticism of the idea that infinite regresses and circularities in explanation are always vicious.

⁵ ‘The argument from these new assumptions can now be stated. Suppose the realist asserts his position using some notion of composition. It can be tensed or tenseless, relative or absolute, coherent or incoherent. However, we know from the original argument that it cannot conform to all four assumptions’ (Fine 2005: 274; see also footnote 4).

How are then Absolutism, Neutrality, and Coherence to be properly formulated in light of (F1)-(F3)? Let's begin with (F2) first. As it seems fairly intuitive and natural, I will simply assume that to be an absolutist about the basic notion of constitution is to take it to be expressed by a *monadic* predicate, whereas to be a relativist is to take it to be expressed by a *relational* predicate instead:

ABSOLUTE CONSTITUTION: $C(f)$ (' f constitutes reality absolutely')

RELATIVE CONSTITUTION: $C_t(f)$ (' f constitutes reality relative to time t ')⁶

As for (F1), I propose to take the question about whether the relevant notion of constitution is tensed or tenseless as the question about whether sentences of the form ' f constitutes reality (absolutely or relative to a time t)' are sensitive to tense-theoretical embeddings. Consider, in fact, a run-of-the-mill eternalist who takes it to be a tenseless truth that, say, Caesar crosses the Rubicon in 49 BC. One might think that such an eternalist is committed to claiming that it doesn't make sense to say things like '*It was the case two days ago that Caesar crossed the Rubicon in 49 BC*' or '*It will be the case two weeks from now that Caesar crossed the Rubicon in 49 BC*'. However, she appears to be perfectly in position to accept such claims, insofar as she also claims that tenseless sentences like 'Caesar crossed the Rubicon in 49 BC', if true, are *always* true and, if false, *always* false. What is important for eternalists is in fact the idea that tenseless sentences cannot *change* their truth value and thus cannot be sometimes true *and* sometimes false. This, however, is perfectly compatible with their being embeddable by temporal operators.

Let then '**A**' and '**S**' stand for the operators 'it is always the case that' and 'it is sometimes the case that'.⁷ The question about whether the notion of constitution is tenseless or tensed may thus be recast as the question about whether the following rule of 'alwaysation' is valid:

ALWAYSATION: $\mathbf{Sp} \vdash \mathbf{Ap}$ (from 'It is sometimes the case that p , infer 'It is always the case that p ')

⁶ This is also the route initially taken by Correia and Rosenkranz (2011: 43). However, they then proceed to define Absolutism as the position according to which 'The basic notion of constitution is absolute (*eternalism*), or it is relative but there is no factual variation (*sempiternalism*)' (2011: 56). According to the present approach, this is a mistake. The issue about whether facts constitute reality at every time (in a sense of constitution that may or may not be basic) is (at least in principle) *orthogonal* to the issue about whether the basic notion of constitution is absolute or relative. In this sense, Correia and Rosenkranz's 'sempiternalism' qualifies here as a kind of *relativism*.

⁷ '**A**' and '**S**' may be defined by means of the familiar temporal operators 'It will be the case that p ' ('**F**') and 'it was the case that p ' ('**P**') as follows:

$$\mathbf{Ap} =_{df} p \wedge \sim \mathbf{P}\sim p \wedge \sim \mathbf{F}\sim p$$

$$\mathbf{Sp} =_{df} p \vee \mathbf{P}p \vee \mathbf{F}p$$

Notice that, since the always-operator is most plausibly taken to be factive

ALWAYS-FACTIVITY: $Ap \vdash p$

Alwaysation entails that also the sometimes-operator is factive:

SOMETIMES-FACTIVITY: $Sp \vdash p$

Therefore, since also the operator ‘it is now (or presently) the case that’ (N) is also factive

NOW-FACTIVITY: $Np \vdash p$,

it follows that, if Alwaysation is rejected, only facts *presently/now* constituting reality are guaranteed (by Now-Factivity) to constitute reality, whereas there is no guarantee that reality is also constituted by facts that *used* to constitute reality or that *will* constitute reality.⁸ In this sense, if Alwaysation is rejected, the present seems indeed to be the privileged time reality is ‘oriented towards’ (Fine 2005: 271; 273), consistently with what Fine says about his ‘presentism’ (for simplicity’s sake, in what follows we can take Neutrality to just be the thesis that the sometimes-operator is factive).

Finally, (F3). Fine presents fragmentalism as the idea that reality is not ‘of a piece’

Under [fragmentalism], we give up the idea that reality is of a piece. Reality will divide into fragments, no two of which can be regarded as belonging to a single coherent whole. (Fine 2005: 262)

Under such a view, reality will be fragmentary. Certain of the facts constituting reality will ‘cohere’ and some will not. Any fact is plausibly taken to belong to a ‘fragment’ or maximally coherent collection of facts; and so reality will divide up into a number of different but possibly overlapping fragments. (Fine 2005: 281)

This suggests that the notion of coherence that is central to the definition of fragmentalism may be expressed by means of the following principles (interpreting ‘<’, for the time being, as ‘belonging’):

⁸ In this passage I am assuming Absolutism for simplicity’s sake.

ABSOLUTIST COHERENCE*: $C(a), C(b) \vdash \exists x(C(x) \wedge a < x \wedge b < x)$

RELATIVIST COHERENCE*: $C_t(a), C_t(b) \vdash \exists x(C_t(x) \wedge a < x \wedge b < x)$

These principles say that, if any two facts a and b constitute reality (absolutely/relative to a time t), then there is a fact x such that (i) x constitutes reality (absolutely/relative to a time t) and (ii) both a and b belong to x . The notion of ‘belonging’ used in this definition is admittedly obscure and it would certainly be a theoretical advantage if it could be reduced to more familiar notions. For this reason, I propose here to adopt the idea that facts are endowed with *mereological structure* and to interpret the relevant notion of ‘belonging’ by means of the notion of *parthood*.

If we endorse the definitions of coherence just given and interpret ‘<’ as parthood, fragmentalism becomes the claim that for some pair of facts there is *no* fact having both of them as parts (which would entail that there is no fact constituting reality that has *all* the facts constituting reality as parts). However, for reasons that will become clear below (section 6.2), I prefer here to assume a weaker position and take instead fragmentalism as the theory rejecting the idea that, for any two facts a and b , if both a and b constitute reality, then also *their binary fusion* ($a + b$) constitutes reality. I take thus the notion of coherence to be best expressed by means of the following principles:

ABSOLUTIST COHERENCE: $C(a), C(b) \vdash C(a + b)$

RELATIVIST COHERENCE: $C_t(a), C_t(b) \vdash C_t(a + b)$

III. Naïve Realism and temporal variegation

Fine explicitly takes Realism to be incompatible with the conjunction of Neutrality, Absolutism and Coherence only insofar as it is accompanied (as it seems indeed highly plausible) by the idea that reality is ‘reasonably variegated’ over time:

VARIEGATION: any reasonable view of how temporal reality might be constituted should allow for its being reasonably variegated over time; and presumably it will then be constituted by incompatible facts, i.e. by facts with incompatible contents. (Fine, 2005: 272)

A potential difficulty in formulating this notion of ‘variegation’ (as I will call it) lies in the very notion of incompatibility. However, for what concerns us here it is sufficient to focus on the seemingly plausible thought (at least given our mereological understanding of Coherence) that, if two facts are incompatible, their fusion *can never* constitute reality (absolutely/relative to a time t), and so it *never does*. The assumption that reality is ‘sufficiently variegated’ can thus be taken

as the thesis that there are two facts constituting reality *over time* such that their fusion *never* constitutes reality, and thus as the claim that (depending on whether the basic notion of constitution is taken to be absolute or relative) one of the two following schemas has some true instance:

ABSOLUTIST VARIEGATION: $SC(a) \wedge SC(b) \wedge A \sim C(a + b)$

RELATIVIST VARIEGATION: $SC_t(a) \wedge SC_u(b) \wedge A \sim \exists v C_v(a + b)$

According to the absolutist principle of variegation, it is sometimes the case that a certain fact a constitutes reality and it is sometimes the case that a certain fact b constitutes reality, and yet it is never the case that the fusion of a and b constitutes reality. Instead, according to the relativist idea of variegation, it is sometimes the case that a certain fact a constitutes reality at a certain time t and it is sometimes the case that a certain fact b constitutes reality at a certain time u and yet it is never the case that, for any time v , the fusion of a and b constitutes reality at v .

Fine's argument against Naïve Realism—to the effect that Variegation, Absolutism, Neutrality and Coherence lead to contradiction—can therefore be presented as follows:

The argument from constitution

Naïve realists take both reality to be sufficiently variegated and the basic notion of constitution to be absolute. Therefore, they must take some instance of Absolutist Variegation to be true. However, the following argument shows that Absolutist Variegation, Neutrality and Coherence lead to a contradiction:

- | | | |
|------|---|-------------------------------|
| (A1) | $SC(f) \wedge SC(g) \wedge A \sim C(f + g)$ | Ass. (Absolutist Variegation) |
| (A2) | $SC(f)$ | A1 by \wedge -E |
| (A3) | $SC(g)$ | A1 by \wedge -E |
| (A4) | $A \sim C(f + g)$ | A1 by \wedge -E |
| (A5) | $C(f)$ | A2 by Neutrality |
| (A6) | $C(g)$ | A3 by Neutrality |
| (A7) | $\sim C(f + g)$ | A4 by A -factivity |
| (A8) | $C(f + g)$ | A5,A6 by Coherence |
| (A9) | <i>Contradiction!</i> | A7,A8 by \wedge -I |

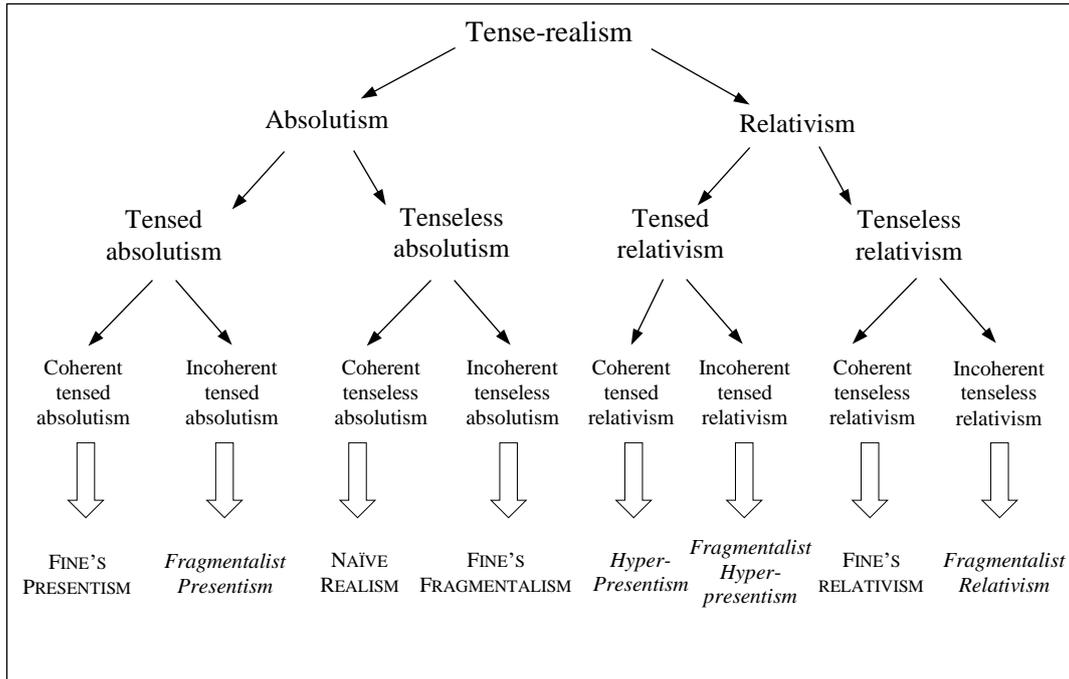


Figure 1

IV. Seven ways out

We are now in position to better appreciate the map of tense-realism resulting from our reconstruction of Fine’s argument. Consider Figure 1. The first thing to notice is that four of the eight positions depicted in Figure 1 are indeed the four forms of realism that are considered by Fine. The third one (counting from left to right) is the naïve realist position, which is the target of Fine’s McTaggartian argument, that is a coherent and tenseless form of absolutism. The first one is what Fine calls ‘presentism’ which is a form of coherent absolutism that rejects Neutrality and thus takes the basic notion of constitution to be tensed. Fine’s ‘fragmentalism’ is the fourth option: an incoherent form of tenseless absolutism. Finally, the seventh position featured in Figure 1 is Fine’s ‘relativism’, which endorses Coherence and Neutrality but rejects Absolutism.

One of the reasons of interest concerning the taxonomy presented in Figure 1 is that it highlights four possibilities that appear to have gone unnoticed in the literature so far. Three are incoherent (and thus fragmentalist) alternative to Fine’s fragmentalism. The fourth is a coherent and yet tensed form of relativism which I am here labelling ‘hyper-presentism’.

As for the three novel forms of fragmentalism, it seems natural to assume within this framework a certain presumption against incoherence. In this sense, the three alternative forms of fragmentalism appear to be uninteresting because unnecessary, as the contradiction threatened by Fine’s argument is avoided *before* having to choose whether to reject Coherence or not.

The case of hyper-presentism appears to be potentially more interesting. According to hyper-presentists, not only do facts constitute reality only relative to a certain temporal standpoint,

but facts about temporally-relative constitution can themselves *change*. For hyper-presentists it is thus possible that *f* presently constitutes reality at time *t* and that either *it will not be the case* or *it wasn't the case* that *f* constitutes reality at time *t*. This idea may remind one of seemingly similar claims made by growing-block theorists, who typically admit the existence of facts of the form '*p-at-t*' but, contrary to eternalists, think that also these kind of facts can (and indeed do) undergo change.⁹ Nevertheless, it must be stressed that the kind of relativity to time that is displayed by facts of the form '*p-at-t*' in this case *isn't* the kind of relativity that characterises Fine's relativism. As a matter of fact, Fine clearly distinguishes between an *internal* and an *external* form of relativity to times:

It is also crucial to a proper understanding of this position that one sharply distinguish between what one might call the '*internal*' and '*external*' forms of relativity. There is a sense for the anti-realist in which tense is relative. Tensed facts constitute reality only in so far as they assume a relative form; and what properly belongs to reality is not the fact that I am sitting but the fact that I am sitting *at a given time* (or some other fact of this sort). For the neutral realist [*endorsing relativism*], by contrast, tense is not relative in this sense, but absolute. The tensed facts themselves belong to reality, and do not get to belong to reality through being relativized to a time. However, their *belonging to reality* is a relative matter. (Fine 2005: 279-80)

Growing-block theorists are thus best regarded as *presentists* in Fine's sense of the term, that is as *absolutists* taking the notion of constitution to be *coherent* and yet *tensed*. Instead, hyper-presentists are *external relativists* claiming that even the way in which facts constitute reality relative to a time can change. In other words, for hyper-presentists not only is there 'no saying how reality is without presupposing a temporal standpoint' (Fine 2005: 80), but *also* the way reality is from a certain temporal standpoint can change over time.

The issue about whether hyper-presentism can be developed into an interesting and fruitful form of realism about tense goes well beyond the scope of this paper and must be left for another occasion. Nevertheless, the following seems to be a potentially promising suggestion. Hyper-presentists could be tense-realists that distinguish between *two* fundamental forms of tensed facts and incompatibility between them. On the one hand, they could take there to be 'regular' tensed facts like [Socrates is sitting] and [Socrates is standing]. Some of these facts (like the ones just mentioned) are incompatible. However, reality is coherent because they never constitute reality at the same time. On the other hand, hyper-presentists may also countenance facts like [T1 is present] and [T1 is past]. Also some of these facts are incompatible (like the ones just mentioned).

⁹ Growing-block theorists typically take times to come into existence 'as time goes by', so that even if it is *currently* the case that *p-at-t*, *before* time *t* existed there wasn't any fact of the form *p-at-t* (for any *p*). The *locus classicus* for the growing-block theory is Broad (1923). For a recent reformulation of the theory see Correia and Rosenkranz (2013).

However, hyper-presentists could claim that, contrary to the first kind of facts, facts like [T1 is present] and [T1 is past] are *eternal*, in the sense that if, for any time t , a fact of this kind constitutes reality at t , then it constitutes reality at *every* time. Suppose, for instance, that [T1 is present] constitutes reality at T1. It follows that it also constitutes reality at T2. In this case, hyper-presentists could continue, coherence is guaranteed by the fact that [T1 is past] (which is incompatible with [T1 is present]) *doesn't* constitute reality at *any* time. However, hyper-presentists might also think that the reality of tense requires that *both* [T1 is present] *and* [T1 is past] somehow get to constitute reality. For this reason, they could say that, while it is *currently* the case that, for every time t , [T1 is present] constitutes reality at t , *it will nevertheless be the case that*, for every time t , [T2 is present] constitutes reality at t . In this way, while the change concerning the first kind of facts will consist in the fact that different facts constitute reality at different times, the change concerning facts about 'A-properties' will consist in the fact that although certain 'A-facts' presently constitute reality (at every time) it was (or will be) the case that different 'A-facts' constitute reality (at every time).

V. Reality

Fine (2005: 267-70) famously distinguishes between the notions of *mere* and *metaphysical* reality and takes the latter to be expressible by the primitive operator 'in reality, it is the case that':

...it will be convenient to suppose that we have an 'official' idiom for making reality claims. My preference [...] is to take there to be a primitive sentential operator, call it R , whose intended reading is, 'in reality, it is the case that'. Reality claims may then be formed by affixing this operator to an appropriate sentence S . (Fine 2005: 268)¹⁰

According to him, it is this official metaphysical idiom which should be used when making claims concerning a realist position about tense. He acknowledges that, 'for ease of expression' it may be useful to talk about facts constituting reality. However, this doesn't mean that a realist should be committed to the (fundamental) existence of facts or to the idea of reality as a 'container' of facts. Talk about facts constituting reality should be taken as always dispensable in favour of the official idiom. Therefore, if the reconstruction of Fine's argument that I am proposing in this paper is to be successful, it ought to be possible to re-formulate all its relevant claims in Fine's official idiom. This is what I set out to do in this section.

Fine's reality operator R appears to be suitable only to express an absolutist conception of reality, according to which, if p is really the case, it is *really* the case *simpliciter* that p and not relative to a certain temporal standpoint. This suggests that the distinction between an absolute

¹⁰ See also Fine (2001, 2009).

and relative notion of reality ought to be captured by means of a distinction between *two* primitive operators: Fine’s absolutist R and a relativist operator R_t indexed to a time:

ABSOLUTE REALITY: $R[p]$ (‘in reality, it is the case that p ’; ‘it is constitutive of reality that p ’)

RELATIVE REALITY: $R_t[p]$ (‘in reality at t , it is the case that p ’; ‘it is constitutive of reality at t , that p ’)

While Neutrality can be expressed also in this case as the idea that the sometimes-operator is factive (as in the case of the argument from constitution), matters are slightly more complicated when it comes to the notion of coherence. In fact, an initial idea may be that the relevant notions of coherence ought to be expressed in terms of an Agglomeration rule for the reality operator stating that, if it is really the case (absolutely/relative to a time t) that p and it is also really the case (absolutely/relative to t) that q , then it is really the case (absolutely/relative to t) that p and q :

ABSOLUTIST COHERENCE(R)?: $R[p], R[q] \vdash R[p \wedge q]$

RELATIVIST COHERENCE(R)?: $R_t[p], R_t[q] \vdash R_t[p \wedge q]$

However, as Fine himself stresses, there are reasons to be dissatisfied with this idea. In particular, one reason to reject Agglomeration for R is that ‘one might want to explain the obtaining of a conjunctive fact in terms of the obtaining of its conjuncts’, so that ‘conjunctive facts will disappear from reality on this view in favour of their conjuncts’ (Fine, 2005: 281).

However, there appears to be a quick fix to this problem. It is sufficient to take the reality operator to be capable of having *pluralities* of sentences in its scope instead of only a single one.¹¹ This allows us to draw a distinction between the metaphysical reality of a *conjunction*—expressed as ‘ $R[p \wedge q]$ ’—and the metaphysical reality of the plurality of its *conjuncts taken together*—expressed as ‘ $R[p, q]$ ’—and thus to properly formulate Coherence for metaphysical reality as follows:

ABSOLUTIST COHERENCE(R): $R[p], R[q] \vdash R[p, q]$

RELATIVIST COHERENCE(R): $R_t[p], R_t[q] \vdash R_t[p, q]$

¹¹ This option is also suggested by Lipman (2015: 3124, footnote 2).

In this way, to say that reality is fragmented (for, say, absolutists) is to say that (for some p and q) although p and q are both really the case, they are not really the case ‘together’, so that although $R[p]$ and $R[q]$ are true, $R[p, q]$ isn’t.

The idea that reality is sufficiently variegated can thus be expressed as the idea that some instance of the following schemas is true:

ABSOLUTIST VARIEGATION(R): $SR[p] \wedge SR[q] \wedge A \sim R[p, q]$

RELATIVIST VARIEGATION(R): $SR_t[p] \wedge SR_u[q] \wedge A \sim \exists v R_v[p, q]$

The argument against naïve realism can thus be given as follows:

The argument from reality

(B1)	$SR[P] \wedge SR[Q] \wedge A \sim R[P, Q]$	Ass. (Absolutist Variegation(R))
(B2)	$SR[P]$	B1 by \wedge -E
(B3)	$SR[Q]$	B1 by \wedge -E
(B4)	$A \sim R[P, Q]$	B1 by \wedge -E
(B5)	$R[P]$	B2 by Neutrality
(B6)	$R[Q]$	B3 by Neutrality
(B9)	$\sim R[P, Q]$	B4 by A-factivity
(B10)	$R[P, Q]$	B5, B6 by Coherence(R)
(B11)	<i>Contradiction!</i>	B7, B8 by \wedge -I

VI. Factivity, fragmentalism and adjunction

VI.1 Fragmentalism and sub-valuationism

Some authors have claimed that, under the assumption of fragmentalism, Fine’s reality operator *cannot be factive*.¹² The argument bolstering this claim seems to be something along the following lines. Given fragmentalism, the idea that reality is sufficiently variegated ought to entail that, for some p and q , it is both really the case that p and really the case that q , and yet it is *not* the case that p and q (being p and q incompatible):

$$(*) \quad R[p] \wedge R[q] \wedge \sim(p \wedge q)$$

However, if the reality operator is factive, from the first and second conjunct of (*) we can infer ‘ p ’ and ‘ q ’ respectively, and then, by adjunction, we can derive their conjunction ‘ $p \wedge q$ ’,

¹² See Merlo (2013) and Lipman (2015).

contradicting thus the third disjunct of (*). Furthermore, the idea that the reality-operator shouldn't be taken to be factive in the context of fragmentalism seems to be suggested by Fine himself in passages like the following one:

We might naturally take a fact to belong to reality if it belongs to *a* reality. It is then the [...] assumption [...] that any fact belonging to reality obtains, which should be given up [by non-standard realists]; for the fact may relate to one reality and the obtaining to another. In stating that a fact belongs to reality, we adopt a general perspective but, in stating that a fact obtains, we adopt the current perspective; and it is because of this shift in perspective *that we cannot generally assert that the facts belonging to reality will obtain*. Thus, once again, it is the absence of a single coherent reality that allows us to reject one of the assumptions upon which the argument depends. (Fine 2005: 297-98; my italics)

As Lipman (2015, 2016a) has noted, however, the idea of a non-factive notion of reality seems to be misguided, to say the least. How could a fact be *real* without being *a fact*? How could it be *really* the case that *p*, if the *negation* of *p* is the case?¹³ At the same time, however, it appears difficult to deny that the idea that reality is temporally variegated ought to entail something like (*) in the context of fragmentalism. For this reason, I take fragmentalism to be better understood as a theory committed to the rejection of the classical rule of Adjunction:

ADJUNCTION: $p, q \vdash p \wedge q$

Notice that the version of fragmentalism I am introducing here differs from the version of fragmentalism presented by Lipman (2015, 2016b, forthcoming). In order to make sense both of fragmentalism and the notion of 'co-obtainment' of facts, Lipman offers the following theory. A model M is a pair $\langle W, v \rangle$, where W is a set of points and v is a function that assigns either 1 or 0 to each of the atomic sentences relative to the points in W . The members of W are thought of as representing fragments and the function v is extended to an assignment to all sentences via the following recursive clauses (where ' \odot ' stands for the co-obtainment operator, so that ' $A \odot B$ ' should be read '*A insofar as B*')

(L1) $v_w(A \wedge B) = 1$ iff $v_t(A) = 1$ and $v_t(B) = 1$

(L2) $v_w(\sim A) = 1$ iff $v_t(A) \neq 1$

(L3) $v_w(A \odot B) = 1$ iff $v_t(A) = 1$ and $v_t(B) = 1$

¹³ See Lipman (2016: 6).

(note that the clauses for conjunction and negation are classical, and that the clauses for co-obtainment and for conjunction are identical). The notion of truth in a model is then defined as follows:

- (L4) $M \Vdash p$ iff $\exists w(v_w(p) = 1)$ for any atomic p
- (L5) $M \Vdash A \odot B$ iff $\exists w(v_w(A \odot B) = 1)$
- (L6) $M \Vdash A \wedge B$ iff $M \Vdash A$ and $M \Vdash B$
- (L7) $M \Vdash \sim A$ iff $M \nVdash A$

Finally, the notion of logical truth and logical consequence can be defined as follows:

- (LT) A sentence A is logically true if, and only, if for every model M , $M \Vdash A$
- (LC) A sentence A is a logically consequence of a set of sentences Σ if, and only, if for every model M , if $M \Vdash \Sigma$, then $M \Vdash A$ (where by $M \Vdash \Sigma$ we mean that $M \Vdash B$, for every B in Σ)

The kind of fragmentalism I am proposing here can adopt Lipman's models. However, it doesn't need to define a novel operator for the notion of co-obtainment, but can simply extend the function v in a classical way:

- (R1) $v_t(A \wedge B) = 1$ iff $v_t(A) = 1$ and $v_t(B) = 1$
- (R2) $v_t(\sim A) = 1$ iff $v_t(A) \neq 1$

Then, it can simply define the notions of truth in a model as follows:

- (R3) $M \Vdash A$ iff $\exists t(v_t(A) = 1)$

and endorse the definition of logical truth and logical consequence given in (LT) and (LC).

This kind of fragmentalism is thus a straightforward form of *sub-valuationism*, as it takes a sentence to be true if, and only if, there is *some* fragment 'at which' it is true.¹⁴ Therefore, it admits the possibility of *dialetheias*,¹⁵ as the fact that 'A' is true at some fragment, and thus *simpliciter*, is perfectly compatible with ' $\sim A$ ' being true at some other fragment, and so

¹⁴ On subvaluationism see, among others, Varzi (1997) and Cobreros (2013).

¹⁵ At least if a *dialetheia* is taken to be 'a sentence, A, such that both it and its negation, $\neg A$, are true' (Berto and Priest 2013).

simpliciter.¹⁶ Notice, however, that even when that is indeed the case, it doesn't follow that there is a fragment at which ' $A \wedge \sim A$ ' is true. In fact, since valuations are classical, (the following version of) the Law of Non-Contradiction is valid within this theory:

$$\text{(LNC)} \quad \models \sim(A \wedge \sim A)$$

Reasons of space require me to leave a thorough comparison between this theory ('R-fragmentalism') and Lipman's fragmentalism ('L-fragmentalism') for another occasion. However, there is one important difference that may be worth mentioning. Consider, in fact, the following claims that could be made about a certain time t :

- (T1) t is present
- (T2) t is past
- (T3) t isn't present (i.e.: *it is not the case that t is present*)
- (T4) t is past and t isn't present
- (T5) t is present and t is past

Quite intuitively, if our models are meant to adequately capture the reality of temporal passage (which should plausibly be a central task of any realist theory of tense), then the fragments they contain should be subject to certain constraints when it comes to A-facts like (T1)-(T5). For instance, at no fragment in any model both (T1) and (T2) should be true. In the same vein, no fragment in any model should make (T5) true.¹⁷ Suppose, then, that both L-fragmentalists and R-fragmentalists construct their models accordingly. Interestingly, supposing that t is indeed a time that becomes present and then past (so that there is a fragment of reality containing the fact that t is present and a fragment containing the fact that t is past), R-fragmentalism predicts (T1)-(T4) to be all *true* and (T5) to be *false*, as one would seem to expect under the assumption of fragmentalism. Instead, L-fragmentalism appears to behave somewhat strangely in this case. ' t isn't present' turns out to be actually *false*, and so does (T4). However, it is *true* to assert (T5) and thus to say—in one single breadth!—that t is *both* present *and* past.

¹⁶ Cameron (2015) claims that fragmentalism, which is a *metaphysical* thesis, shouldn't be confused with dialetheism, which is instead a *semantic* thesis. I agree. What I am claiming here isn't in fact that fragmentalism and dialetheism are the same, but that (for reasons that have to do with the factivity of Fine's reality operator) fragmentalism should be best considered as committed to embracing some form of dialetheism.

¹⁷ The idea that (T5) should be rejected by A-theorists has been recently challenged by Tallant (2015).

To be fair, many of the relevant *desiderata* can find a suitable L-fragmentalist-friendly reformulation by means of the co-obtainment operator. For instance, even if they cannot deny (T5) L-fragmentalists can say that

(T6) It is not the case that t is present *insofar as* t is past ($\neg(Pr(t) \odot Pa(t))$)

which is a way to say that t is present and t is past don't co-obtain. Similarly, even if they cannot assert (T4) is true, L-fragmentalists can say that

(T7) t is past *insofar as* t isn't present ($Pa(t) \odot \neg Pr(t)$)

However, R-fragmentalism can easily meet the relevant *desiderata* without invoking any novel primitive notion of co-obtainment. Furthermore, instead of taking incompatibility to be impossible co-obtainment (as L-fragmentalism does):

L-INCOMPATIBILITY: *'the fact that A and the fact that B are incompatible iff_{df} necessarily $\sim(A \odot B)$ '* (Lipman 2015: 3131)

R-fragmentalism can simply take it to amount to the impossibility of a corresponding conjunction, as it appears to be more intuitive and plausible

R-INCOMPATIBILITY: *The fact that A and the fact that B are incompatible iff_{df} necessarily $\sim(A \wedge B)$* ¹⁸

Surely the fact that R-fragmentalism can accept the truth of both a sentence and its negation may be met with some scepticism. However, the ability of R-fragmentalism to draw a wedge

¹⁸ Lipman also distinguishes between *contrary* and *incompatible* facts, where contrary facts are facts that are R-incompatible, in our sense. Notice that the distinction can survive in the context of R-fragmentalism. By introducing a truth-operator in the object language to capture the R-fragmentalist notion of *sub-truth*

$$(R4) \quad v_t(TA) = 1 \quad \text{iff} \quad \exists z(v_z(A) = 1)$$

the notion of contrary facts can be defines as follows

R-CONTRARINESS: *the fact that A and the fact that B are contrary facts iff necessarily $\sim(TA \wedge TB)$*

An example of contrary facts can be given by pairs of sentences of the form $\langle 'TA', '\sim TA' \rangle$. Notice, that this in turn entails that also the following versions of the Law of Non-Contradiction are valid for R-fragmentalism (where ' Fp ' is defined as ' $\sim Tp$ ')

$$(LNC2) \quad \models \sim(TA \wedge \sim TA)$$

$$(LNC3) \quad \models \sim(TA \wedge FA)$$

between the truth of two incompatible sentences and the truth of their conjunction seems to capture in a clear and intuitive sense Fine’s fragmentalist claim that reality is ‘incoherent’ (in the sense of containing incompatible facts) and yet ‘consistent’ (in the sense of not admitting of true contradictions). At least *prima facie*, there seem thus to be some reasons to prefer R-fragmentalism over its L-counterpart.¹⁹

VI.2 The argument from truth

R-fragmentalism appears to be interesting for two further reasons, beyond the fact that it allows one to take the reality operator to be factive. The first concerns the notion of truth, while the second concerns the notion of truthmaking. Let us review them in turn.

The rejection of Adjunction is naturally accompanied by the rejection of Agglomeration for the truth-operator ‘it is true that’ (*T*):

$$\text{AGGLOMERATION: } T(p), T(q) \vdash T(p \wedge q)$$

Interestingly enough, once the option of rejecting Agglomeration is on the table, it seems possible to construct a Finean argument based on the notion of truth that is parallel to the argument from constitution and the argument from reality.²⁰

As in the case of the argument from constitution, let’s assume that our tense realists have a basic notion of truth. Such notion may be either absolute or relative, tensed or tenseless, coherent or incoherent. However, it is possible to prove that realists cannot take it to be absolute, tenseless and coherent, if they also uphold that reality is sufficiently variegated over time (in the relevant sense).

The absolutism/relativism distinction concerning (the basic notion of) truth can be simply cashed out in terms of an absolute and a time-indexed truth operator:

¹⁹ The idea of R-fragmentalism is perhaps the point of greatest distance from Fine’s own construal of fragmentalism. Fine clearly states that ‘it will not be correct for me simultaneously to assert both that I am sitting and that I am standing. For any such assertion will only relate to those aspects of reality that ‘cohere’ with the existence of the given assertion; and so, it will only be correct for me to assert that I am sitting if, at the time of the assertion, I am sitting’ (2005: 282). Instead, there seems to be nothing debarring R-fragmentalists from simultaneously asserting both ‘I am sitting’ and ‘I am sitting’ (as long as they don’t assert their conjunction). Since, however, these assertions do strike one as odd, R-fragmentalists appear to have the burden to account for their oddness. Although reasons of space force me to leave also this issue for another occasion, the challenge doesn’t seem to be difficult to meet. For instance, R-fragmentalists could invoke the idea that, *when ordinarily speaking*, we (somehow) operate an implicit and tacit *restriction* of the relevant circumstances of evaluation to the single fragment in which our assertion is made. This would explain why only assertions correctly describing what is the case at that ‘fragment of assertion’ count as true in ordinary circumstances.

²⁰ Notice that the argument from truth that I am about to present must not be confused with the ‘Argument from Truth’ that is presented by Fine (2005: 287-94; see also the previous footnote on this).

ABSOLUTIST TRUTH: Tp ('it is true that p ')

RELATIVIST OPERATOR: $T_t p$ ('it is true at t that p ')

Once again, Neutrality can be expressed as the idea that the sometimes-operator is factive. Instead, the notion of coherence can be expressed in this case by means of the following rules of Agglomeration for the truth-operator:

ABSOLUTIST COHERENCE(T): $Tp, Tq \vdash T(p \wedge q)$

RELATIVIST COHERENCE(T): $T_t p, T_t q \vdash T_t(p \wedge q)$

The absolutist and relativist idea of temporal variegation can be expressed as the idea that the following schemas have true instances:

ABSOLUTIST VARIEGATION(T): $ST(p) \wedge ST(q) \wedge A \sim T(p \wedge q)$

RELATIVIST VARIEGATION(T): $ST_u(p) \wedge ST_v(q) \wedge A \sim \exists w T_w(p \wedge q)$

The argument from truth can be thus be given as follows:

The argument from truth

(C1)	$ST(P) \wedge ST(Q) \wedge A \sim T(P \wedge Q)$	Ass. (Absolutist Variegation(T))
(C2)	$ST(P)$	C1 by \wedge -E
(C3)	$ST(Q)$	C1 by \wedge -E
(C4)	$A \sim T(P \wedge Q)$	C1 by \wedge -E
(C5)	$T(P)$	C2 by Neutrality
(C6)	$T(Q)$	C3 by Neutrality
(C7)	$\sim T(P \wedge Q)$	C4 by A -factivity
(C8)	$T(P \wedge Q)$	C5, C6 by Coherence(T)
(C9)	<i>Contradiction!</i>	C7, C8 by \wedge -I

As it should be apparent, many familiar arguments in the literature concerning time and change either display a structure that is similar to the structure of the argument from truth or can at least be re-formulated according to its structure. This, I submit, is a welcome result.²¹

²¹ Just a way of example, consider for instance the following reconstruction of the *argument from temporary intrinsics* (Lewis 1986): Let F and G be two incompatible intrinsic properties so that it is never true that something is both F and

VI.3 Truthmakers

The notion of truth-coherence was defined as a rule of Adjunction for the truth-operator, while the notion of constitution-coherence was defined by means of the notion of binary mereological sum:

ABSOLUTIST COHERENCE(T): $Tp, Tq \vdash T(p \wedge q)$

ABSOLUTIST COHERENCE: $C(a), C(b) \vdash C(a + b)$

Interestingly enough, the two principles can be shown to entail each other, if the following principles are assumed (' $a \Vdash P$ ' stands for ' a makes P true'):

TM1: $T(A \wedge B)$ if, and only if, for some facts x and y : $C(x), C(y), C(x + y), x \Vdash A$ and $y \Vdash B$

TM2: If $T(A \wedge B)$, then for every fact x and y such that $C(x), C(y), x \Vdash A$ and $y \Vdash B$, we have that $C(x + y)$

TM3: $T(p)$ if, and only if, there is some fact x such that: $C(x)$ and $x \Vdash p$

TM4: For every x , if $C(x)$, then there is some p , such that $x \Vdash p$

According to TM1, if a conjunction is true then there is a pair of facts constituting reality that make the conjuncts true (respectively), and are such that also their fusion constitutes reality. According to TM2, if a conjunction is true, then every pair of facts constituting reality and making its conjuncts true is such that their fusion constitutes reality. According to TM3, every truth has a fact constituting reality as a truthmaker (and, clearly, every truthmaker entails the truth of what it makes true). Finally, according to TM4, every fact constituting reality is a truthmaker (for some p).²²

Beyond the truthmaker maximalist idea expressed by TM3, TM1-4 can be seen as articulating two main ideas: (i) the idea that all facts constituting reality are truthmakers for some truth, and (ii) the idea that conjunctions are made true by the binary sum of their conjuncts. The

G. Assume that it is sometimes true that a is F , and that it is sometimes true that a is G . By Neutrality, it is both true that a is F and that a is G . By Coherence(T), it is true that a is both F and G . *Contradiction!*

²² *From Coherence(T) to Coherence*: Assume Coherence(T) and suppose that f and g are facts constituting reality. By TM4 both f and g make true some propositions P and Q . By TM3 we have $T(P)$ and $T(Q)$ and, by Coherence(T) we have that $T(P \wedge Q)$. TM2 then entails that the binary fusion of f and g constitutes reality. QED

From Coherence to Coherence(T): Assume Coherence and both $T(P)$ and $T(Q)$. By TM3, P and Q have some truthmakers f and g such that they both constitute reality. By Coherence we have $C(f + g)$, and by TM1 we have $T(P \wedge Q)$. QED

first idea seems to be highly plausible on its own, it's already present in what Fine (2005) says about the notion of 'verification' (Fine 2005: 289-98), and is explicitly endorsed in the debate by authors like Correia and Rosenkranz (2011).²³ The second idea, on the other hand, while at least not counter-intuitive on its own, features in the recent work of Fine (2014, manuscript) himself on 'truthmaker semantics'.²⁴ It appears thus that, at least in this context, TM1-4 have the ring of plausibility to them. Therefore, insofar as the argument from truth can be seen as a plausible version of Fine's McTaggart, it seems that principles TM1-4 can be taken as bolstering the choice, made in section 3, to formulate the notion of constitution-coherence in terms of binary sums and to take fragmentalism as the theory according to which there are pairs of facts that constitute reality even if their mereological fusion doesn't.

VII. Conclusion

Kit Fine's McTaggartian arguments and his novel map of tense-realism appear to be one of the most interesting contributions to the debate on time and tense in recent years. In this paper I have tried to provide an interpretation of Fine's arguments (and the resulting map of tense-realist positions) attempting, on the one hand, to make the logical structure of the arguments as clear and explicit as possible, and on the other hand, to shed some new light on some of the aspects of Fine's picture that have proven to be of more difficult interpretation in the literature.

I have presented three arguments based on the three notions of constitution, metaphysical reality, and truth. Each argument features a certain notion ϕ which applies (either as a predicate or as an operator) to a certain kind of items (facts or propositions). In every case, the distinction between Relativism and Absolutism corresponds to the question about whether ϕ is indexed to a time or not:

²³ 'It is of the essence of facts that they sometime serve as truth-makers' (Correia and Rosenkranz 2011: 45).

²⁴ Fine's truthmaker semantics comes with a collection of *states* endowed with mereological structure (a 'state space'). The notion of a state *exactly verifying* (and falsifying) a statement is recursively defined. Exact verification for conjunctions is defined as follows (using here ' \Vdash ' for exact verification):

TS-CONJUNCTION: $s \Vdash A \wedge B$ if, and only if, for some states u and v : $s = (u + v)$ and $u \Vdash A$ and $v \Vdash B$ (see Fine manuscript: section 5)

According to TS-Conjunction, a state verifies a conjunction if, and only if it is the binary fusion of two states verifying the conjuncts. Fine assumes that states can be impossible, possible, or *actual*, in which case they are called *facts*. Consequently, a statement can be taken to be true in this framework if, and only if, it is verified by a *fact*:

TS-TRUTH: $T(A)$ if, and only if, for some fact s , $s \Vdash A$ (see Fine 2014: 560).

If the notion of truthmaking employed in this section is interpreted as exact verification and the notion of fact in Fine's truthmaker semantics is interpreted as 'fact constituting reality', in Fine's (2005) sense, then, while both TM2 and TM4 seem to be at least compatible with Fine's conception of states and their mereology, it is easy to see that TS-Conjunction and TS-Truth entail TM1 and TM3, respectively.

ABSOLUTE- ϕ : $\phi\{\xi\}$

RELATIVE- ϕ : $\phi_t\{\xi\}$

In each of the arguments the thesis whose rejection characterizes Fine’s presentism—Neutrality—is expressed by an that the familiar temporal operator ‘it is sometimes the case that’ (\mathcal{S}) is factive:

NEUTRALITY: $\mathcal{S}p \vdash p$

The only difference between the arguments concerns the formulation of Coherence which, focussing here on its absolutist version, is expressed in terms of mereological *fusions* for the notion constitution, in terms of *pluralities* for the notions of metaphysical reality, and in terms of *conjunctions* for the notion of truth:

COHERENCE: $C(a), C(b) \vdash C(a + b)$

COHERENCE(R): $R[p], R[q] \vdash R[p, q]$

COHERENCE(T): $Tp, Tq \vdash T(p \wedge q)$

This, however, should be taken as a welcome result. Recall that according to Fine, reference to facts and conjunctions can always be dispensed in favour of talk about metaphysical reality (regimented by his reality operator R). At the same time, although conjunctions and fusions aren’t part of the fundamental furniture of reality, they are quite plausibly *grounded* in it.²⁵ It should thus cause no surprise the fact that the kind of ‘togetherness’ characterizing the notion of coherence manifests itself as a plurality at the *fundamental* level and either as a conjunction or a mereological sum at more *derivative* levels, depending on the kind of entities in question.

The aim of this paper was to present a reconstruction of Fine’s McTaggartian arguments and to give a comprehensive bird’s-eye view of its main characterizing features. Reasons of space have forced me to leave many important issues for another occasion. Whether what was proposed in this paper will be able to withstand closer scrutiny, only time will tell.²⁶

²⁵ See Fine (2012) on the notion of grounding. For an introduction see, among many others, Bliss and Trogon (2014).

²⁶ An ancestor of this paper was presented at the LOGOS *Seminar in Metaphysics* at the University of Barcelona. I am very grateful to the audience on that occasion for their feedback. For academic and financial support I am grateful to the Secretary for Universities and Research of the Ministry of Economy and Knowledge of the Government of Catalonia and the COFUND programme of the Marie Curie Actions of the 7th R&D Framework Programme of the European Union. Special thanks to Sven Rosenkranz for discussions on this and related topics.

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